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High Speed Rail (Crewe – Manchester)

Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement

Volume 5: Appendix WR-001-00000

Water resources and flood risk Water Framework Directive compliance assessment addendum

S108



High Speed Rail (Crewe – Manchester)

Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement



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1 Introduction

1.1 Background

- 1.1.2 This report is an appendix which forms part of Volume 5 of the Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES).
- 1.1.3 This report covers the following community areas:
 - Hough to Walley's Green (MA01);
 - Wimboldsley to Lostock Gralam (MA02);
 - Pickmere to Agden and Hulseheath (MA03);
 - Hulseheath to Manchester Airport (MA06);
 - Davenport Green to Ardwick (MA07); and
 - Manchester Piccadilly Station (MA08).
- 1.1.4 This report provides an update to the Water Framework Directive (WFD) compliance assessment presented in the High Speed Two (HS2) High Speed Rail (Crewe Manchester) Environmental Statement (ES) published in 2022¹ (the main ES) and the Supplementary Environmental Statement 1 (SES1) and Additional Provision 1 Environmental Statement (AP1 ES) also published in 2022². This update should be read in conjunction with the Water Framework Directive (WFD) compliance assessment set out in the main ES Volume 5, Appendix: WR-001-00000.
- 1.1.5 The WFD Background Information and Data (BID) report, BID WR-002-00001 has been updated to accompany SES2 and AP2 ES, including changes to baseline data since the publication of the main ES.
- 1.1.6 Maps referred to within this assessment are contained in the SES2 and AP2 ES Volume 5, Water resources and flood risk Map Book: Map Series WR-03 – Water Framework Directive. This map series shows the location and current overall WFD status of surface water and groundwater bodies across the extent of the AP2 revised scheme.
- 1.1.7 This report also includes the combined assessment of new or different significant traffic effects that are relevant to WFD compliance, as a result of changes in construction or operational traffic flows.

¹ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: <u>https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement</u>.

² High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement* 1 and Additional Provision 1 Environmental Statement. Available online at:

https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementaryenvironmental-statement-1-and-additional-provision-1-environmental-statement.

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- 1.1.8 An assessment was undertaken to determine if the SES2 changes and AP2 amendments would be likely to materially alter the conclusions on WFD compliance reported in the main ES WFD assessment (Volume 5, Appendix: WR-001-00000 of the main ES) and the SES1 and AP1 WFD compliance assessment addendum (SES1 and AP1 ES Volume 5, Appendix: WR-001-00000).
- 1.1.9 In order to differentiate between the original scheme and the subsequent changes, the following terms are used:
 - 'the original scheme' the Bill scheme submitted to Parliament in 2022, which was assessed in the main ES;
 - 'the SES1 scheme' the original scheme with any changes described in SES1 that are within the existing powers of the Bill;
 - 'the AP1 revised scheme' the original scheme as amended by SES1 changes and AP1 amendments;
 - 'the SES2 scheme' the original scheme with any changes described in SES1 (submitted in July 2022) and the SES2; and
 - 'the AP2 revised scheme' the original scheme as amended by SES1 and SES2 changes (as relevant) and AP2 amendments.

1.2 Purpose of this addendum

- 1.2.2 The AP2 revised scheme will cross a number of surface water bodies and groundwater bodies. An assessment of the original scheme's compliance against the objectives of the Water Environment (WFD) Regulations³, was undertaken as part of the water resources and flood risk assessment set out in the main ES (WFD compliance assessment Volume 5, Appendix: WR-001-00000, referred to hereafter as 'the original WFD assessment'), and updated for the AP1 revised scheme (SES1 and AP1 ES WFD compliance assessment Volume 5, Appendix: WR-001-00000, referred to hereafter as 'the AP1 revised scheme WFD assessment').
- 1.2.3 The purpose of this addendum is to report any changes or updates to environmental information and scheme design or assumptions that have occurred since the main ES and SES1 and AP1 ES, which will result in a change in effects and/or the introduction of new effects on WFD status and status objectives from those reported in the original WFD assessment.
- 1.2.4 The original WFD assessment identified potential compliance risks for the following water bodies and scheme components:
 - Wistaston Brook highway drainage (David Whitby Way);
 - Weaver (Marbury Brook to Dane) highway drainage (A530 Nantwich Road);

³ *The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (SI 2017 No. 407).* Available online at: <u>https://www.legislation.gov.uk/uksi/2017/407/made</u>.

- Puddinglake Brook highway drainage (A530 King Street); changes to groundwatersurface water flow (MA02 Granular Borrow Pit D);
- Wade Brook highway drainage (A530 King Street, A556 Shurlach Road, Penny's Lane);
- Hey/Borsdane Brook multiple culverts (Critchley culvert; Windy Bank culvert; Coffin Lane Brook culvert; Nan Holes Brook culvert; Nan Holes Brook offline culvert);
- Timperley Brook highway drainage (M56 East and West Link/access to Manchester Airport High Speed station/Runger Lane realignment);
- Weaver and Dane Quaternary Sand and Gravel Aquifers changes to groundwater flows (MA02 Granular Borrow Pit D) and groundwater quality (Manchester Ship Canal viaduct foundations and highway drainage to ground); and
- Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers groundwater quality (Lowton cutting).
- 1.2.5 The AP1 revised scheme WFD assessment addendum removed the following WFD compliance risks:
 - Wistaston Brook (GB112068055280): amber risk of deterioration associated with highway drainage (David Whitby Way);
 - Weaver (Marbury Brook to Dane) (GB112068060460): amber risk of deterioration associated with highway drainage (A530 Nantwich Road);
 - Puddinglake Brook (GB112068060220): amber risk of deterioration associated with potential impacts on flow velocity and volume due to dewatering arising from MA02 Granular Borrow Pit D and water quality risk associated with highway drainage (A530 King Street);
 - Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700): amber risk of deterioration associated with potential damming of groundwater flow and reduction in groundwater contribution to surface water, due to dewatering arising from MA02 Granular Borrow Pit D, and risk to groundwater quality (Manchester Ship Canal viaduct foundations);
 - Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers (GB41201G101700): amber risk of deterioration of groundwater quality (Lowton cutting); and
 - Hey/Borsdane Brook (GB112069064520): amber risk of deterioration associated with the footprint impact of multiple culverts.
- 1.2.6 Following the AP1 WFD assessment addendum, the remaining WFD compliance risks were:
 - Wade Brook (GB112068060370): amber risk of deterioration associated with potential impacts on surface water quality from highway drainage; and
 - Timperley Brook (GB112069064520): amber risk of deterioration associated with potential impacts on surface water quality from highway drainage.

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1.3 Assessment methodology

1.3.2 The assessment method for deriving effects on WFD status and status objectives is outlined in the Environmental Impact Assessment (EIA) Scope and Methodology Report (SMR), WFD compliance assessment technical note (Volume 5, Appendix: CT-001-00001)⁴.

⁴ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Environmental Impact Assessment Scope and Methodology Report, WFD Compliance Assessment Technical Note,* Volume 5, Appendix: CT-001-00001. Available online at: <u>https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement</u>.

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Part 1: Supplementary Environmental Statement 2

2 New environmental baseline information relevant to WFD

- 2.1.1 New environmental baseline data relevant to the WFD have been derived since publication of the main ES.
- 2.1.2 The BID WR-002-00001 report which accompanies SES2 and AP2 ES has been updated to include:
 - Removal of WFD baseline classification data related to MA04 and MA05, following the amendments contained in the SES/AP1 revised scheme; and
 - New WFD survey data for groundwater features, surface water reconnaissance and detailed hydromorphological surveys.
- 2.1.3 New WFD survey data including reconnaissance surveys and additional information from the Environment Agency resulted in the following changes to receptor values:
 - Tributary of Tabley Brook 2 and Tributary of Tabley Brook 3 have been changed from moderate to low value and screened out of WFD assessment;
 - Tributary of Timperley Brook 1 has been changed from low to moderate value and screened in to WFD assessment; and
 - Surveys of Wood near Chapel Lane Site of Biological Importance (SBI) including Hennersley Bank Ancient Woodland Inventory (AWI) site have confirmed that this is a largely Ash woodland, which is not considered to be groundwater dependent. This is no longer considered a groundwater receptor.
- 2.1.4 The River Basin Management Plan (RBMP)⁵ Cycle 2 data (published in 2015 with an update to status information in 2019) was used as the baseline for the SES2 and AP2 ES assessment. The Cycle 3 RBMP which included updates to environmental objectives, was published in December 2022. The WFD BID reports and assessments will be updated to the Cycle 3 data during the progression of the Bill.
- 2.1.5 The Manchester Airport High Speed station is located over Timperley Brook. An inverted siphon is proposed in the original scheme to allow the watercourse to pass beneath the station footprint. To mitigate this loss, the original scheme included a 330m permanent

⁵ Under the WFD, 'water bodies' are the basic management units and are defined as all or part of a river system or aquifer. These water bodies form part of a larger 'river basin district' (RBD), for which 'river basin management plans' (RBMP) are developed, and environmental objectives are set for all water bodies. These RBMP are produced every six years by the Environment Agency in England and by the Scottish Environment Protection Agency in Scotland, in accordance with the river basin management planning cycle.

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realignment of Timperley Brook. This realigned the watercourse away from an assumed existing 300m long culvert thought to be positioned along Brooks Drive. Since the main ES was published, a site visit by the Environment Agency has identified that the Brook Drive culvert does not exist. It is now understood that Timperley Brook crosses from Davenport Green Wood in a 60m long culvert beneath Brooks Drive and then re-emerges on the western side of Brooks Drive at the boundary of Ringway Golf Club.

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3 Changes to design or construction assumptions relevant to WFD which do not require changes to the Bill

- 3.1.1 Since the main ES, the need to make changes to the design or construction assumptions has been identified. The changes that do not require a change to the Bill are detailed in Part 1 of the relevant SES2 and AP2 ES Volume 2, Community Area reports.
- 3.1.2 There are no SES2 design changes identified as being relevant to WFD.

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4 Assessment of effects on WFD water bodies

- 4.1.1 New water quality sampling data has been used to refine and update assessments of WFD compliance risks to surface water and groundwater quality arising from highway drainage. These changes are reported in SES2 and AP2 ES Volume 5, Appendix: WR-003-00000 and the Background Information and Data (BID), BID WR-004-0MA06 which accompanies the SES2 and AP2 ES.
- 4.1.2 In line with WFD best practice guidance and industry standard assessment principles, this data has been used to carry out a metal bioavailability assessment using the Environment Agency metal bioavailability assessment tool (M-BAT)⁶. Further information on the assessments is reported in SES2 and AP2 ES Volume 5, Appendix: WR-003-00000 and the SES2 and AP2 ES Volume 5, Appendix: WR-003-0MA06 Water resource assessment. As a result, the following WFD compliance risks reported previously have been updated:
 - Wade Brook (GB112068060370): removal of the amber risk of deterioration associated with potential impacts on surface water quality from highway drainage. The previously reported risk to Wade Brook has been removed following the M-BAT assessment; and
 - Timperley Brook (GB112069064520): potential risk to Environmental Quality Standards (EQS) from highway drainage to Tributary of Timperley Brook 1. The previously reported risk to Timperley Brook has been removed following the M-BAT assessment; however, the risk to Tributary of Timperley Brook 1 has been introduced following change to the watercourse receptor value. Therefore, the previously reported water body scale amber risk of deterioration associated with potential impacts on surface water quality from highway drainage remains. This assessment does not take into consideration the proposed AP2 amendment: Additional land permanently required to reconfigure M56 Junction 6 (AP2-006-014), which is described and assessed in Section 5.2 of this report. Should the proposed AP2 amendment AP2-006-014 be adopted, the amber risk of deterioration reported in this section would not occur.
- 4.1.4 In the original scheme, Timperley Brook would pass beneath the Manchester Airport High Speed station in an inverted siphon. This siphon will lead to the loss of open channel which would cause permanent changes to the hydromorphology of Timperley Brook.

⁶ Environment Agency metal bioavailability assessment tool (M-BAT). Tool and method statement available online at: <u>https://www.wfduk.org/resources/rivers-lakes-metal-bioavailability-assessment-tool-m-bat</u>.

- 4.1.5 In the original scheme, a 330m permanent realignment of Timperley Brook was included.
 This realignment was designed to realign the watercourse away from an existing 300m long culvert thought to be positioned along Brooks Drive and create new open channel habitat.
 With the inclusion of this realignment, the main ES reported a minor localised adverse (yellow) effect on Timperley Brook, due to the loss of open channel.
- 4.1.6 Since the main ES was prepared, a site visit by the Environment Agency has identified that the Brooks Drive culvert, reported in the main ES, does not exist. Therefore, the channel realignment proposed in the original scheme would not remove an existing culvert and would not create an additional open channel to mitigate the effect of the station footprint. Therefore, the new SES2 baseline means that the loss of open channel would lead to amber adverse effects on Timperley Brook. This assessment does not take into consideration the proposed AP2 amendment: Additional land permanently required for modifications to the WFD mitigation for Timperley Brook (AP2-006-018), which is described and assessed in Section 5.2 of this report. Should the proposed AP2 amendment AP2-006-018 be adopted, the amber risk of deterioration reported in this section would not occur.

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Part 2: Additional Provision 2 Environmental Statement

5 Summary of changes to scheme design and construction assumptions relevant to WFD

- 5.1.1 There are no amendments in the AP2 revised scheme within community areas Hough to Walley's Green (MA01), Wimboldsley to Lostock Gralam (MA02) or Pickmere to Agden and Hulseheath (MA03).
- 5.1.2 In the Hulseheath to Manchester Airport (MA06) community area, the amendments proposed in the AP2 revised scheme that are relevant to WFD assessment are:
 - AP2-006-010: Additional land permanently required for watercourse diversions at Mobberley Road;
 - AP2-006-012 Additional land permanently required for the revised realignment of Tributary of Birkin Brook 2 south of Thorns Green embankment;
 - AP2-006-014: Additional land permanently required to reconfigure M56 Junction 6; and
 - AP2-006-018: Additional land permanently required for modifications to WFD mitigation for Timperley Brook.
- 5.1.3 In the Davenport Green to Ardwick (MA07) community area, the amendments proposed in the AP2 revised scheme that are relevant to WFD assessment are:
 - AP2-007-005: Change to Bill powers required for modifications to the Birchfield Road vent shaft headhouse; and
 - AP2-007-009: Additional land temporarily required for the reconfiguration of Ardwick construction sidings.
 - In the Manchester Piccadilly (MA08) community area, there are no amendments in the AP2 revised scheme with potential to alter the previously reported effects on WFD status and status objectives.
- 5.1.4 A detailed description of these changes is provided in the SES2 and AP2 ES Volume 2, Community Area reports for MA06, MA07 and MA08 and in the relevant maps from the Volume 2 Map Book: Map Series CT-06 – Proposed Scheme.
- 5.1.5 Table 1 summarises the scheme components amended by the AP2 revised scheme which have potential to change effects on surface water WFD status and objectives that were reported in the original WFD assessment or the AP1 revised scheme WFD assessment addendum.

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5.1.6 Table 2 summarises the scheme components amended by the AP2 revised scheme which have potential to change effects on groundwater WFD status and objectives reported in the original WFD assessment or the AP1 revised scheme WFD assessment addendum.

5.2 Hulseheath to Manchester Airport (MA06) community area Additional Provision changes relevant to WFD

AP2-006-010: Additional land permanently required for watercourse diversions at Mobberley Road (Tributaries of Birkin Brook)

- 5.2.1 The watercourse diversions (AP2-006-010) amendment was scoped in as having the potential to alter effects on WFD status and status objectives for the Birkin Brook Mobberley Brook to River Bollin (including Rostherne Brook) WFD water body.
- 5.2.2 Since the main ES, further design development has identified the need to modify the design to meet requirements for flood risk and drainage standards and improve resilience to climate change. An overflow channel is proposed to convey flood flows from the Tributary of Birkin Brook 1 beneath the Mid-Cheshire Railway.

Changes in Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)

5.2.3 The watercourse diversions (AP2-006-010) amendment has the potential to alter effects on WFD status and status objectives for Tributary of Birkin Brook 1 (Middle House Brook). The AP2 amendment design incorporates an overspill weir from the existing watercourse to pass high flow into a new flood overflow channel and a number of additional culverts to carry the overflow channel beneath the Mid-Cheshire Railway, highways and access roads (Table 1).

AP2-006-012: Additional land permanently required for the revised realignment of Tributary of Birkin Brook 2 south of Thorns Green embankment

5.2.4 The realignment of Tributary of Birkin Brook 2 (AP2-006-012) amendment was scoped in as having the potential to alter effects on WFD status and status objectives for the Birkin Brook
 - Mobberley Brook to River Bollin (including Rostherne Brook) WFD water body.

5.2.5 Since the main ES, further design development has identified that a section of Tributary of Birkin Brook 2 is situated within the footprint of Thorns Green embankment, resulting in the requirement for an additional permanent watercourse realignment.

Changes in Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)

- 5.2.6 The realignment of Tributary of Birkin Brook 2 (AP2-006-012) amendment has the potential to alter effects on WFD status and status objectives for Tributary of Birkin Brook 2. The proposed amendment includes a watercourse realignment and two new culverts (Table 1).
- 5.2.7 Tributary of Birkin Brook 2 is a minor, low value watercourse which is not scoped in for detailed WFD assessment. The amendment does not create a risk for WFD compliance and is not discussed further in this report.

AP2-006-014: Additional land permanently required to reconfigure M56 Junction 6

- 5.2.8 The reconfiguration of M56 Junction 6 (AP2-006-014) amendment was scoped in as having the potential to alter effects on WFD status and status objectives for the Bollin (River Dean to Ashley Mill) WFD water body and the Weaver and Dane Quaternary Sand and Gravel Aquifers WFD groundwater body.
- 5.2.9 Since the main ES, consultation with National Highways has identified the need to amend the original scheme around M56 Junction 6 to meet required highway standards. The M56 will be realigned for a length of 2.5km and Junction 6 will be reconfigured.

Changes in Bollin (River Dean to Ashley Mill) (GB112069061381)

5.2.10 The reconfiguration of M56 Junction 6 (AP2-006-014) amendment has the potential to alter effects on WFD status and status objectives for the River Bollin and a number of its tributary watercourses. The existing M56 bridge crossing of the River Bollin will require widening to introduce new slip roads, and the new junction and approach roads will cross several watercourses in the area (Table 1). The proposed design incorporates culverts, watercourse realignments, drainage and attenuation ponds.

Changes in Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)

5.2.11 The reconfiguration of M56 Junction 6 (AP2-006-014) amendment has the potential to alter effects on WFD status and status objectives for the groundwater body, as the proposed design includes below ground structures such as overbridge foundations and retaining walls (Table 2).

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AP2-006-018: Additional land permanently required for modifications to WFD mitigation for Timperley Brook

- 5.2.12 The modification of mitigation for Timperley Brook (AP2-006-018) amendment was scoped in as having the potential to alter effects on WFD status and status objectives for the Timperley Brook WFD water body.
- 5.2.13 Since the main ES, additional consultation with the Environment Agency concluded that a culvert proposed to be daylighted for WFD mitigation in the original WFD assessment does not exist. Therefore, the amendment provides land for alternative WFD mitigation to offset the loss of Timperley Brook beneath Manchester Airport High Speed station.

Changes in Timperley Brook (GB112069061260)

5.2.14 The modification of mitigation for Timperley Brook (AP2-006-018) amendment has the potential to alter effects on WFD status and status objectives for Timperley Brook and Tributary of Timperley Brook 1. The proposed mitigation design includes several additional watercourse realignments, de-culverting or daylighting of existing culverts (Table 1) and riparian/flood plain habitats.

5.3 Davenport Green to Ardwick (MA07) community area Additional Provision changes relevant to WFD

AP2-007-005: Change to Bill powers required for modifications to the Birchfields Road vent shaft headhouse

- 5.3.1 The vent shaft modifications (AP2-007-005) amendment was scoped in as having the potential to alter effects on WFD status and status objectives for the Manchester and East Cheshire Permo-Triassic Sandstone Aquifers WFD groundwater body.
- 5.3.2 Since the main ES, additional work has identified the requirement for the Birchfield Road vent shaft and headhouse to be reconfigured to accommodate redesign of the tunnel ventilation system.

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Changes in Manchester and East Cheshire Permo-Triassic Sandstone Aquifers (GB1201G101100)

5.3.3 The vent shaft modifications (AP2-007-005) amendment has the potential to alter effects on WFD status and status objectives for the groundwater body as the proposed design includes a new concrete basement structure (Table 2).

AP2-007-009: Additional land temporarily required for the reconfiguration of Ardwick construction sidings

- 5.3.4 The Ardwick modifications (AP2-007-009) amendment was scoped in as having the potential to alter effects on WFD status and status objectives for the Manchester and East Cheshire Permo-Triassic Sandstone Aquifers WFD groundwater body.
- 5.3.5 Since the main ES, design development has resulted in substantial changes to the design in the area around Manchester Piccadilly Station.

Changes in Manchester and East Cheshire Permo-Triassic Sandstone Aquifers (GB1201G101100)

5.3.6 The Ardwick modifications (AP2-007-009) amendment has the potential to alter effects on WFD status and status objectives for the groundwater body as the proposed design includes a new retaining wall (Table 2).

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Table 1: Summary of scheme components proposed or removed under the AP2 revised scheme with the potential to change effects on WFD surface water body status and status objectives reported in the original WFD assessment and SES/AP1 WFD addendum

Surface water body	Surface watercourse	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)	Tributary of Birkin Brook 2	Realignment	Tributary of Birkin Brook 2 realignment	The realignment will follow the HS2 embankment, around a drainage pond and under an access road.	378023, 383735	New	GB11206906 1370-T-03- RE-01a	New watercourse realignment for AP2- 006-012
Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)	Tributary of Birkin Brook 2	Highway realignment culvert	Tributary of Birkin Brook 2 offline west culvert	Approximately 14m in length.	377502, 383680	New	GB11206906 1370-T-03- CV-01	New culvert for AP2-006- 012 (see Figure 1 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)	Tributary of Birkin Brook 2	Access road culvert	Tributary of Birkin Brook 2 offline east culvert	Approximately 23m length of culvert under access road.	378044, 383699	New	GB11206906 1370-T-03- CV-02	New culvert for AP2-006- 012 (see Figure 1 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)	Tributary of Birkin Brook 1	Access road culvert	Tributary of Birkin Brook 1 offline east culvert	Currently indicated as a culvert to provide access to Lower House Farm field. May be replaced by an overbridge. Length is approximately 34m.	377811, 383308	New	GB11206906 1370-T-04- CV-03	New culvert for AP2-006- 010 (see Figure 1 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)

Surface water body	Surface watercourse	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)	Tributary of Birkin Brook 1	Culvert	Mid-Cheshire line offline south culvert	Permanent structure on overflow channel following removal of Ashley Railhead Culvert (construction) to convey flood flows. Length under Mid-Cheshire Railway is approximately 26.5m.	377582, 383269	New	GB11206906 1370-T-04- CV-04	New culvert on overflow channel for AP2-006-010 (see Figure 1 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)	Tributary of Birkin Brook 1	Culvert	Ashley railhead offline temporary culvert south	Temporary culvert on overflow channel approximate length of 165m, to be replaced by an open channel after decommissioning of Ashley Railhead.	377409, 383224	New	GB11206906 1370-T-04- CV-05	New temporary culvert on overflow channel for AP2-006-010 (see Figure 1 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)	Tributary of Birkin Brook 1	Realignment	Tributary of Birkin Brook 1 overflow channel	Overflow channel for flood flow. Includes an overspill weir to pass water into the overflow channel.	377488, 383237	New	GB11206906 1370-T-04- RE-02a	New realignment is overflow channel for flood flow for AP2-006- 010 (see Figure 1 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Birkin Brook - Mobberley Brook to River Bollin (including	Tributary of Birkin Brook 1	Culvert	Mobberley Road offline culvert	Culvert carrying overflow channel under Mobberley Road, approximately 45m in length.	377278, 383359	New	GB11206906 1370-T-04- CV-06	New culvert on overflow channel for AP2-006-010 (see Figure 1 in SES2 and AP2 ES Volume 5,

Surface water body	Surface watercourse	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
Rostherne Brook) (GB112069061340)								Appendix: WR-003- MA06)
Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)	Tributary of Birkin Brook 1	Culvert	Tributary of Birkin Brook 1 offline west culvert	Length is approximately 7.5m.	377520, 383604	New	GB11206906 1370-T-04- CV-07	New culvert for AP2-006- 010 (see Figure 1 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)	Tributary of Birkin Brook 1	Extension of existing culvert	Mid-Cheshire line offline north culvert	Length is approximately 21m to replace existing culvert under railway line.	377475, 383686	New	GB11206906 1370-T-04- CVX-08	New culvert to replace existing structure for AP2-006-010 (see Figure 1 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)	Tributary of Birkin Brook 1	Culvert	Ashley railhead offline temporary culvert north	Temporary culvert for construction railhead. Length is approximately 50m, to be replaced by an open channel after decommissioning of Ashley Railhead.	377372, 383569	New	GB11206906 1370-T-04- CV-09	New temporary culvert for AP2-006-010 (see Figure 1 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Bollin (River Dean to Ashley Mill) (GB112069061381)	River Bollin	Underbridge	River Bollin offline bridge widening	River Bollin offline bridge widening South. River Bollin offline bridge widening North.	379193, 384545	New	GB11206906 1381-MW-01- UB-01	Widening of existing M56 bridge crossing for AP2-006-014

Surface water body	Surface watercourse	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 2	Realignment	Tributary of River Bollin 2 realignment	Approximately 64m in length, average depth 1m channel, top width 3m and bottom width 1m.	379990, 384498	New	GB11206906 1381-T-02- RE-01	New watercourse realignment for AP2- 006-014
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 2	Culvert	Tributary of River Bollin 2 offline culvert	Approximate length is 96m.	379976, 384510	New	GB11206906 1381-T-02- CV-01	New culvert for AP2-006- 014 (see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 3	Realignment	Tributary of River Bollin 3 realignment	Approximately 222m in length, average depth 1m channel, top width 3m and bottom width 1m.	379467, 384460	New	GB11206906 1381-T-03- RE-02	New watercourse realignment for AP2- 006-014
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 3	Culvert	Tributary of River Bollin 3 M56 drain offline culvert	Approximate length is 8m.	379718, 384808	New	GB11206906 1381-T-03- CV-02	New culvert for AP2-006- 014 (see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 3	Culvert	Tributary of River Bollin 3 M56 offline culvert	Approximate length is 298m.	379596, 384503	New	GB11206906 1381-T-03- CV-03	New culvert for AP2-006- 014 (see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)

Surface water body	Surface watercourse	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 4	Realignment	Tributary of River Bollin 4 diversion	Approximately 12m in length. Steep topography – cascade.	379114, 384469	New	GB11206906 1381-T-04- RE-03	New watercourse realignment for AP2- 006-014
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 4	Culvert	Tributary of River Bollin 4 offline culvert south	Approximate length is 102m.	379059, 384479	New	GB11206906 1381-T-04- CV-04	New culvert for AP2-006- 014 (see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 4	Culvert	Tributary of River Bollin 4 offline culvert north	Approximate length is 8m.	379169, 384483	New	GB11206906 1381-T-04- CV-05	New culvert for AP2-006- 014 (see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 5	Realignment	Tributary of River Bollin 5	Approximately 205m in length, average depth 2.5m channel, top width 6m and bottom width 1m.	379332, 384614	New	GB11206906 1381-T-04a- RE-04	New watercourse realignment for AP2- 006-014
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 6	Culvert	Tributary of River Bollin 6 offline culvert	Approximate length is 75m.	378688, 384566	New	GB11206906 1381-T-05- CV-06	New culvert for AP2-006- 014 (see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)

Surface water body	Surface watercourse	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 6	Realignment	Tributary of River Bollin 6 realignment	Approximate length is 22m, average depth 1m channel, top width 3m and bottom width 1m.	378663, 384586	New	GB11206906 1381-T-05- RE-05	New watercourse realignment for AP2- 006-014
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 7	Culvert	Tributary of River Bollin 7 offline culvert	Approximate length is 68m.	378486, 384532	New	GB11206906 1381-T-06- CV-07	New culvert for AP2-006- 014 (see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Bollin (River Dean to Ashley Mill) (GB112069061381)	Tributary of River Bollin 7	Realignment	Tributary of River Bollin 7 realignment	Approximately 48m in length, average depth 1m channel, top width 3m and bottom width 1m.	378515, 384593	New	GB11206906 1381-T-06- CV-08	New watercourse realignment for AP2- 006-014
Bollin (River Dean to Ashley Mill) (GB112069061381)	Drain to M56 1	Realignment	M56 J6 drain realignment	Approximately 354m in length, average depth 1m channel, top width 3m and bottom width 1m.	379577, 384269	New	GB11206906 1381-T-07- RE-06	New watercourse realignment for AP2- 006-014
Bollin (River Dean to Ashley Mill) (GB112069061381)	Drain to M56 1	Culvert	M56 J6 drain Sunbank Lane offline culvert 4	Approximate length is 5m.	379614, 384294	New	GB11206906 1381-T-07- CV-09	New culvert for AP2-006- 014 (see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Bollin (River Dean to Ashley Mill) (GB112069061381)	Drain to M56 1	Culvert	M56 J6 drain Sunbank Lane offline culvert 1	Approximate length is 15m.	379729, 384362	New	GB11206906 1381-T-07- CV-10	New culvert for AP2-006- 014

Surface water body	Surface watercourse	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
								(see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Bollin (River Dean to Ashley Mill) (GB112069061381)	Drain to M56 1	Culvert	M56 J6 drain Sunbank Lane offline culvert 2	Approximate length is 12m.	379768, 384403	New	GB11206906 1381-T-07- CV-11	New culvert for AP2-006- 014 (see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Bollin (River Dean to Ashley Mill) (GB112069061381)	Drain to M56 1	Culvert	M56 J6 drain Sunbank Lane offline culvert 3	Approximate length is 16m.	379794, 384435	New	GB11206906 1381-T-07- CV-12	New culvert for AP2-006- 014 (see Figure 3 in SES2 and AP2 ES Volume 5, Appendix: WR-003- MA06)
Timperley Brook (GB112069061260)	Tributary of Timperley Brook 1	Culvert	Tributary of Timperley Brook 1 offline culvert south	Approximate length is 82m.	380237, 385509	New	GB11206906 1260-T-01- CV-01	New culvert for AP2-006- 018, replacing part of an existing culvert
Timperley Brook (GB112069061260)	Tributary of Timperley Brook 1	Culvert	Tributary of Timperley Brook 1 offline culvert north	Approximate length is 8m.	380208, 385603	New	GB11206906 1260-T-01- CV-02	New culvert for AP2-006- 018, replacing part of an existing culvert
Timperley Brook (GB112069061260)	Tributary of Timperley Brook 1	Realignment	Tributary of Timperley	Approximate length is 128m. WFD mitigation for loss of open channel	380205, 385535	New	GB11206906 1260-T-01- RE-01	New watercourse realignment and daylighting/removing

Surface water body	Surface watercourse	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
			Brook 1 realignment 1	under Manchester Airport High Speed station, includes daylighting/removing existing culvert.				existing culvert for AP2- 006-018
Timperley Brook (GB112069061260)	Tributary of Timperley Brook 1	Realignment	Tributary of Timperley Brook 1 realignment 2	Approximate length is 122m. WFD mitigation for loss of open channel under Manchester Airport High Speed station includes daylighting/removing existing culvert	380117, 385812	New	GB11206906 1260-T-01- RE-02	New watercourse realignment and daylighting/removing existing culvert for AP2- 006-018
Timperley Brook (GB112069061260)	Tributary of Timperley Brook 1	Realignment	Tributary of Timperley Brook 1 realignment 3	Approximate length is 91m. WFD mitigation for loss of open channel under Manchester Airport High Speed station.	379726, 386257	New	GB11206906 1260-T-01- RE-03	New watercourse realignment for AP2- 006-018
Timperley Brook (GB112069061260)	Timperley Brook	Diversion	Timperley Brook diversion	Timperley Brook creation of high flow channel/wetland area to provide flood capacity and also improve habitat, associated with other WFD mitigation downstream of Manchester Airport High Speed station.	380148, 386140	Modified	GB11206906 1260-MW-01- RE-01	New high flow channel/wetland area for AP2-006-018

Surface water body	Surface watercourse	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
Timperley Brook (GB112069061260)	Timperley Brook	Extension of existing culvert	Brooks Drive offline culvert	Approximate length is 20m replacing/extending assumed existing culvert.	380184, 386157	New	GB11206906 1260-MW-01- CVX-03	Culvert extension for AP2-006-018
Timperley Brook (GB112069061260)	Timperley Brook	Realignment	Timperley Brook realignment west	Approximate length is 136m. WFD mitigation for loss of open channel under Manchester Airport High Speed station.	379758, 386266	New	GB11206906 1260-MW-01- RE-04	New watercourse realignment/ enhancement at Shay Lane for AP2-006-018
Timperley Brook (GB112069061260)	Timperley Brook	Realignment	Timperley Brook realignment east	Approximate length is 193m. WFD mitigation for loss of open channel under Manchester Airport High Speed station.	380098, 386201	New	GB11206906 1260-MW-01- RE-05	New watercourse realignment/ enhancement at Ringway Golf Club for AP2-006-018
Timperley Brook (GB112069061260)	Timperley Brook	Culvert	Timperley Brook field access culvert south	Approximate length is 5m.	379726, 386280	New	GB11206906 1260-MW-01- CV-04	New culvert for AP2-006- 018 replacing existing culvert
Timperley Brook (GB112069061260)	Timperley Brook	Culvert	Timperley Brook field access culvert north	Approximate length is 5m.	379708, 386298	New	GB11206906 1260-MW-01- CV-05	New culvert for AP2-006- 018 replacing existing culvert

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Table 2: Summary of scheme components proposed or removed under the AP2 revised scheme with the potential to change effects on WFD groundwater body status and status objectives reported in the original WFD assessment and SES1/AP1 ES WFD addendum

Groundwater body	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Overbridge Foundations	Thorns Green accommodation offline overbridge	Bridge length approximately 67m.	378907, 384520	New	GB41202G991700- OF-151A	New bridge foundations for AP2-006-014
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Underbridge Foundations	M56 River Bollin offline bridge widening south	Extension of approximately 12.8m.	379178, 384483	New	GB41202G991700- OF-155A	Widening of existing motorway bridge crossing of River Bollin for AP2-006- 014
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Underbridge Foundations	M56 River Bollin offline bridge widening north	Extension of approximately 12.8m.	379209, 384574	New	GB41202G991700- OF-155B	Widening of existing motorway bridge over River Bollin for AP2-006-014
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Retaining Wall	M56 J6 Southbound merge offline retaining wall	Approximately 444m length, up to 10m deep.	379567, 384522	New	GB41202G991700- RT-157A	New retaining wall for AP2- 006-014
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Overbridge Foundations	M56 J6 gyratory offline overbridge west	Bridge approximately 52.5m length.	379767, 384637	New	GB41202G991700- OF-157B	New bridge foundations for AP2-006-014
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Retaining Wall	M56 J6 Wilmslow Road link offline retaining wall	Approximately 131m length, up to 13.5m deep.	379995, 384511	New	GB41202G991700- RT-157C	New retaining wall for AP2- 006-014

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Groundwater body	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Overbridge Foundations	M56 J6 gyratory offline overbridge east	Bridge approximately 63.1m length.	379908, 384715	New	GB41202G991700- OF-157D	New bridge foundations for AP2-006-014
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Retaining Wall	M56 J6 Northbound merge offline retaining wall	Up to 4.4m deep, length 48m.	380004, 384791	New	GB41202G991700- RT-159A	New retaining wall for AP2- 006-014
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Retaining Wall	M56 J6 Southbound diverge offline retaining wall	Approximately 216m length, up to 8.5m deep.	380114,38 4720	New	GB41202G991700- RT-159B	New retaining wall for AP2- 006-014
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Retaining Wall	M56 J6 Hale Road link overbridge retaining wall	Approximately 25m length, up to 2m deep.	380219, 384678	New	GB41202G991700- RT-160A	New retaining wall for AP2- 006-014
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Retaining Wall	M56 J6 The Hut Group (THG) attenuation tank retaining wall	Approximately 40m length and up to 4m deep.	380250, 384708	New	GB41202G991700- RT-160B	New retaining wall for AP2- 006-014
Manchester and East Cheshire Permo-Triassic Sandstone Aquifers (GB1201G101100)	Vent Shaft	Birchfields Road vent shaft	24.0m by 47.8m deep. Basement fan room 64.0m x 27.9m x 8.5m.	386465, 394127	Modified	2DE01-MWJ-CV- DPL-M003-021315	New underground basement for horizontal fan ventilation for AP2-006- 008

Groundwater body	Scheme component type	Scheme component name	Details	Location (NGR)	Scheme component new, modified or removed from original scheme?	Scheme component (ID)	Comments
Manchester and East Cheshire Permo-Triassic Sandstone Aquifers (GB1201G101100)	Retaining Wall	Ardwick access road retaining wall	Approximately 144m length up to 3m deep.	386239, 397275	New	GB1201G101100- RT-09A	New retaining wall for AP2- 006-011

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6 Assessment of effects on WFD water bodies

6.1 Existing baseline

6.1.1 Details of the WFD status and status objectives of the relevant surface and groundwater bodies are summarised in the BID WR-002-00001 report which accompanies SES2 and AP2 ES.

6.2 Embedded mitigation

- 6.2.1 Mitigation has been embedded within the design, construction methodology and operational phase of the original scheme in order to reduce any effects on the water environment and to ensure that the scheme is, where possible, inherently compliant with the objectives of the WFD for both surface water and groundwater bodies. This is described in the SMR WFD compliance assessment technical note (see Volume 5, Appendix: CT-001-00001)⁴.
- 6.2.2 A number of additional measures have been embedded within the AP2 revised scheme proposals at Mobberley Road to mitigate flood risk. These measures are outlined in Section 5 of the SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport (MA06) Community Area report. Assessment including the embedded mitigation at the M56 Junction 6 amendment, shows that the drainage design would be sufficient to avoid WFD deterioration risks from highway drainage on Timperley Brook and Tributary of Timperley Brook 1 (see Annex A).

6.3 Effects on Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061340)

- 6.3.1 The watercourse diversions (AP2-006-010) amendment has potential to introduce new effects on the Birkin Brook Mobberley Brook to River Bollin (including Rostherne Brook) surface water body.
- 6.3.2 Although the amendment introduces additional culvert structures compared to the main ES, these will be located on a new channel that will function only during high flow periods. The permanent watercourse diversion remains largely as described in the main ES.

Effects on current status

6.3.3 The Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) surface water body is currently at Bad status.

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- 6.3.4 A detailed impact assessment has been undertaken to identify the magnitude of the effects of the AP2 revised scheme on the current status of the quality elements of the water body. The additional design elements listed in Table 1 have been assessed as having additional minor localised adverse (yellow) effects on hydromorphological and biological quality elements. These are reported in detail in the updated WFD detailed impact assessment tables in Annex A.
- 6.3.5 The watercourse diversions (AP2-006-010) amendment is not expected to introduce any new risks to the deterioration of the current status of any quality elements in the water body.

Effects on status objectives

- 6.3.6 The Birkin Brook Mobberley Brook to River Bollin (including Rostherne Brook) surface water has an objective to achieve Moderate status.
- 6.3.7 The Environment Agency has identified 'Reasons for Not Achieving Good' status (RNAG) which include diffuse and point source pollution. The AP2 revised scheme has been considered in terms of its potential to inhibit the water body from achieving its status objective.
- 6.3.8 The AP2-006-010 amendment will not significantly alter pollution sources or pathways and therefore, is not expected to prevent the water body from achieving its future status objectives.

6.4 Effects on Bollin (River Dean to Ashley Mill) (GB112069061381)

- 6.4.1 The reconfiguration of M56 Junction 6 (AP2-006-014) amendment has potential to introduce new effects on the Bollin (River Dean to Ashley Mill) surface water body.
- 6.4.2 The amendment includes a substantial number of new watercourse realignments, culverts, and below ground structures that could affect surface watercourses directly as well as groundwater features such as springs. It also includes the widening of an existing motorway bridge crossing of the River Bollin.

Effects on current status

- 6.4.3 The Bollin (River Dean to Ashley Mill) surface water body is currently at Moderate status.
- 6.4.4 The original WFD assessment identified a number of overall minor localised adverse (yellow) effects on the Bollin (River Dean to Ashley Mill). A detailed impact assessment has been undertaken to identify the magnitude of the effects of the AP2 revised scheme on the current status of the quality elements of the water body.
- 6.4.5 The additional culverts listed in Table 1 have been assessed as having individual additional minor localised adverse (yellow) effects on hydromorphological and biological quality

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elements. These are reported in the updated WFD detailed impact assessment tables in Annex A.

- 6.4.6 The changes are not considered to present a risk of deterioration when considered individually; however, in total, an approximate loss of 450m to 500m of open watercourses is expected due to the combined effect of culverts. This is anticipated to lead to a widespread adverse (amber) effect.
- 6.4.7 Between 500m to 550m of watercourse realignments are proposed, which could theoretically offset the impacts of the additional culverts by improving existing watercourses. However, due to physical constraints in the area, on a precautionary basis, it is considered that hard engineering is likely to be required for some watercourse realignments. On a precautionary basis, the watercourse realignments have typically been assessed as having minor localised adverse (yellow) effects as they may introduce engineered sections to natural watercourses.
- 6.4.8 Therefore, there is considered to be a new risk of the reconfiguration of M56 Junction 6 (AP2-006-014) amendment causing deterioration in the current status of biological and hydromorphological quality elements for the water body, unless appropriate mitigation for the combined effects of culverts can be identified.

Effects on status objectives

- 6.4.9 The Bollin (River Dean to Ashley Mill) surface water body has an objective to achieve (or remain at) Moderate status.
- 6.4.10 The Environment Agency has identified several RNAG which include diffuse and point source pollution from a range of activities, including urban and transport sectors as well as physical modifications. The AP2 revised scheme has been considered in terms of its potential to inhibit the water body from achieving its status objective.
- 6.4.11 As the reconfiguration of M56 Junction 6 (AP2-006-014) amendment introduces the potential deterioration risks reported above relating to physical modifications, there is a corresponding risk to meeting future WFD status objectives.

6.5 Effects on Timperley Brook (GB112069061260)

- 6.5.1 The modification of mitigation for Timperley Brook (AP2-006-018) and the reconfiguration of M56 Junction 6 (AP2-006-014) amendments have the potential to alter effects on WFD status and status objectives for the Timperley Brook WFD water body.
- 6.5.2 The AP2-006-018 amendment includes additional WFD mitigation design to offset the impacts identified in the original WFD assessment. The proposed mitigation design includes several additional watercourse realignments, de-culverting or daylighting of existing culverts and riparian habitat enhancements.

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6.5.3 The AP2-006-014 amendment includes changes to the highways drainage which increase the percentage of highways runoff which passes through mitigation rain gardens, before being discharged into Tributary of Timperley Brook 1.

Effects on current status

- 6.5.4 The Timperley Brook surface water body is currently at Moderate status.
- 6.5.5 A detailed impact assessment has been undertaken to identify the magnitude of the effects of the AP2 revised scheme on the current status of the quality elements of the water body. The additional design elements listed in Table 1 have been included to offset the adverse WFD effects associated with Manchester Airport High Speed station that were identified in the main ES.
- 6.5.6 As set out in SES2 (Section 4) updated baseline data from the Environment Agency has identified that the culvert along Brooks Drive, reported in the main ES, does not exist. Therefore, the channel realignment proposed in the original scheme would not create additional open channel to mitigate for the amber risk of deterioration from the station footprint. With the inclusion of the mitigation set out in this amendment, the remaining impact on Timperley Brook due to the station footprint, is assessed to be minor localised adverse (yellow) risk. This amendment will, therefore, remove the amber risk of deterioration set out in the SES2 (Section 4).
- 6.5.7 The majority of the amended proposals in AP2-006-018 will have minor localised beneficial effects (light blue) on hydromorphological and biological quality elements through deculverting and improving the morphology and riparian zone of existing modified watercourses. These are reported in the updated WFD detailed impact assessment tables in Annex A.
- 6.5.8 The modification of mitigation for Timperley Brook (AP2-006-018) amendment is not expected to introduce any new risks to the deterioration of the current status of any quality elements in the water body.
- 6.5.9 The reconfiguration of M56 Junction 6 (AP2-007-014) amendment is anticipated to remove the amber risk of deterioration from Tributary of Timperley Brook 1, reported in the SES2 (Part 1 of this report), due to the change in receptor value. A screening exercise identified the need for a routine runoff assessment related to the proposed modifications to the M56 Junction 6, as part of the AP2 revised scheme (see SES2 and AP2 Volume 5, Appendix: WR-003-0MA06 for further details).
- 6.5.10 The assessment has identified that routine runoff drainage from the proposed highway drainage changes to Tributary of Timperley Brook 1 would result in a pass for sediment-bound and soluble pollutant zinc, against EQS. While the predicted annual average copper concentrations are above EQS (due to higher than EQS baseline values), the assessment shows that the highways drainage discharge into this watercourse would lead to dilute of the existing high background concentrations (due to the increase in highways drainage passing through rain garden mitigation). Therefore, this amendment is anticipated to remove the

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amber risk of deterioration to Timperley Brook (GB112069061260), reported in the main ES and updated in the SES2 (Part 1 of this report).

Effects on status objectives

- 6.5.11 The Timperley Brook surface water body has an objective to achieve Moderate status.
- 6.5.12 The Environment Agency has identified RNAG including diffuse and point source pollution from urban areas and transport as well as physical modifications, and the water body is classed as heavily modified. The AP2 revised scheme has been considered in terms of its potential to inhibit the water body from achieving its status objective.
- 6.5.13 The proposed amendments have been designed to be in line with WFD objectives and mitigation measures for the water body and should make a positive contribution to delivering future status objectives.

6.6 Effects on Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)

6.6.1 The reconfiguration of M56 Junction 6 (AP2-006-014) amendment has potential to introduce new effects on the Weaver and Dane Quaternary Sand and Gravel Aquifers WFD groundwater body. The amendment includes a number of structures that could intercept groundwater and affect associated features such as springs, either by reducing groundwater flow or by the physical loss of their surface expression.

Effects on current status

- 6.6.2 The Weaver and Dane Quaternary Sand and Gravel Aquifers groundwater body is currently at Poor overall status (Poor chemical status and Good quantitative status).
- 6.6.3 A detailed impact assessment has been undertaken to identify the magnitude of the effects of the AP2 revised scheme on the current status of the quality elements of the water body. The additional design elements listed in Table 2 have been assessed as having individual additional minor localised adverse (yellow) effects. These are reported in the updated WFD detailed impact assessment tables in Annex A.
- 6.6.4 The reconfiguration of M56 Junction 6 (AP2-006-014) amendment is not expected to introduce any new risks to the deterioration of the current status of any quality elements in the water body.

Effects on status objectives

6.6.5 The Weaver and Dane Quaternary Sand and Gravel Aquifers groundwater body has an objective to achieve Good status.

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- 6.6.6 The Environment Agency has identified RNAG for chemical status including diffuse pollution from agriculture as well as other reasons currently unknown and under investigation. The AP2 revised scheme has been considered in terms of its potential to inhibit the water body from achieving its status objective.
- 6.6.7 As the reconfiguration of M56 Junction 6 (AP2-006-014) amendment will not significantly alter pollution sources or pathways affecting chemical conditions, it is not expected to prevent the water body from achieving its future status objectives.

6.7 Effects on Manchester and East Cheshire Permo-Triassic Sandstone Aquifers (GB1201G101100)

- 6.7.1 The vent shaft modifications (AP2-007-005) at Birchfield Road and Ardwick modifications (AP2-007-008) have potential to introduce new effects on the Manchester and East Cheshire Permo-Triassic Sandstone Aquifers WFD groundwater body.
- 6.7.2 The amendments include below ground structures that could affect groundwater flows and levels. The vent shaft modifications (AP2-007-005) will involve an additional basement structure in the vent shaft, and Ardwick modifications (AP2-007-009) includes an additional shallow retaining wall for an access road.

Effects on current status

- 6.7.3 The current status of the Manchester and East Cheshire Permo-Triassic Sandstone Aquifers groundwater body is Poor for both quantitative and chemical status. A detailed impact assessment has been undertaken to identify the magnitude of the effects of the AP2 revised scheme on the current status of the quality elements of the water body.
- 6.7.4 The vent shaft modifications (AP2-007-005) amendment is anticipated to introduce an additional minor localised adverse (yellow) effect, as the basement fan room could form a barrier to groundwater flow in the superficial glacial till which could lead to localised displacement of groundwater. This is not considered to present any risk of WFD deterioration at water body scale.
- 6.7.5 The Ardwick modifications (AP2-007-009) amendment is anticipated to introduce an additional minor localised adverse (yellow) effect, as groundwater flow is not thought to be parallel to the retaining wall, so may partially form a barrier to very shallow groundwater flow. This is not considered to present any risk of WFD status deterioration at water body scale especially given the shallow nature of the below ground penetration.
- 6.7.6 The vent shaft modifications (AP2-007-005) and Ardwick modifications (AP2-007-009) amendments are not expected to introduce any new risks to the deterioration of the current status of any quality elements in the water body.

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Effects on status objectives

- 6.7.7 The Manchester and East Cheshire Permo-Triassic Sandstone Aquifers groundwater body has an objective to meet Good status.
- 6.7.8 The Environment Agency has identified RNAG relating to saline intrusions to groundwater. The AP2 revised scheme has been considered in terms of its potential to inhibit the water body from achieving its status objective.
- 6.7.9 The vent shaft modifications (AP2-007-005) and Ardwick modifications (AP2-007-009) amendments are not expected to prevent the water body from achieving its future status objectives.

6.8 Additional mitigation requirements to reduce risk of deterioration of current status

- 6.8.1 For the Bollin (River Dean to Ashley Mill) surface water body, the deterioration risk from the combined impacts of culverts may be reduced by identifying enhancements to existing watercourses to offset the footprint loss of open channel from culverts. This may be in the form of naturalised watercourse realignments within the design, if not limited by topographic and geological conditions and design constraints.
- 6.8.2 An initial review has been completed to identify similar watercourses nearby within the water body which could be improved. This has identified potential mitigation opportunities including:
 - removal of redundant structures and culverts;
 - riparian habitat enhancements;
 - potential wetland habitat creation; and
 - in-channel habitat works to increase morphological diversity.
- 6.8.3 Wherever possible, like for like mitigation measures would be included, such as removal of culverts to create open channel habitat. However, where this is not practicable, alternative mitigation options will be considered. The approach to mitigation will be discussed and developed in consultation with the Environment Agency. Further surveys of the baseline condition of the watercourses would also enable a more detailed assessment and development of mitigation designs.

6.9 Additional mitigation requirements to reduce risk of prevention of status objectives

6.9.1 For the Bollin (River Dean to Ashley Mill) risks to future status from additional physical modifications (culverts), the proposed development of mitigation is as outlined in the section above.

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7 WFD Compliance

7.1 No deterioration of current status

- 7.1.1 The following scoped in AP2 amendments do not have the potential to introduce additional WFD deterioration risks to affected surface and groundwater bodies:
 - AP2-006-010: Watercourse diversions (Tributaries of Birkin Brook);
 - AP2-006-012: Realignment of Tributary of Birkin Brook 2;
 - AP2-006-018: Modification of mitigation for Timperley Brook;
 - AP2-007-005: Vent shaft modifications, Birchfield Road; and
 - AP2-007-009: Ardwick modifications.
- 7.1.2 The reconfiguration of M56 Junction 6 (AP2-006-014) amendment has potential to deteriorate the Bollin (River Dean to Ashley Mill) (GB112069061381) surface water body due to a large number of additional new culverts and potential to require hard engineering of watercourse realignments. As a result, a number of new scheme elements for reconfiguration of M56 Junction 6 (AP2-006-014) are considered to be potentially non-compliant due to the risk of deterioration of current status and will require further ongoing assessment.
- 7.1.3 The reconfiguration of M56 Junction 6 (AP2-006-014) amendment will also lead to the removal of the amber risk of deterioration to Timperley Brook (GB112069061260), reported in the SES2 (Part 1 of this report) due to changes in the highway drainage mitigation.
- 7.1.4 The modification of mitigation for Timperley Brook (AP2-006-018) amendment will also lead to the removal of the amber risk of deterioration to Timperley Brook (GB112069061260), reported in the SES2 (Part 1 of this report) due to loss of open channel and the implications of hydromorphology.

7.2 No prevention of future status objectives

- 7.2.1 The assessment has screened the AP2 revised scheme against the RNAG for all relevant water bodies.
- 7.2.2 The identified risk to future status objectives arising from the AP2 revised scheme is reconfiguration of M56 Junction 6 (AP2-006-014). This has potential to exacerbate physical modification pressures identified by the Environment Agency that are currently restricting the Bollin (River Dean to Ashley Mill) (GB112069061381) surface water body from achieving its status objectives.
- 7.2.3 As a result, the reconfiguration of M56 Junction 6 (AP2-006-014) is considered to be potentially non-compliant due to the risk of preventing future status objectives and will require further ongoing assessment.

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8 Conclusion

- 8.1.1 This WFD assessment addendum provides an indication of the likely compliance of the SES2 scheme and AP2 revised scheme at the time the assessment was prepared.
- 8.1.2 The assessment has concluded that the AP2 revised scheme may cause a new risk of deterioration of the current WFD status of one surface water body.
- 8.1.3 The new WFD compliance risk arises from reconfiguration of M56 Junction 6 (AP2-006-014) amendment. There is a risk of deterioration in biological and hydromorphological quality elements of the Bollin (River Dean to Ashley Mill) surface water body due to a widespread adverse effect from additional culverts included in the AP2 revised scheme.
- 8.1.4 There is also a risk of preventing future status objectives for the Bollin (River Dean to Ashley Mill) surface water body from the addition of further physical modifications exacerbating existing RNAG within the water body.
- 8.1.5 The reconfiguration of M56 Junction 6 (AP2-006-014) amendment is therefore potentially non-compliant with WFD objectives and will require further assessment and development of mitigation.
- 8.1.6 The updated assessments of water quality WFD compliance risks from highway drainage removed one previously identified amber risk of deterioration for the Wade Brook water body, reported in the main ES and one amber risk of deterioration for Tributary of Timperley Brook 1 (part of Timperley Brook water body), reported in the SES2 section of this report.
- 8.1.7 The modification of mitigation for Timperley Brook (AP2-006-018) amendment will lead to the removal of the amber risk of deterioration to Timperley Brook (GB112069061260), reported in the SES2 (Part 1 of this report) due to loss of open channel and the implications of hydromorphology.
- 8.1.8 The remaining water body scale risk (both for deterioration and preventing future status objectives) identified in the AP2 revised scheme is Bollin (River Dean to Ashley Mill): amber risk due to multiple culverts
- 8.1.9 A Regulation 19⁷ test may be required for the AP2 revised scheme. This would include the new modifications to the physical characteristics of the Bollin (River Dean to Ashley Mill) that have been identified in this assessment.

⁷ Regulation 19 of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 provides a means whereby a derogation for a proposed modification or sustainable development may be granted where it meets specific conditions. Full details are provided in Section 7 of the SMR WFD compliance assessment procedure technical note Volume 5, Appendix: CT-001-00001 of the main ES.

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Annex A: Revised detailed impact assessment tables

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	068055280) detailed impact assessmen	t - effects on current sta	itus															
Wistaston Brook (GB112068055280)									tailed Impact Asses							Detailed Impact Assessment Outcom	e	
Water body type:	River			e (receptor value):		ary of Swill Brook 1 (N			ry of Gresty Brook 1			Gresty Brook (High		_				
Hydromorphological designation:	Not A/HMWB			onent (Unique ID):		nel (GB11206805528			nnel (GB11206805528			el (GB112068055280		Cumulative effects - effects on				
Overall Status (2015):	Bad			heme component:	A 6.2km long x 8.8	8m internal diameter l	bored tunnel up to a	A 6.2km long x 8.	8m internal diameter	bored tunnel up to a	A 6.2km long x 8.	m internal diameter t	bored tunnel up to a	quality element from scheme	Overall effect on quality element at	a data set a transfer a set a set a set a	Residual effect on quality element	WFD compliance outcome - potenti
Overall Status Objective:	Good by 2027 Bad		Impact type from sc	neme component:										component(s) located in other WFD		Additional mitigation requirements	at water body scale	for deterioration of current status
Overall Status (2019)	Bad	DRAID Could Broad	pour curle a current	_	Impacts from	bored tunnel are s	coped out of detail	ed impact assessme	ent at Preliminary A	ssessment stage, un	less flagged as a ris	k in Groundwater V	VFD assessment	water bodies				quality element at water body sca
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	2019 Status														
	Fish	Bad	Good by 2027	Bad	-	-		-	-	-	-	-		None	Element is insensitive to impact. No measurable change to quality element.	. N/A	N/A	Compliant - no deterioration in quali element status anticipated
Biological	Macroinvertebrates	Good	Good by 2015	Good	-	-				-	-			None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
	Macrophytes and Phytobenthos - combined	Poor	Good by 2027	Moderate		-	-	-			-		-	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
	Dissolved oxygen	Moderate	Good by 2015	Moderate		-					-			None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quali element status anticipated
	рН	High	Good by 2015	High							-			None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
Physicochemical	Phosphate	Poor	Good by 2027	Poor	-	-	-	-		-	-	-	-	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
	Ammonia	High	Good by 2015	High							-			None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
	Temperature	High	Good by 2016	High	-									None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quali element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	N/A (high)	N/A		-									None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quali element status anticipated
	Quantity and dynamics of water flow				-	-				-	-	-		None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
	Connection to groundwater bodies				-	-	-	-					-	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
	River continuity	1			-	-	-	-			-	-	-	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
Hydromorphological	River depth and width variation	Supports Good	Supports Good by 2015	Supports Good										None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
	Structure and substrate of the river	1											-	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
	Structure of the riparian zone	1			-		-	-					-	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
Chemical	Priority substances	Good	Good by 2015	Fail						-				None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in qualit

Valley Brook (Englesea Brook to Weave	rook to Weaver) (GB112068055310) deta	and ampace assessment	it - enects on current sta			Detailed Impact Assessment				Detailed Impact Assessment Outcome		
Water body type:	River	1	Wat	ercourse (receptor value)		Valley Brook (High)				Detailed impact Assessment Outcome		
Hydromorphological designation:	HMWB			e component (Unique ID)	Cr	ewe Tunnel (GB112068055310-MW-01-B1	T-01)	1				
Overall Status (2015):	Moderate			on of scheme component		I diameter bored tunnel up to a max. depth		Cumulative effects - effects on				WFD compliance outcome - potentia
Overall Status Objective:	Good by 2027			from scheme component	A 0.2km long x 8.6m interne	i dumeter bored tanner op to a max. depti	oj 42.711 below ground level.	quality element from scheme	Overall effect on quality element at	Additional mitigation requirements	Residual effect on quality element at	for deterioration of current status o
Overall Status (2019):	Moderate		inipact type	from scheme component.	Impacts from bored tunnel are score	d out of detailed impact assessment at	Broliminary Assossment stage unloss	component(s) located in other WFD	water body scale	Automatimitigation requirements	water body scale	quality element at water body scale
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	2019 Status		ed as a risk in Groundwater WFD asses		water bodies				
	Fish	Bad	Good by 2027	Bad	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	Bad	Good by 2027	Moderate	-			None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	N/A	N/A in 2015		-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	High	Good by 2015	High	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	рН	High	Good by 2015	High	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
Physicochemical	Phosphate	Poor	Good by 2027	Poor	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Ammonia	Good	Good by 2015	Good	-		-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by 2015	High	-			None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	N/A (high)	N/A in 2015	-	-		-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Quantity and dynamics of water flow				-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies]			-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
nyaromorphologicar	River depth and width variation	Supports Good	Supports Good by 2015	Supports GOOD	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bed]			-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone				-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
Chemical	Priority substances	Good	Good by 2015	Fail	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated

Table A.3: Weawer (Marbury B Veaver (Marbury Brook to Dane)	rook to Dane) (GB112068060460) detai (GB118053050450)	ed impact assessment - effects o	n current status								Detailed Imp	act Assessment									Detailed Impact Assessment Outco	ne	
Vater body type: Informershelpsical designation	River Not A/HMWR		Watercourse (receptor value): Scheme component (Unique ID):		Pa	rk Hall Culvert (GB112058060460-T-01-CV	x.01)	Arrass tra	ick culvert (un-named) (GB11206806046	0.1.01.274.01)	Tributary of River	Neaver 2 (Moderate)	4530 Nantwir	h Road Offline East Culvert GB11206806	0450.7.01.078.01	4590 Nantwirt	Road Offline West Culvert GB112068060	0460.1.01.014.02					
verall Status (2015):	Poor		Description of scheme component:			 extension or rebuild of an existing culw 			hart culvert for access track to attenuation			vent (GB112068060460-T-01-RE-01) two culverts (A530 Nantwich Road Offline ealignment, Apprax, length of realignment		er A530 Nantwich Road overbridge, appro			r A530 Nantwich Road overbridge, apprax		Cumulative effects - effects on				WFD compliance outcome -
Overall Status Objective:	Good by 2027		impact type from scheme component:		-		Changes to water body			Changes to water body	260m inch	fing culverts. Changes to water body		1	Changes to water body			Changes to water body	quality element from scheme component(s) located in other WFD	Overall effect on quality element a water body scale	at Additional mitigation requirement	s Residual effect on quality elements at water body scale	ent potential for deterioration of current status of quality element
Overall Status (2019): VFD Status Element	Poor WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	2019 Status	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	Shading	changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Fostprint	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstrear	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	water bodies				water body scale
	Fish	Poor	Good by 2027	Poor	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additional miligation not required.	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional	mitigation. However, no deterioratio	d Negligble effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Addition mitigation not required.	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	Negligible effect anticipated when balanced against embedded milipption. No mascurable change in quality element anticipated. Additional milipation not required.	when balanced against embedded mitigation. However, no deterioration	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Negligble effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipatee when scheme component effects considered in combination. However no deterioration in status of quality element articipated at water body scale. Additional mitigation not required.	6 7 9 N/a	N/A	Compliant - no deterioration in qua element status anticipated
liological	Macroinvertebrates	Poor	Good by 2027	Poor	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated	Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitgation not required.	Negligible effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additional mitigation not required.	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional	Localised adverse effect anticipated when balanced against embedded mitiggation. However, no deterioratio in status of quality element anticipate at the ware body scale. Additional mitigation not required.	d Negligble effect anticipated when balanced against embedded mitigation. No massurable change in quality element anticipated. Addition, mitigation not required.	Localised beneficial effect anticipated However, no increase in quality al element status anticipated at the wate body scale.	Negligible effect anticipated when balanced against embedded mitigation. No massurable change in quality element anticipated. Additional mitigation not required.	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated	Localised adverse effect anticipated when balanced against embedded mitggation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitiggation not required.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated	Localised adverse effect anticipated when balanced against embedded mitigation. However, no detarioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No massurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. Howeve no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	e N/A	N/A	Compliant - no deserioration in qua element status anticipated
	Macrophytes and Phytobenthos - combined	Poor	Good by 2027	Poor	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratio is status of quality element anticipat at the water body scale. Additional mitigation not required.	d Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Addition mitigation not required.	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated	Localised adverse effect anticipated when balanced against embedded mitiggation. However, no detenioration in status: of quality element anticipate at the water body scale. Additional mitigation not required.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	in status of quality element anticipated	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. Howeve no deterioration in status of quality element anticipated at water body scale. Additional mitigation not regulared.	N/A	N/A	Compliant - no deterioration in qua element status anticipated
	Dissolved oxygen	High	Good by 2015	Good	Impacts on element screened out at preliminary assessment stage.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change is quality element anticipated. Addition mitigation not required.	balanced against embedded	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in al quality element anticipated. Additiona mitigation not required.	Negligible effect articipated when balanced against embedded mitigation. No mascurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additiona miligation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in al quality element anticipated. Additiona mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in I quality element anticipated. Additional mitigation not required.	None	Localized adverse effect anticipates when scheme component effects considered in combination. Howeve no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	r N/A	N/A	Compliant - no deterioration in qua element status anticipated
	рн	High	Good by 2015	High			Element is insensitive to impact. No measurable change to quality element.				Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element		Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element	N/A	N/A	Compliant - no deterioration in qua element status anticipated
hysicochemical	Phosphate	Poor	Good by 2027	Poor	Impacts on element screened out at	Element is insensitive to impact. No	Element is insensitive to impact. No measurable change to quality element.	impacts on element screened out at	Bement is insensitive to impact. No	 Bement is insensitive to impact. No 		Bement is insensitive to impact. No	Impacts on element screened out at	Element is insensitive to impact. No	Element is insensitive to impact. No t. measurable change to quality element	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Bement is insensitive to impact. No . . measurable change to quality element.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation no required.	ne N/A	N/A	Compliant - no deterioration in qua element status anticipated
	Ammonia	Good	Good by 2015	Moderate	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.		Bement is insensitive to impact. No measurable change to quality elemen		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.		Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality elemen	Element is insensitive to impact. No t. measurable change to quality element	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality elemen anticipated. Additional mitigation no required.	ne N/A R	N/A	Compliant - no deterioration in qua element status anticipated
	Temperature	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change i quality element anticipated. Addition mitigation not required.	Bernent is insensitive to impact. No measurable change to quality elemen	Bement is insensitive to impact. No r. measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additiona mitigation not required.	Element is insensitive to impact. No measurable change to quality element	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality eleme anticipated. Additional mitigation no required.	ne N/A	N/A.	Compliant - no deterioration in qua element status anticipated
pecific Pollutants	Copper, Triclosan, Zinc	N/A (high)	N/A		Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary accessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out a preliminary assessment stage.		t Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	r N/A	N/A	Compliant - no deterioration in qua element status anticipated
	Quantity and dynamics of water flow				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no detarioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out a preliminary assessment stage.		Bement is insensitive to impact. No measurable change to quality element	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligble effect anticipated when balanced against embadded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded miligation. However, no deterioration in status of quality element anticipated at the water body scale. Additional miligation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. Howeve no deterioration in status of quality element anticipated at the water boo scale. Additional mitigation not reoxired.	r, N/A by	N/A.	Compliant - no deterioration in qua element status anticipated
	Connection to groundwater bodies				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.		Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration is status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out a preliminary assessment stage.	t Element is insensitive to impact. No measurable change to quality elemen	Bement is insensitive to impact. No c. measurable change to quality element	Bemerit is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no daterioration in status of quality element anticipate at the water body scale. Additional mitigation nat required.		Element is insensitive to impact. No measurable change to quality element	Localised adverse effect anticipated when balanced against embedded mitigazion. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigazion not required.	Impacts on element screened out at preliminary assessment stage.	Bement is insensitive to impact. No measurable change to quality element.	None	Localized adverse effect anticipates when scheme component effects considered in combination. Howeve no deterioration in status of quality element anticipated at the water boo scale. Additional mitigation not reoxized.	r. Nia Nia	NA	Compliant - no deterioration in qua element status anticipated
Judanmanhalantral	River continuity	Supports Good	Supports Good by 2015	Supports Good	Localised adverse effect anticipated when balanced against embedded mitggation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out a preliminary assessment stage.	t Element is insensitive to impact. No measurable change to quality elemen	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localized adverse effect anticipates when scheme component effects considered in combination. Howeve no deterioration in status of quality element anticipated at the water boo scale. Additional mitigation not required.	r, N/A by	N/A	Compliant - no deterioration in qua element status anticipated
,	River depth and width variation	adponsi onoo		aqqqore ooo	Localised adverse effect anticipated when balanced against embedded mitigation. However, no detarioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary accessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No meascuable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out a preliminary assessment stage.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change is quality element anticipated. Addition mitigation not required.	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	Negligible effect anticipated when balanced against embedded mitigation. No maacurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary accessment stage.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipatee at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localized adverse effect anticipate when scheme component effects considered in combination. Howeve no deterioration in status: of quality element anticipated at the water boo scale. Additional mitigation not required.	r, NA by	N/A	Compliant - no deterioration in qua element status anticipated
	Structure and substrate of the river bed				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out a preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additions mitigation not required.	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	Negligble effect articipated when balanced against embedded mitigation. No maacurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded miligation. However, no destribution in status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded miligation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipates when scheme component effects considered in combination. Howeve no deterioration in status of quality element anticipated at the water boo scale. Additional mitigation not required.	r, NAA by	N/A	Compliant - no deterioration in qua element status anticipated
	Structure of the riparian zone				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration is status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out a preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element	Bement is insensitive to impact. No c. measurable change to quality element	Bemerit is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	None	Localized adverse effect anticipates when scheme component effects considered in combination. Howeve no deterioration in status of quality element anticipated at the water boo scale. Additional mitigation not required.	r, N/A by	N/A	Compliant - no deterioration in qua element status anticipated
hemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment state.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out a preliminary assessment state.	 Impacts on element screened out at preliminary assessment state. 	 Impacts on element screened out at preliminary assessment stage. 	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment state.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out a preliminary assessment state.	t N/A	N/A	Compliant - no deterioration in qua element status anticipated

	Market Drayton to Ellesmere Port (GB71210133) detailed impact a	assessment - effects on cu	irrent status										
Shropshire Union Canal, Market Drayto Water body type:	Canal		Wat	ercourse (receptor value):			act Assessment n Canal (Very high)			1	Detailed Impact Assessment Outcom	e	
Water body type: Hydromorphological designation:	Artificial			e component (Unique ID):	Shropshire Union Canal Offline	Shropshire Union Canal Viaduct No.2 (GB71210133-MW-01-VD-01)	Shropshire Union Canal Viaduct No.1 (GB71210133-MW-01-VD-02)	Shropshire Union Canal Viaduct No.3 (GB71210133-MW-01-VD-03)	Cumulative effects - effects on				
Overall Status (2015):	Moderate		Descripti	on of scheme component:	Clear Span Bridge approx. 126m long, 20m wide	An 8.0m wide x 84.5m long RC box girder viaduct, approx 7m max height.	An 8.0m wide x 84.5m long RC box girder viaduct, approx 7m max height.	A 14.0m wide x 84.5m long RC box girder viaduct, up to 7.6m in height above existing ground level.	quality element from scheme component(s) located in other WFD water bodies	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element at water body scale	WFD compliance outcome - potentia for deterioration of current status o quality element at water body scale
Overall Status Objective:	Good by 2021		Impact type	from scheme component:					water boules				
Overall Status (2019):	Moderate	RBMP Cycle 2 2015	RBMP Cycle 2 Status		Shading	Shading	Shading	Shading					
WFD Status Element	WFD Quality Element	Status	Objective	2019 Status									
	Fish	N/A	N/A	N/A	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considerec in combination. No measurable change in quality element anticipated. Additional mitigation not required.	a N/A	N/A	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	N/A	N/A	N/A	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	a N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	N/A	N/A	N/A	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considerec in combination. No measurable change in quality element anticipated. Additional mitigation not required.	a e N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	High	Good by 2015	N/A	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considerec in combination. No measurable change in quality element anticipated. Additional mitigation not required.	a e N/A	N/A	Compliant - no deterioration in quality element status anticipated
	рН	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Physicochemical	Biological dissolved oxygen demand (BOD)	High	Good by 2015	N/A	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Ammonia	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element	. N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considerec in combination. No measurable change in quality element anticipated. Additional mitigation not required.	i e N/A	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Quantity and dynamics of water flow				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	River continuity				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River depth and width variation	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.			None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bed				Impacts on element screened out at	Impacts on element screened out at		Impacts on element screened out at	None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality
					preliminary assessment stage. Impacts on element screened out at	preliminary assessment stage. Impacts on element screened out at	preliminary assessment stage. Impacts on element screened out at	preliminary assessment stage. Impacts on element screened out at		preliminary assessment stage. Impacts on element screened out at			element status anticipated Compliant - no deterioration in quality
	Structure of the riparian zone				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	None	preliminary assessment stage.	N/A	N/A	element status anticipated
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated

Date (Wheelock to Weaver) (G5112068060470) Water body type: Not A/HMWB Hydromorphological designation: Not A/HMWB Overall Status (2015): Bad Overall Status (2019): Moderate WFD Status Element WFD Quality Element RBMP Cycle 2 2015 Status RBMP Cycle 2 2015 Status Biological Macroinvertebrates Bad Good Good by 2 Macroinvertebrates Bad Good by 2 Biological Macroinvertebrates Bad Good by 2 Biological Macroinvertebrates Bad Good by 2 Physicochemical Phesphate High Good by 2	ict type from scheme componer atus Status 2019 5 Moderate 7 Good 015 Moderate 5 High 5 High	D): River Dane Viaduct (GB11 ht: A 14.0m wide x 1.13km RC box girder viad	e (Very high) 2068066470-MW-01-VD-01) act comprising 26 spons up to a max. height Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Megligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Impacts on element screened out at preliminary assessment stage. Impacts on element screened out at	Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies None None None None	Overall effect on quality element at water body scale	N/A N/A N/A	Residual effect on quality element at	WFD compliance outcome - potential for deterioration of current status of quality element at water body scale Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated
Overall Status (2015): Bad Im Overall Status Objective: Moderate by 2027 Im Overall Status (2019): Moderate Im WFD Status Element WFD Quality Element RBMP Cycle 2 2015 Status RBMP Cycle 2 2015 Status Biological Macroinvertebrates Bad Good by 2 Macroinvertebrates Bad Good by 2 Macroinvertebrates Bad Good by 2 Dissolved oxygen High Good by 2 Physicochemical Phosphate Poor Poor by 2	escription of scheme component ct type from scheme component atus Status 2019 5 Moderate 7 Good 015 Moderate 5 High 5 High	A 14.0m wide x 1.13km RC box girder viad Lt A 14.0m wide x 1.13km RC box girder viad Shading Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Element is insensitive to impact. No measurable change to quality element. Element is insensitive to impact. No	In the second se	element from scheme component(s) located in other WFD water bodies None None None	water body scale Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Megligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated.	N/A N/A N/A N/A	water body scale N/A N/A N/A	for deterioration of current status of quality element at water body scale Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated
Diverail Status Objective: Moderate by 2027 Int Overail Status (2019): Moderate RBMP Cycle 2 2015 Status RBMP Cycle 2 00bjectiv WFD Status Element WFD Quality Element RBMP Cycle 2 2015 Status Good Good by 2 Biological Fish Good Good by 2 Moderate by 2027 Biological Macroinvertebrates Bad Good by 2 Macrophytes and Phytobenthos - combined Moderate by 2 Moderate by 2 Dissolved oxygen High Good by 2 Physicochemical Phosphate Poor Poor by 2	ict type from scheme componer atus Status 2019 5 Moderate 7 Good 015 Moderate 5 High 5 High	ntt Shading Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Element is insensitive to impact. No measurable change to quality element. Element is insensitive to impact. No	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Impacts on element screened out at preliminary assessment stage.	element from scheme component(s) located in other WFD water bodies None None None	water body scale Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Megligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated.	N/A N/A N/A N/A	water body scale N/A N/A N/A	for deterioration of current status of quality element at water body scale Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated
WFD Status Element WFD Quality Element RBMP Cycle 2 2015 Status RBMP Cycle 2 Objective Biological Fish Good Good by 2 Biological Macroinvertebrates Bad Good by 2 Macrophytes and Phytobenthos - combined Moderate Moderate by Dissolved oxygen High Good by 2 PHysicochemical Phosphate Poor Poor by 2	5 Moderate 7 Good 215 Moderate 5 High 5 High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Element is insensitive to impact. No measurable change to quality element. Element is insensitive to impact. No	hydromorphology leading to changes in river processes and habitats upstream and downstream Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Impacts on element screened out at preliminary assessment stage. Impacts on element screened out at preliminary assessment stage.	located in other WFD water bodies None None None None None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A N/A N/A N/A	N/A N/A N/A	quality element at water body scale Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated
Biological Macroinvertebrates Bad Good by 2 Macrophytes and Phytobenthos - combined Moderate Moderate by Dissolved oxygen High Good by 2 pH High Good by 2 Physicochemical Phosphate Poor	7 Good D15 Moderate 5 High 5 High	balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Element is insensitive to impact. No measurable change to quality element. Element is insensitive to impact. No	balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Impacts on element screened out at preliminary assessment stage.	None	scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A N/A N/A N/A	N/A N/A	element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality
Macrophytes and Phytobenthos - combined Moderate Moderate by Dissolved oxygen High Good by 2 pH High Good by 2 Physicochemical Phosphate Poor Poor by 2	D15 Moderate	balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Element is insensitive to impact. No measurable change to quality element. Element is insensitive to impact. No	balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Impacts on element screened out at preliminary assessment stage.	None	scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated in combination. No measurable change in quality element anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated.	N/A N/A N/A	N/A N/A	element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality
combined Moderate Moderate by Dissolved oxygen High Good by 2 pH High Good by 2 Physicochemical Phosphate Poor	5 High	balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Element is insensitive to impact. No measurable change to quality element. Element is insensitive to impact. No	balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Impacts on element screened out at preliminary assessment stage. Impacts on element screened out at preliminary assessment stage.	None	scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated.	N/A N/A	N/A	element status anticipated Compliant - no deterioration in quality element status anticipated Compliant - no deterioration in quality
pH High Good by 2 Physicochemical Phosphate Poor Poor by 2	5 High	balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required. Element is insensitive to impact. No measurable change to quality element. Element is insensitive to impact. No	preliminary assessment stage. Impacts on element screened out at preliminary assessment stage.		scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required. Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated.	N/A		element status anticipated
Physicochemical Phosphate Poor Poor by 2		measurable change to quality element.	preliminary assessment stage.	None	scheme component effects considered in combination. No measurable change in quality element anticipated.		N/A	
	5 Poor		Impacts on plament scropped out at					element status anticipated
Ammonia High Good by 2			preliminary assessment stage.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	5 High	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Temperature High Good by 2	5 High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants Copper, Triclosan, Zinc High High by 2	5 High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Quantity and dynamics of water flow		Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.		N/A	Compliant - no deterioration in quality element status anticipated
Connection to groundwater bodies		Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
River continuity		Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological River depth and width variation Supports Good Supports Good	2015 Supports Good	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.		N/A	Compliant - no deterioration in quality element status anticipated
Structure and substrate of the river bed		Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Structure of the riparian zone		Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	t N/A	N/A	Compliant - no deterioration in quality element status anticipated
Chemical Priority substances Good Good by 2	5 Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated

Table A.6: Trent and Mersey Canal, summit Trent and Mersey Canal, summit to Preston Br	rook Tunnel (GB71210247)	1210247) decalled lilipa	ct assessment - enects	on current status		Detailed Impact Assessment				Detailed Impact Assessment Outcome		
Water body type:	Canal		Waterc	ourse (receptor value):		Trent and Mersey Canal (Very High)				Betailed impact Assessment Outcome		
Hydromorphological designation:	Artificial			omponent (Unique ID):	River Dane Viaduct	Puddinglake Brook Viaduct	Trent and Mersey Canal Viaduct	1				
					(GB71210247-MW-01-VD-01) A 14.0m wide x 1.13km RC box girder	(GB71210247-MW-01-VD-02) A 14.0m wide x 160m long RC box girder	(GB71210247-MW-01-VD-03) An approx 14.0m wide x 283m long RC	-				
						viaduct comprising 4 x 40.0m spans up to		Cumulative effects - effects on				WED compliance outcome instantial
Overall Status (2015):	Moderate		Description	of scheme component:	height of 28.9m.	a max. Height of approx 10m	span,2x28.0 span,2x27.3m span and	quality element from scheme	Overall effect on quality element at	Additional mitigation requirements	Residual effect on quality element at	WFD compliance outcome - potential for deterioration of current status of
							1x39 span up to a max. height of approx 12.6m.	component(s) located in other WFD water bodies	water body scale		water body scale	quality element at water body scale
Overall Status Objective:	Moderate by 2015		Impact type fro	m scheme component:			12.011.	water boules				
Overall Status (2019):	Moderate				Shading	Shading	Shading					
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status	2019 Status	Sindanig	Sincering	Sindanig					
		Status	Objective									
					Negligible effect anticipated when balanced against embedded mitigation.	Negligible effect anticipated when balanced against embedded mitigation.	Negligible effect anticipated when balanced against embedded mitigation.		Negligible effect anticipated when scheme component effects considered			
	Fish	N/A	N/A	N/A	No measurable change in quality	No measurable change in quality	No measurable change in quality	None	in combination. No measurable change	N/A	N/A	Compliant - no deterioration in quality
					element anticipated. Additional	element anticipated. Additional	element anticipated. Additional		in quality element anticipated.			element status anticipated
					mitigation not required.	mitigation not required.	mitigation not required.		Additional mitigation not required.			
					Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when			
						balanced against embedded mitigation.	balanced against embedded mitigation.		scheme component effects considered			Compliant - no deterioration in quality
Biological	Macroinvertebrates	N/A	N/A	N/A	No measurable change in quality	No measurable change in quality	No measurable change in quality	None	in combination. No measurable change	N/A	N/A	element status anticipated
					element anticipated. Additional mitigation not required.	element anticipated. Additional mitigation not required.	element anticipated. Additional mitigation not required.		in quality element anticipated.			
					mitigation not required.	miligation not required.	mitigation not required.		Additional mitigation not required.			
					Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when			
	Macrophytes and				balanced against embedded mitigation.	balanced against embedded mitigation.	balanced against embedded mitigation.		scheme component effects considered			Compliant - no deterioration in quality
	Phytobenthos - combined	N/A	N/A	N/A	No measurable change in quality	No measurable change in quality	No measurable change in quality	None	in combination. No measurable change	N/A	N/A	element status anticipated
	combined				element anticipated. Additional mitigation not required.	element anticipated. Additional mitigation not required.	element anticipated. Additional mitigation not required.		in quality element anticipated. Additional mitigation not required.			
					Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when			
	Dissolved oxygen	N/A	N/A	N/A	balanced against embedded mitigation.	balanced against embedded mitigation.	balanced against embedded mitigation.	None	scheme component effects considered	N/A	N/A	Compliant - no deterioration in quality
	Dissolved oxygen	N/A	NVA.	19/4	No measurable change in quality element anticipated. Additional	No measurable change in quality element anticipated. Additional	No measurable change in quality element anticipated. Additional	None	in combination. No measurable change in quality element anticipated.	N/A	170	element status anticipated
					mitigation not required.	mitigation not required.	mitigation not required.		Additional mitigation not required.			
						Element is in a site of the second No.	Element is incomplete to income Ma		Element is increasible to increase Ma			Compliant, an elaterianetica in suchts
	рН	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
					······································							
Physicochemical	Biological dissolved	N/A	N/A	N/A	Element is insensitive to impact. No	Element is insensitive to impact. No	Element is insensitive to impact. No	None	Element is insensitive to impact. No	N/A	N/A	Compliant - no deterioration in quality
	oxygen demand (BOD)				measurable change to quality element.	measurable change to quality element.	measurable change to quality element.		measurable change to quality element.			element status anticipated
		N/A	N/A	N/A	Element is insensitive to impact. No	Element is insensitive to impact. No	Element is insensitive to impact. No		Element is insensitive to impact. No			Compliant - no deterioration in quality
	Ammonia	IN/A	N/A	N/A	measurable change to quality element.	measurable change to quality element.	measurable change to quality element.	None	measurable change to quality element.	N/A	N/A	element status anticipated
					Negligible offect anticipated when	Negligible offect anticipated when	Negligible offect anticipated when		Neglizible offect anticipated when			
					Negligible effect anticipated when balanced against embedded mitigation.	Negligible effect anticipated when balanced against embedded mitigation.	Negligible effect anticipated when balanced against embedded mitigation.		Negligible effect anticipated when scheme component effects considered			
	Temperature	N/A	N/A	N/A	No measurable change in quality	No measurable change in quality	No measurable change in quality	None	in combination. No measurable change	N/A	N/A	Compliant - no deterioration in quality
					element anticipated. Additional	element anticipated. Additional	element anticipated. Additional		in quality element anticipated.			element status anticipated
					mitigation not required.	mitigation not required.	mitigation not required.		Additional mitigation not required.			
Specific pollutants	Copper, Triclosan, Zinc	N/A	N/A	N/A	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality
					preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.		preliminary assessment stage.			element status anticipated
	Quantity and dynamics				Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality
	of water flow				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.		preliminary assessment stage.			element status anticipated
	Connection to				Impacts on element screened out at	Impacts on element screened out at		None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality
	groundwater bodies				preliminary assessment stage. Impacts on element screened out at	preliminary assessment stage. Impacts on element screened out at	preliminary assessment stage. Impacts on element screened out at		preliminary assessment stage. Impacts on element screened out at			element status anticipated Compliant - no deterioration in quality
Hydromeynhological	River continuity	N/4	N/A	N/4	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	None	preliminary assessment stage.	N/A	N/A	element status anticipated
Hydromorphological	River depth and width	N/A	IN/A	N/A	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality
	variation				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.		preliminary assessment stage.	.475		element status anticipated
	Structure and substrate				Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality
	of the river bed				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.		preliminary assessment stage.	.475	1975	element status anticipated
	Structure of the riparian				Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality
	zone				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.		preliminary assessment stage.	.475		element status anticipated
Chemical	Priority substances	Fail	Fail by 2015	Fail	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality

Table A.7: Puddinglake Brook (GB112068060220) detailed impact assessme Puddinglake Brook (GB112068060220)	nt - effects on current status				Detailed Impa	ct Assessment			Detailed Impact Assessment Outcom	e	
Water body type:	River		atercourse (receptor value)			Brook (High)					
Hydromorphological designation:	Not A/HMWB	Sch	eme component (Unique II	D):	Puddinglake Brook Viaduct (GB112068060220-MW-01-VD-01)	Puddinglake Brook Overbridge (GB112068060220-MW-01-OB-01)					
Overall Status (2015):	Poor	Desci	ription of scheme compone	ent:	A 14.0m wide x 160m long RC box girder viaduct comprising 4 x 40.0m spans up to a max. Height of approx 10m.	Whatcroft Hall Lane temporary road realignment	Cumulative effects - effects on quality element from scheme component(s) located in other WFD	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element at water body scale	WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
Overall Status Objective:	Good by 2027	Impact	type from scheme compo	nent:			water bodies				·····
Overall Status (2019): WFD Status Element	Poor WFD Quality Element	RBMP Cycle 2 2015	RBMP Cycle 2 Status	2019 Status	Shading	Shading					
	Fish	Status N/A	Objective N/A	N/A	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	, N/A	Localised adverse effect anticipated when additional mitigation applied. No deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	Moderate	Good by 2027	Moderate	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	Localised adverse effect anticipated when additional mitigation applied. No deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	Poor	Good by 2027	Poor	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However on deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	Localised adverse effect anticipated when additional mitigation applied. No deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	High	Good by 2015	Poor	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	NA	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	Compliant - no deterioration in quality element status anticipated
Rhusisshawiad	рН	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Physicochemical	Phosphate	Poor	Good by 2027	Poor	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Ammonia	Moderate	Good by 2021	Poor	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Quantity and dynamics of water flow				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	River depth and width variation				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bed				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated

0370)								Detai	led Impact Assessment							Detailed Impact Assessment Outcome		
	River		Wate	ercourse (receptor value):	Gad Brook (Moderate)	Tributary of Gad Brook 3 (Moderate)		0.00		Wade Brook (High)								
gnation:	Not A/HMWB		Schem	e component (Unique ID):	Gad Brook Viaduct (GB112068060370-T-	Gad Brook Viaduct (GB112068060370-T-	Wade Brook Viaduct (GB112068060370-	Extension	of existing culvert (GB112068060370-MW	-04-CVX-01)	ASS6 Shurlach Road Realignment - Highway Drainage		ok Overbridge	+				
, and a second					01-VD-01)	02-VD-02)	MW-04-VD-03)				Outfall (GB112068060370-MW-04-HD-01)	(GB112068060	370-MW-04-OB-01)	+				
					A 14.0m wide x 980.0m RC box girder	A 14.0m wide x 980.0m RC box girder	A 14.0m wide x 285.0m long RC box girder		d and crosses watercourse. No culvert in de		Road drainage outfalls from ASS6 Shurlach Road Realignment, Drains to Wade Brook, Failed HEWRAT		ad over Wade Brook, approximately 105.0m	Cumulative effects - effects on quality element from scheme	Overall effect on quality element at		Residual effect on quality element a	WFD compliance outcome - pot
	Poor		Descriptio	on of scheme component:	viaduct comprising 28 x 35.0m spans up to a max. height of 17.6m.	viaduct comprising 28 x 35.0m spans up to a max. height of 17.6m.	viaduct comprising 2 x 30.0m spans, 4 x 35.0m spans, 50.0m and 35.0m span up		tionary basis this will require extension of e		assessment due to existing high background concentrations above EQS in the watercourse, but passed further metal		iength.	component(s) located in other WFD	water body scale	Additional mitigation requirements	water body scale	for deterioration of current stat quality element at water body
					to a max might of 17.0m.	to a max magne of mont.	to a max. height of 17.5m.				bioavailability assessment			water bodies				
	Good by 2027		Impact type f	from scheme component:						Changes to water body	Drainage (changes in water quantity or quality due to		Changes to water body	1				
	WFD Quality Element	RBMP Cycle 2 2015	RBMP Cycle 2 Status	2019 Status	Shading	Shading	Shading	Footprint	Shading	hydromorphology leading to change in river processes and habitats	⁵ discharge of surface water runoff to surface water body);	Shading	hydromorphology leading to change in river processes and habitats					
	mo quality clement	Status	Objective	2010 50005						upstream and downstream			upstream and downstream					
					Negligible effect anticipated when balanced against embedded mitigation.	Negligible effect anticipated when balanced against embedded mitigation.	Negligible effect anticipated when balanced against embedded mitigation.	Localised adverse effect anticipated when balanced against embedded	Localised adverse effect anticipated when balanced against embedded	Negligible effect anticipated when balanced against embedded mitigation	Localised adverse effect anticipated when balanced	Localised adverse effect anticipated when balanced against embedded	Negligible effect anticipated when balanced against embedded mitigation.		Localised adverse effect anticipated when scheme component effects		Localised adverse effect anticipated	
	Fish	N/A	N/A	N/A	No measurable change in quality	No measurable change in quality	No measurable change in quality	mitigation. However, no deterioration in status of quality element anticipated at	mitigation. However, no deterioration in status of quality element anticipated at	No measurable change in quality	^L against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body	mitigation. However, no deterioration i status of quality element anticipated a	No measurable change in quality	None	considered in combination. However no deterioration in status of quality	N/A	when additional mitigation applied. No deterioration in status of quality	Compliant - no deterioration in que element status anticipated
					element anticipated. Additional mitigation not required.	element anticipated. Additional mitigation not required.	element anticipated. Additional mitigation not required.	the water body scale. Additional	the water body scale. Additional	element anticipated. Additional mitigation not required.	scale. Additional mitigation not required.	the water body scale. Additional	element anticipated. Additional mitigation not required.		element anticipated at water body scale.		element anticipated at water body scale	
								mitigation not required.	mitigation not required.			mitigation not required.			Additional mitigation not required.			
					Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when	Localised adverse effect anticipated when balanced against embedded	Localised adverse effect anticipated when balanced against embedded	Negligible effect anticipated when balanced against embedded mitigation	Localised adverse effect anticipated when balanced	Localised adverse effect anticipated when balanced against embedded	Negligible effect anticipated when		Localised adverse effect anticipated when scheme component effects		Localised adverse effect anticipated	
	Macroinvertebrates	Poor	Good by 2027	Moderate	balanced against embedded mitigation. No measurable change in quality	balanced against embedded mitigation. No measurable change in quality	balanced against embedded mitigation. No measurable change in quality	mitigation. However, no deterioration in status of quality element anticipated at	mitigation. However, no deterioration in status of quality element anticipated at	No measurable change in quality	against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body		balanced against embedded mitigation. No measurable change in quality	None	considered in combination. However no deterioration in status of quality	N/A	when additional mitigation applied. No deterioration in status of quality	Compliant - no deterioration in q element status anticipated
					element anticipated. Additional mitigation not required.	element anticipated. Additional mitigation not required.	element anticipated. Additional mitigation not required.	the water body scale. Additional mitigation not required.	the water body scale. Additional mitigation not required.	element anticipated. Additional mitigation not required.	scale. Additional mitigation not required.	the water body scale. Additional mitigation not required.	element anticipated. Additional mitigation not required.		element anticipated at water body scale.		element anticipated at water body scale	
															Additional mitigation not required.			
					Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when	Localised adverse effect anticipated when balanced against embedded	Localised adverse effect anticipated when balanced against embedded	Negligible effect anticipated when	Localised adverse effect anticipated when balanced	Localised adverse effect anticipated when balanced against embedded	Negligible effect anticipated when		Localised adverse effect anticipated when scheme component effects		Localised adverse effect anticipated	
	Macrophytes and Phytobenthos - combined	Poor	Good by 2027	Poor	balanced against embedded mitigation. No measurable change in quality	balanced against embedded mitigation. No measurable change in quality	balanced against embedded mitigation. No measurable change in quality	mitigation. However, no deterioration in status of quality element anticipated at	mitigation. However, no deterioration in status of quality element anticipated at	balanced against embedded mitigation No measurable change in quality	against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body	mitigation. However, no deterioration i	halanced against embedded mitigation. No measurable change in quality	None	considered in combination. However no deterioration in status of quality	N/A	when additional mitigation applied. No deterioration in status of quality	Compliant - no deterioration in que
	combined				element anticipated. Additional mitigation not required.	element anticipated. Additional mitigation not required.	element anticipated. Additional mitigation not required.	the water body scale. Additional	the water body scale. Additional	element anticipated. Additional mitigation not required.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	the water body scale. Additional	element anticipated. Additional mitigation not required.		element anticipated at water body scale.		element anticipated at water body scale	element status anticipated
					mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.		mitigation not required.	mitigation not required.		Additional mitigation not required.			
					Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when	Negligible effect anticipated when	lastical states effect esticisted share belanced	Negligible effect anticipated when			Localised adverse effect anticipated when scheme component effects		Localised adverse effect anticipated	
	Dissolved oxygen	High	Good by 2015	High	balanced against embedded mitigation. No measurable change in quality	balanced against embedded mitigation. No measurable change in quality	balanced against embedded mitigation. No measurable change in quality	Impacts on element screened out at	balanced against embedded mitigation. No measurable change in quality	balanced against embedded mitigation No measurable change in quality	against embedded mitigation. However, no deterioration	balanced against embedded mitigation No measurable change in quality	Impacts on element screened out at	None	considered in combination. However no	NA	when additional mitigation applied. No	Compliant - no deterioration in qu
	bisioned oxygen				element anticipated. Additional	element anticipated. Additional	element anticipated. Additional	preliminary assessment stage.	element anticipated. Additional	element anticipated. Additional	in status of quality element anticipated at the water body scale. Additional mitigation not required.	element anticipated. Additional	preliminary assessment stage.	- Hone	deterioration in status of quality element anticipated at water body scale.	19/5	deterioration in status of quality element anticipated at water body scale	element status anticipated
					mitigation not required.	mitigation not required.	mitigation not required.		mitigation not required.	mitigation not required.		mitigation not required.			Additional mitigation not required.			
	pH	High	Good by 2015	High	Element is insensitive to impact. No	Element is insensitive to impact. No		Impacts on element screened out at		Element is insensitive to impact. No	Element is insensitive to impact. No measurable change to	Element is insensitive to impact. No	Impacts on element screened out at	None	Element is insensitive to impact. No	N/A	N/A	Compliant - no deterioration in qu
	···	5		5		measurable change to quality element.		preliminary assessment stage.		measurable change to quality element	. quality element.	measurable change to quality element	. preliminary assessment stage.		measurable change to quality element.			element status anticipated
	Phosphate	Moderate	Good by 2027	Moderate		Element is insensitive to impact. No measurable change to quality element.		Impacts on element screened out at preliminary assessment stage.		Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.	 Element is insensitive to impact. No measurable change to quality element 		None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in que element status anticipated
					Element is insensitive to impact. No			Impacts on element screened out at		Element is insensitive to impact. No	Element is insensitive to impact. No measurable change to	Element is insensitive to impact. No			Element is insensitive to impact. No			Compliant - no deterioration in g
	Ammonia	Moderate	Good by 2027	Bad		measurable change to quality element.		preliminary assessment stage.		measurable change to quality element	ciement is insensitive to impact. No measurable change to quality element.	measurable change to quality element		None	measurable change to quality element.	N/A	N/A	element status anticipated
					Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when			Negligible effect anticipated when			Negligible effect anticipated when when			
	Temperature	High	Good by 2015	Good	balanced against embedded mitigation. No measurable change in quality	balanced against embedded mitigation. No measurable change in quality	balanced against embedded mitigation. No measurable change in quality	Impacts on element screened out at	balanced against embedded mitigation. No measurable change in quality	Element is insensitive to impact. No	Element is insensitive to impact. No measurable change to	balanced against embedded mitigation No measurable change in quality	Impacts on element screened out at	None	scheme component effects considered in combination. No measurable change	N/A	N/A	Compliant - no deterioration in qu
	remperature				element anticipated. Additional	element anticipated. Additional	element anticipated. Additional	preliminary assessment stage.	element anticipated. Additional	measurable change to quality element	. quality element.	element anticipated. Additional	preliminary assessment stage.	- Hone	in quality element anticipated.	19/5	1975	element status anticipated
					mitigation not required.	mitigation not required.	mitigation not required.		mitigation not required.			mitigation not required.			Additional mitigation not required.			
											Localised adverse effect anticipated when balanced				Localised adverse effect anticipated when scheme component effects		Localised adverse effect anticipated	
	Copper, Triclosan, Zinc	Moderate	High by 2027	Moderate	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	against embedded mitigation. However, no deterioration	Impacts on element screened out at	Impacts on element screened out at	None	considered in combination. However no	N/A	when additional mitigation applied. No	Compliant - no deterioration in qu
					preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	preliminary assessment stage.		element anticipated at water body scale.		deterioration in status of quality element anticipated at water body scale	element status anticipated
															Additional mitigation not required.			
								Localised adverse effect anticipated when balanced against embedded		Negligible effect anticipated when			Negligible effect anticipated when		Localised adverse effect anticipated when scheme component effects		Localised adverse effect anticipated	
	Quantity and dynamics of water				Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	mitigation. However, no deterioration in	Impacts on element screened out at	balanced against embedded mitigation No measurable change in quality	Impacts on element screened out at preliminary	Impacts on element screened out at	balanced against embedded mitigation. No measurable change in quality	None	considered in combination. However no	NA	when additional mitigation applied. No	Compliant - no deterioration in qu
	flow				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	status of quality element anticipated at the water body scale. Additional	preliminary assessment stage.	element anticipated. Additional	assessment stage.	preliminary assessment stage.	element anticipated. Additional		deterioration in status of quality element anticipated at water body scale.	19/3	deterioration in status of quality element anticipated at water body scale	element status anticipated
								mitigation not required.		mitigation not required.			mitigation not required.		Additional mitigation not required.			
								Localised adverse effect anticipated							Localised adverse effect anticipated			
	Connection to groundwater bodies				Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	when balanced against embedded mitigation. However, no deterioration in	Impacts on element screened out at	Element is insensitive to impact. No	Impacts on element screened out at preliminary	Impacts on element screened out at	Element is insensitive to impact. No	None	when scheme component effects considered in combination. However no	N/A	Localised adverse effect anticipated when additional mitigation applied. No	Compliant - no deterioration in qu
	Connection to groundwater bodies				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	status of quality element anticipated at the water body scale. Additional	preliminary assessment stage.	measurable change to quality element	assessment stage.	preliminary assessment stage.	measurable change to quality element.	None	deterioration in status of quality element anticipated at water body scale.	N/A	deterioration in status of quality element anticipated at water body scale	element status anticipated
								mitigation not required.							Additional mitigation not required.		cicinan unicipated at water body stat	
		1						Localised adverse effect anticipated		Negligible effect anticipated when					Localised adverse effect anticipated			
					Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	when balanced against embedded mitigation. However, no deterioration in	Impacts on element screened out at	balanced against embedded mitigation	Impacts on element screened out at preliminary	Impacts on element screened out at	Element is insensitive to impact. No		when scheme component effects considered in combination. However no		Localised adverse effect anticipated when additional mitigation applied. No	Compliant - no deterioration in ou
	River continuity				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	status of quality element anticipated at	preliminary assessment stage.	No measurable change in quality element anticipated. Additional	assessment stage.	preliminary assessment stage.	measurable change to quality element.	None	deterioration in status of quality	N/A	deterioration in status of quality	element status anticipated
								the water body scale. Additional mitigation not required.		mitigation not required.					element anticipated at water body scale. Additional mitigation not required.		element anticipated at water body scale	
		Supports Good	Supports Good by 2015	Supports Good				Localised adverse effect anticipated					Localised adverse effect anticipated		Localised adverse effect anticipated			
								when balanced against embedded		Negligible effect anticipated when balanced against embedded mitigation			when balanced against embedded		when scheme component effects		Localised adverse effect anticipated	
	River depth and width variation				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	mitigation. However, no deterioration in status of quality element anticipated at	Impacts on element screened out at preliminary assessment stage.	No measurable change in quality element anticipated. Additional	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	mitigation. However, no deterioration in status of quality element anticipated at	None	considered in combination. However no deterioration in status of quality	N/A	when additional mitigation applied. No deterioration in status of quality	Compliant - no deterioration in que element status anticipated
								the water body scale. Additional mitigation not required.		mitigation not required.			the water body scale. Additional mitigation not required.		element anticipated at water body scale. Additional mitigation not required.		element anticipated at water body scale	L
		-						Localised adverse effect anticipated					inigatori na requirea.		Localised adverse effect anticipated			
								when balanced against embedded		Negligible effect anticipated when balanced against embedded mitigation			Negligible effect anticipated when balanced against embedded mitigation.		when scheme component effects		Localised adverse effect anticipated	
	Structure and substrate of the river bed				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	mitigation. However, no deterioration in status of quality element anticipated at	Impacts on element screened out at preliminary assessment stage.	No measurable change in quality	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	No measurable change in quality	None	considered in combination. However no deterioration in status of quality	N/A	when additional mitigation applied. No deterioration in status of quality	Compliant - no deterioration in q element status anticipated
					, and a second stage.	,	,	the water body scale. Additional	p to the p to the second stage.	element anticipated. Additional mitigation not required.	and any angle	provide a state of the state of	element anticipated. Additional mitigation not required.		element anticipated at water body scale.		element anticipated at water body scale	
		-						mitigation not required.							Additional mitigation not required.			
								Localised adverse effect anticipated when balanced against embedded					Localised adverse effect anticipated when balanced against embedded		Localised adverse effect anticipated when scheme component effects		Localised adverse effect anticipated	
	Structure of the riparian zone				Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	mitigation. However, no deterioration in	Impacts on element screened out at	Element is insensitive to impact. No	Impacts on element screened out at preliminary	Impacts on element screened out at	mitigation. However, no deterioration in	None	considered in combination. However no	N/A	when additional mitigation applied. No	Compliant - no deterioration in qu
					presiminary assessment stage.	preliminary assessment stage.	presiminary assessment stage.	the water body scale. Additional	preliminary assessment stage.	measurable change to quality element	assessment stage.	presiminary assessment stage.	the water body scale. Additional		element anticipated at water body scale.		element anticipated at water body scale	element status anticipated
								mitigation not required.					mitigation not required.		Additional mitigation not required.			
	Priority substances	Fail	Good by 2027	Fail	Impacts on element screened out at preliminary assessment stage	Impacts on element screened out at preliminary assessment stage	Impacts on element screened out at preliminary assessment stare	Impacts on element screened out at preliminary assessment stage	Impacts on element screened out at preliminary assessment stage	Impacts on element screened out at preliminary assessment stage	impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage	Impacts on element screened out at preliminary assessment stage	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in que element status anticipated
		Fail	Good by 2027		Fail	preliminary assessment stage.	preliminary assessment stage. preliminary assessment stage.	preliminary assessment stage. preliminary assessment stage. preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage. In the text of element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage. I preliminary assessment stage.	Impacts on element to researce du ut preliminary assessment stage. Impacts on element screened ou at preliminary assessment stage. Impacts on element screened ou at preliminary assessment stage. In the water body calk. Additional metagement assessment stage. In the water body calk. Additional metagement assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment streened out at preliminary assessment streened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage. Impacts on element screened out at preliminary assessment stage. Impacts on element screened out at preliminary assessment stage. Impacts on element screened out at that of quality calls of element screened out at preliminary assessment stage. Impacts on element screened out at preliminary assessment stage. Impacts on element screened out at that of quality calls of element screened out at preliminary assessment stage. Impacts on element screened out at preliminary assessment stage. Impacts on element screened out at that of quality calls of element screened out at preliminary assessment stage. Impacts on element screened out at the earr body scie. Additional impacts on element screened out at preliminary assessment stage. Impacts on element screened out at the earr body scie. Additional impacts on element screened out at the earr body scie. Additional	Impacts on element screened out at preliminary assessment stage.	Impacts on elements screened aut at preliminary assessment stage. Bellement assessment	Impacts on denents screened out at preliminary assessment tage.

Peover Eye (GB112068060390)	ed impact assessment - effects on current						Detailed Imp	act Assessment							Detailed Impact Assessment Outcome		
Water body type:	River Not A/HMWB	+		tercourse (receptor value): ne component (Unique ID):	Smoker Brook Visduet (C	Tributary of Peo 8112068060390-T-01-VD-01)	ver Eye (Moderate)	e realignment (GB112068060390-T-01-RE	Smaker D	Peover rook Viaduct	Eye (High) Reover Eve - waterrourse realigns	nent (GB112068060390-MW-02-RE-01)					
Hydromorphological designation: Overall Status (2015):	Poor		Descriptio	ion of scheme component:				ye of 46m and 20m in length respectively, to				for 44m to avoid viaduct pier	Cumulative effects - effects on quality element from scheme	Overall effect on quality element at		Residual effect on quality element a	WFD compliance outcome - potenti
Overall Status Objective:	Good by 2027		Impact type	from scheme component:		Changes to water body		Changes to water body		Changes to water body		Changes to water body	quality element from scheme component(s) located in other WFD	overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element a water body scale	for deterioration of current status
Overall Status (2019):	Bad	RBMP Cycle 2 2015	RBMP Cycle 2 Status		Shading	hydromorphology leading to changes in river processes and habitats	s Footprint	hydromorphology leading to changes in river processes and habitats	Shading	hydromorphology leading to changes in river processes and habitats	Footprint	hydromorphology leading to changes in river processes and habitats	water bodies	,,		,,	quality element at water body scale
WFD Status Element	WFD Quality Element	Status	Objective	Status 2019		upstream and downstream		upstream and downstream		upstream and downstream		upstream and downstream					
									Localised adverse effect anticipated					Localised adverse effect anticipated			
					Negligible effect anticipated when balanced against embedded mitigation.	Negligible effect anticipated when balanced against embedded mitigation	Negligible effect anticipated when balanced against embedded mitigation	Negligible effect anticipated when balanced against embedded mitigation.	when balanced against embedded	Negligible effect anticipated when balanced against embedded mitigation.		Negligible effect anticipated when balanced against embedded mitigation.		when scheme component effects considered in combination. However n			
	Fish	Poor	Good by 2027	Bad	No measurable change in quality	No measurable change in quality	No measurable change in quality	No measurable change in quality	mitigation. However, no deterioration in status of quality element anticipated	No measurable change in quality	No measurable change in quality	No measurable change in quality	None	deterioration in status of quality	N/A	N/A	Compliant - no deterioration in qualit element status anticipated
					element anticipated. Additional	element anticipated. Additional	element anticipated. Additional	element anticipated. Additional	at the water body scale. Additional	element anticipated. Additional	element anticipated. Additional	element anticipated. Additional		element anticipated at water body			element status anticipated
					mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.		scale. Additional mitigation not required.			
														Localised adverse effect anticipated			
					Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when	Localised adverse effect anticipated when balanced against embedded	Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when		when scheme component effects			
liological	Macroinvertebrates	High	Good by 2015	Good	balanced against embedded mitigation. No measurable change in quality	balanced against embedded mitigation No measurable change in quality	 balanced against embedded mitigation No measurable change in quality 	 balanced against embedded mitigation. No measurable change in quality 	mitigation. However, no deterioration	balanced against embedded mitigation. No measurable change in quality	 balanced against embedded mitigation No measurable change in quality 	 balanced against embedded mitigation. No measurable change in quality 	None	considered in combination. However n deterioration in status of quality	N/A	N/A	Compliant - no deterioration in qualit
	inder on ver cest aces				element anticipated. Additional	element anticipated. Additional	element anticipated. Additional	element anticipated. Additional	in status of quality element anticipated at the water body scale. Additional	element anticipated. Additional	element anticipated. Additional	element anticipated. Additional	Hone	element anticipated at water body	1975	1975	element status anticipated
					mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.		scale. Additional mitigation not			
														required. Localised adverse effect anticipated			
					Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when	Localised adverse effect anticipated when balanced against embedded	Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when		when scheme component effects			
	Macrophytes and Phytobenthos -				balanced against embedded mitigation.	balanced against embedded mitigation	balanced against embedded mitigation	balanced against embedded mitigation.	mitigation. However, no deterioration	balanced against embedded mitigation.	balanced against embedded mitigation	balanced against embedded mitigation.		considered in combination. However n	<mark>p</mark>		Compliant - no deterioration in quali
	combined	Moderate	Good by 2027	Moderate	No measurable change in quality element anticipated. Additional	No measurable change in quality element anticipated. Additional	No measurable change in quality element anticipated. Additional	No measurable change in quality element anticipated. Additional	in status of quality element anticipated	No measurable change in quality element anticipated. Additional	No measurable change in quality element anticipated. Additional	No measurable change in quality element anticipated. Additional	None	deterioration in status of quality element anticipated at water body	N/A	N/A	element status anticipated
					mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	at the water body scale. Additional	mitigation not required.	mitigation not required.	mitigation not required.		scale. Additional mitigation not			
					<u> </u>				mitigation not required.					required.			
					Negligible effect anticipated when		Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when when	n		
					balanced against embedded mitigation.	Impacts on element screened out at	balanced against embedded mitigation	balanced against embedded mitigation.	balanced against embedded mitigation.	Impacts on element screened out at	balanced against embedded mitigation	balanced against embedded mitigation.		scheme component effects considered			Compliant - no deterioration in quality
	Dissolved oxygen	High	Good by 2015	Good	No measurable change in quality element anticipated. Additional	preliminary assessment stage.	No measurable change in quality element anticipated. Additional	No measurable change in quality element anticipated. Additional	No measurable change in quality element anticipated. Additional	preliminary assessment stage.	No measurable change in quality element anticipated. Additional	No measurable change in quality element anticipated. Additional	None	in combination. No measurable change in quality element anticipated.	N/A	N/A	element status anticipated
					mitigation not required.		mitigation not required.	mitigation not required.	mitigation not required.		mitigation not required.	mitigation not required.		Additional mitigation not required.			
	рН	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.		Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No		Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No	None	Element is insensitive to impact. No	N/A	N/A	Compliant - no deterioration in quality element status anticipated
					measurable change to quality element.	preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.	measurable change to quality element.	preliminary assessment stage.	measurable change to quality element.	. measurable change to quality element.		measurable change to quality element.			element status anticipated
							Negligible effect anticipated when				Negligible effect anticipated when			Negligible effect anticipated when when	n		
					Element is insensitive to impact. No	Impacts on element screened out at	balanced against embedded mitigation	Element is insensitive to impact. No	Element is insensitive to impact. No	Impacts on element screened out at	balanced against embedded mitigation	Element is insensitive to impact. No		scheme component effects considered			Compliant - no deterioration in quality
	Phosphate	Moderate	Good by 2027	Moderate	measurable change to quality element.	preliminary assessment stage.	No measurable change in quality element anticipated. Additional	measurable change to quality element.	measurable change to quality element.	preliminary assessment stage.	No measurable change in quality element anticipated. Additional	measurable change to quality element.	None	in combination. No measurable change in quality element anticipated.	N/A	N/A	element status anticipated
hysicochemical							mitigation not required.				mitigation not required.			Additional mitigation not required.			
							Negligible effect anticipated when balanced against embedded mitigation				Negligible effect anticipated when balanced against embedded mitigation			Negligible effect anticipated when when scheme component effects considered	n		
	Ammonia	High	Good by 2015	High	Element is insensitive to impact. No	Impacts on element screened out at	No measurable change in quality			Impacts on element screened out at	No measurable change in quality	Element is insensitive to impact. No	None	in combination. No measurable change	N/A	N/A	Compliant - no deterioration in quality
		-	-	-	measurable change to quality element.	preliminary assessment stage.	element anticipated. Additional	measurable change to quality element.	measurable change to quality element.	preliminary assessment stage.	element anticipated. Additional	measurable change to quality element.		in quality element anticipated.			element status anticipated
							mitigation not required.				mitigation not required.			Additional mitigation not required.			
					Negligible effect anticipated when				Negligible effect anticipated when					Negligible effect anticipated when when	n		
					balanced against embedded mitigation.	Impacts on element corecord out at	Element is insensitive to impact. No	Element is inconsitive to impact No.	balanced against embedded mitigation.	Imports on element streamed out at	Element is insensitive to impact. No	Element is insensitive to impact. No		scheme component effects considered			Compliant - no deterioration in guality
	Temperature	High	Good by 2015	High	No measurable change in quality	preliminary assessment stage.		measurable change to quality element.	No measurable change in quality	preliminary assessment stage.	measurable change to quality element.		None	in combination. No measurable change	N/A	N/A	element status anticipated
					element anticipated. Additional mitigation not required.				element anticipated. Additional mitigation not required.					in quality element anticipated. Additional mitigation not required.			
					Impacts on element screened out at	Imparts on element screened out at	Impacts on element screened out at	Imparts on element screened out at	Impacts on element screened out at	Imparts on element streened out at	Impacts on element screened out at	Imparts on element screened out at		Impacts on element screened out at			Compliant - no deterioration in guality
pecific Pollutants	Copper, Triclosan, Zinc	N/A	N/A	N/A	preliminary assessment stage.	preliminary assessment stage.			preliminary assessment stage.	preliminary assessment stage.		preliminary assessment stage.	None	preliminary assessment stage.	N/A	N/A	element status anticipated
								Negligible effect anticipated when		Negligible effect anticipated when		Negligible effect anticipated when		Negligible effect anticipated when when	2		
					Impacts on element screened out at	Element is inconsition to impact No.	Element is insensitive to impact. No	balanced against embedded mitigation.	Impacts on element screened out at	balanced against embedded mitigation.	Element is insensitive to impact. No	balanced against embedded mitigation.		scheme component effects considered			Compliant - no deterioration in guality
	Quantity and dynamics of water flow				preliminary assessment stage.		measurable change to quality element.	No measurable change in quality	preliminary assessment stage.	No measurable change in quality	measurable change to quality element.	No measurable change in quality	None	in combination. No measurable change	N/A	N/A	element status anticipated
								element anticipated. Additional mitigation not required.		element anticipated. Additional mitigation not required.		element anticipated. Additional mitigation not required.		in quality element anticipated. Additional mitigation not required.			
		_															
	Connection to groundwater bodies				Impacts on element screened out at preliminary assessment stage.		Element is insensitive to impact. No			Element is insensitive to impact. No			None	Element is insensitive to impact. No	N/A	N/A	Compliant - no deterioration in quality element status anticipated
		_			preliminary assessment stage.	measurable change to quality element.	. measurable change to quality element.	measurable change to quality element.	prenminary assessment stage.	measurable change to quality element.	measurable change to quality element.	measurable change to quality element.		measurable change to quality element.			element status anticipated
							Negligible effect anticipated when	Negligible effect anticipated when			Negligible effect anticipated when	Negligible effect anticipated when		Localised adverse effect anticipated			
							balanced against embedded mitigation	balanced against embedded mitigation.			balanced against embedded mitigation	balanced against embedded mitigation.		when balanced against embedded			
	River continuity					Element is insensitive to impact. No measurable change to quality element.	No measurable change in quality	No measurable change in quality	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	No measurable change in quality	No measurable change in quality	None	mitigation. However, no deterioration in status of quality element anticipated	N/A	N/A	Compliant - no deterioration in quality element status anticipated
					p		element anucipated. Additional	element anticipated. Additional	,	,,, _,, _	element anocipateu. Auditional	element anticipated. Additional mitigation not required.		at the water body scale. Additional			
							mitigation not required.	mitigation not required.			mitigation not required.	mitigation not required.		mitigation not required.			
														Localised adverse effect anticipated			
lydromorphological		Supports Good	Supports Good by 2015	Supports Good			Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when		when scheme component effects			
	River depth and width variation					Element is insensitive to impact. No	balanced against embedded mitigation No measurable change in quality	 balanced against embedded mitigation. No measurable change in quality 	Impacts on element screened out at	No measurable change in quality	 balanced against embedded mitigation No measurable change in quality 	 balanced against embedded mitigation. No measurable change in quality 	None	considered in combination. However no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality
					preliminary assessment stage.	measurable change to quality element.	element anticipated. Additional	element anticipated. Additional	preliminary assessment stage.	element anticipated. Additional	element anticipated. Additional	element anticipated. Additional	Hone	element anticipated at water body	1975	1975	element status anticipated
							mitigation not required.	mitigation not required.		mitigation not required.	mitigation not required.	mitigation not required.		scale. Additional mitigation not			
		_												required.			
							Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when		Negligible effect anticipated when		Negligible effect anticipated when when	n		
	Structure and substrate of the river bed				Impacts on element screened out at		balanced against embedded mitigation No measurable change in quality	 balanced against embedded mitigation. No measurable change in quality 	Impacts on element screened out at	balanced against embedded mitigation. No measurable change in quality	 balanced against embedded mitigation No measurable change in quality 	 balanced against embedded mitigation. No measurable change in quality 	None	scheme component effects considered in combination. No measurable change	N/A	N/A	Compliant - no deterioration in quality
	Scructure and subscrate of the river bed				preliminary assessment stage.	measurable change to quality element.	element anticipated. Additional	element anticipated. Additional	preliminary assessment stage.	element anticipated. Additional	element anticipated. Additional	element anticipated. Additional	None	in quality element anticipated.	120	1004	element status anticipated
							mitigation not required.	mitigation not required.		mitigation not required.	mitigation not required.	mitigation not required.		Additional mitigation not required.			
		1				Localised adverse effect anticipated				Localised adverse effect anticipated				Localised adverse effect anticipated			
						when balanced against embedded				when balanced against embedded				when scheme component effects			
	Structure of the riparian zone				Impacts on element screened out at	mitigation. However, no deterioration		Element is insensitive to impact. No		mitigation. However, no deterioration	Element is insensitive to impact. No		None	considered in combination. However no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality
					preliminary assessment stage.		measurable change to quality element.	measurable change to quality element.	preliminary assessment stage.		measurable change to quality element.	measurable change to quality element.		element anticipated at water body	1975	100	element status anticipated
						at the water body scale. Additional mitigation not required.				at the water body scale. Additional mitigation not required.				scale. Additional mitigation not			
					Impacts on alamant screened		Imports on plamont company doublet	Impacts on element screened out at	Imports on element corespond and an		Imports on element crosses d aut at	Impacts on element coreans days are		required. Impacts on element screened out at			Compliant - no deterioration in quality
	Priority substances	Good	Good by 2015	Fail									None		N/A	N/A	

Water body type: Hydromorphological designation:	River		Watercourse (receptor value):													
Hydromorphological designation:		-	matericourse (receptor minue).		Smoker B	rook (High)	Waterless Brook / Arley Brook (High)	Tabley Brook		Tributary of Tabley Brook 9	-					
	Not A/HMWB	s	Scheme component (Unique ID)):		rook Viaduct i10-MW-01-VD-01)	Arley Brook Viaduct (GB112068060410-MW-03-VD-02)	Site access clear span bridge over Tabley Brook (GB112068060410-T-01-OB-01)	Hoo Green Box (GB112068060410-T-10 TP-01)	Hoo Green south cutting retaining wall (GB112068060410-T-10-CU-01)	Hoo Green north cutting (GB112068060410-T-10-CU-02) (with retaining walls)	-				
Overall Status (2015):	Poor	De	escription of scheme componer	nt:		box girder viaduct comprising 18 x 44.8m xr. height of 24.7m.	A 14.0m wide x 201.0m long precast W- type PCC beams and in-situ deck viaduct comprising 3 x 33m span and 3x 34m span), up to max approx height of 12.2m.	Overbridge / clear span bridge associated with temporary access road crossing Tabley Brook	297m long bax structure Up to 8.7mbgl	Hoo Green south cutting retaining wall is approx. 360m in length, with a maximum cutting depth of 7.5m. The cutting will penetrate the glocial till and the Mercia Mudstone Group.	in lawsh with a maximum of 17 has	Cumulative effects - effects on quality element from scheme component(s)	Overall effect on quality element at water body scale	Additional mitigation requirements	s Residual effect on quality element a water body scale	WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
Overall Status Objective: Overall Status (2019):	Good by 2027 Bad	Imp	act type from scheme compon	ient:	_				Changes in flow velocity and volume	Changes in flow velocity and volume	/ Changes in flow velocity and volume /					
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Statu	RBMP Cycle 2 Status Objective	Status 2019	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	5 Shading	Shading	Changes to water body hydromorphology leading to change in river processes and habitats upstream and downstream	Changes to water body	Changes to water body					
	Fish	Poor	Good by 2027	Bad	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligble effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligble effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However on deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	o N/A	N/A	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mtigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change inquality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However on deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	o ti N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mtigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However on deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	o ti N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	рН	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Physicochemical	Phosphate	Moderate	Good by 2027	Moderate	Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element.					None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	n e N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Ammonia	High	Good by 2015	Good	Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element.					None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	n e N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	n • N/A	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Quantity and dynamics of water flow				Impacts on element screened out at preliminary assessment stage.		Impacts on element screened out at		Localised adverse effect anticipated when balanced against embedded	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in	Localised adverse effect anticipated when balanced against embedded n mitigation. However, no deterioration in	None	Localised adverse effect anticipated when scheme component effects considered in combination. However on deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	a N/A	NA	Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies				Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	when balanced against embedded mitigation. However, no deterioration in		when balanced against embedded mitigation. However, no deterioration in t status of quality element anticipated at	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	nva	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River continuity	- Supports Good	Supports Good by 2015	Supports Good	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.		Impacts on element screened out at preliminary assessment stage.			Element is insensitive to impact. No measurable change to quality element.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	n/A	N/A	Compliant - no deterioration in quality element status anticipated
	River depth and width variation				Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated, Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated, Additional mitigation not required.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	o ti	N/A	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bed				Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Negligble effect anticipated when balanced against embedded mitigation No messurable change in quality element anticipated. Additional mitigation not required.	Negligble effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However on deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	t N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone				Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.			Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	5 N/A	N/A	Compliant - no deterioration in quality element status anticipated
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.				Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated

Table A.11: Bollin (Ashley Mill to Manchester		npact assessment - effec	cts on current status													
Bollin (Ashley Mill to Manchester Ship Canal) (GB112 Water body type:	2069061382) River		Wa	tercourse (receptor value);	Millington C	Clough (High)	Agden Brool	Detailed Impact Assessment (Moderate)	Tributary of River Bollin 10	Tributary of River	Bollin 11 (Moderate)			Detailed Impact Assessment Outcome		
	rue Cl				Alliantes Claush Hadashaides	Millington Clough Ofline Underbridge		Millington Cutting	(Moderate) Millington Cutting	Millington Cutting	Rostherne Cutting Retaining Wall West	-				
Hydromorphological designation:	HMWB		Schei	me component (Unique ID):	Millington Clough Underbridge (GB112069061382-MW-05-UB-01)	(GB112069061382-MW-05-UB-02)	Agden Brook Viaduct (GB112069061382-MW-06-VD-01)	Millington Cutting (GB112069061382-MW-06-CU-01)	Millington Cutting (GB112069061382-T-07-CU-01)	Millington Cutting (GB112069061382-T-08-CU-01)	(GB112069061382-T-08-CU-02)					
Overall Status (2015):	Moderate		Descrip	tion of scheme component:	Millington Clough Underbridge approx. S8m in length and max. 5.6m above existing ground level (Confirm component naming and height)	Offline Overbridge for Peacock Lane Access Track over Millington Clough	A 119.0m long concrete box girder vioduct, up to 13.7m high, comprising 5 x 27.17m spans.	1.46km long Up to a depth of 11.4mbgl Connects with Manchester to Liverpool Junction	1.46km long Up to a depth of 11.4mbgl Connects with Manchester to Liverpool Junction	1.46km long Up to a depth of 11.4mbgl Connects with Manchester to Liverpool Junction	110m long Varying in depth up to 6.8mbgl	Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element a water body scale	WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
Overall Status Objective: Overall Status (2019):	Moderate by 2015 Moderate		Impact type	e from scheme component:				Changes in flow velocity and volume /	Changes in flow velocity and volume /	Changes in flow velocity and volume /						
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Shading	Shading	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream					
	Fish	Poor	Good by 2027	Poor	Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	Moderate	Good by 2027	Good	status of quality element anticipated at		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	N/A	N/A	N/A	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	High	Good by 2015	Good	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	рн	High	Good by 2015	High		Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.		None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Physicochemical	Phosphate	Poor	Moderate by 2027	Poor	Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element.		None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Ammonia	Good	Good by 2027	Good		Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.		None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.		Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Quantity and dynamics of water flow				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.		Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at	Localised adverse effect anticipated	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	River depth and width variation				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bed	_			Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.		Impacts on element screened out at preliminary assessment stage.					None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated

	ook to River Bollin (including Rostherne Brool		iled impact assessment	- effects on current st	atus															
Birkin Brook - Mobberley Brook to River Boll Water body type:	llin (including Rostherne Brook) (GB11206906137) River		Vatercourse (receptor valu	e):	Blackburn's Brook (Moderate)	Birkin Brook (High)		Detailed Imp	act Assessment				Tributary of Birkin Brook 1 (N	fiddle House Brook) (Moderate)						
Hydromorphological designation:	Not A/HMWB	Sc	heme component (Unique	ID):	Blackburn's Brook Viaduct (GB112069061370-MW-01-VD-01)	Blackburn's Brook Viaduct (GB112069061370-MW-02-VD-02)	Tributary of Birki	n Brook 1 Offline East Culvert (GB1120	0691370-T-04-CV-03)	Mid Cheshire L	ine Offline South Culvert (GB1120690	51370-T-04-CV-04,	Ashley Railhead C	offline Temporary Culvert South (GB11	2069061370-T-04-05)		ow Channel (GB112069061370-T-04-RE- 02a)	Mobberle	y Road Offline Culvert (GB11206906137	'0-T-04-CV-07)
	D-d	Dat	cription of scheme compo	oest-	An approx 384.0m long concrete bax girder viaduct, up to 10.4m max. height,	girder viaduct, up to 10.4m max. height,	Currently indicated as a culvert to prov	vide access to Lower House Farm field. Ma	y be replaced by an overbridge. Length	Permanent structure following remove	l of Ashley Railhead Culvert (construction)	to convey flood flows - length under Mid	Temporary cubert approx (easth = 1	65m to be replaced by an open channel afte	r decommission of the Arbies Dollhand	Overflow channel for flood flow. Includ	les an overspill weir to pass water into the	Culture correction	; flood overflow channel under Mobberley R	nad length = 45m
Overall Status (2015): Overall Status Objective:	Moderate by 2027		ct type from scheme compo		comprising 1 x 32.5m spans, 1 x 32.0m spans, 7 x 40.0m spans and 1x 39.5m span	comprising 1 x 32.5m spans, 1 x 32.0m spans, 7 x 40.0m spans and 1x 39.5m span		approx 34m	1		Cheshire railine = 26.5m	1	renporary caver c approx rengar = 1	esni io de replaced dy an open channel que	r accommission of the Asiney Romedo	overflor	w channel.	cavercaryng	g jood overpaw channe ander waddeney w	-
Overall Status (2019): WED Status Element	Bad WFD Quality Element	RBMP Cycle 2 2015	RBMP Cycle 2 Status	Status 2019	Shading	Shading	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and	Footprint	Changes to water body hydromorphology leading to changes in river processes and	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and
	Eich	Status	Objective Good by 2027	Bad	Negligible effect anticipated when balanced against embedded mitiation. No measurable chance in	Negligible effect anticipated when balanced against embedded mititation. No measurable chance in	mitigation. However, no deterioration	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	habitats upstream and downstream Negligible effect anticipated when balanced against embedded mitigation. No measurable change in	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	habitats upstream and downstream Negligible effect anticipated when balanced against embedded mitiation. No measurable change in	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	mitigation. However, no deterioration	habitats upstream and downstream Negligible effect anticipated when balanced against embedded militation for mesurable channe is	n Localised beneficial effect anticipated However, no increase in quality	habitats upstream and downstream Negligible effect anticipated when balanced against embedded militation. No measurable chance in	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	mitigation. However, no deterioration	habitats upstream and downstream Negligible effect anticipated when balanced against embedded militation. No measurable chanse in
					quality electron not required. Additional	quality element anticipated. Additional mitigation not required.		in status of quality element anticipated at the water body scale. Additional mitigation not required.	quality element anticipated. Additiona mitigation not required.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	quality element anticipation of required.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	anticipated at the water body scale.	quality element anticipated. Addition mitigation not required.	element status anticipated at the water body scale.	quality element anticipated. Additiona mitigation not required.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	quality element anticipated. Additiona mitigation not required.
Biological	Macroinvertebrates	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additional mitigation not required.	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element articipated at the water body scale. Additional mitigation not required.	mitigation. However, no deterioration in status of quality element anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable charge i quality element anticipated. Addition mitigation not required.	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratior in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.
	Macrophytes and Phytobenthos - combined	Moderate	Moderate by 2015	Moderate	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of guality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded miligation. Nor measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Lonalised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded miligation. Nor measurable change in quality element anticipated. Additional mitigation not required.		Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded miligation. Nor measurable change it quality element anticipated. Addition mitigation not required.	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. Nor measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratior in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No messurable change in quality element anticipated. Addition, mitigation not required.
	Dissolved oxygen	Poar	Good by 2027	High	Negligible effect anticipated when balanced against embedded mitgation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Addisonal mitigation not required.		Impacts on element screened out at preliminary assessment stage.	Negligble effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated mitigation not required.	Negligble effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable charge is quality element anticipated. Addition mitigation not required.	balanced against embedded	balanced against embedded	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change ir quality element anticipated mitigation not required.
	рн	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.
Physicochemical	Phosphate	Moderate	Moderate by 2015	Good	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No messurable change in quality element anticipated. Additiona mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.
	Ammonia	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable charge to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitgation. No measurable change in quality element anticipated. Additiona mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.
	Temperature	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable charge to quality element.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitgation. No measurable charge in quality element anticipated. Additiona mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded miligation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.		Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitgation. No messurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	t Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.
	Quantity and dynamics of water flow				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded milipation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element articipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change it quality element anticipated. Addition mitigation not required.	Element is insensitive to impact. No measurable change to quality al	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratior in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additions mitigation not required.
	Connection to groundwater bodies				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable charge to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no detectionation in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.		Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Impacts on element screened out at preliminary assessment stage.	impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change quality elemert anticipated. Additiona mitigation not required.		Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.
Hyaromorphological	River depth and width variation	- Supports Good	Supports Good by 2015	Supports Good	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitgation. No measurable change in quality element anticipated. Additiona mitigation not required.		Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitgation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitgaton. No measurable change quality element anticipated. Addition mitigation not required.	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitgation. No measurable change in quality elemetra anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitgation. No measurable changi quality element anticipated. Addition mitigation not required.
	Structure and substrate of the river bed				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in guality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no detectionation in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation: Neuvers, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Addition mitigation not required.	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable charge in guality elemetra anticipated. Additiona mitigation not required.		Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitgation. No measurable change in quality element anticipated. Addition mitigation not required.
	Structure of the riparian zone				impacts on element screened out at preliminary assessment stage.	impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element articipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitggaton. However, no deterioration in status of quality element articipated at the water body scale. Additional mitggation not required.	impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deteioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	t Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.

Table A.12: Birkin Brook - Mobberley Brook Birkin Brook - Mobberley Brook to River Bollin (to River Bollin (including Rostherne Brook) including Rostherne Brook) (GB112069061370)				tus											
Water body type:	River	v	Vatercourse (receptor val	lue):				Reali	gnment							
Hydromorphological designation:	Not A/HMWB	Sci	heme component (Unique	e ID):	Tributary of Birkin	Brook 1 Offline West Culvert (GB1120	69061370-T-04-CV-07)	(GB11206906	1370-T-06-RE-03) o Ashley Railhead)	Mobberley Road Offline Overbridge (GB112069061370-T-06-OB-02)	Extension	of existing culvert (GB112069061370-	-T-06-CVX-03)	Ashley Road	d Offline East Culvert (GB11206906137	0-T-06-CVH-04)
Overall Status (2015):	Bad	Des	cription of scheme comp	onent		Length = 7.5m			permanent realignment proposed due to ng in place for c.Syears	Bridge over realigned channel	Tributary crosses track at location of	existing culvert. No additional culvert show existing culvert	in in gigt, so assumed to be extension of	Ashli	ty Road Offline East Culvert approx. 22m it	n length
Overall Status Objective: Overall Status (2019):	Moderate by 2027 Bad	Impa	ct type from scheme com	nponent:	-		Changes to water body hydromorphology leading to		Changes to water body hydromorphology leading to				Changes to water body hydromorphology leading to			Changes to water body hydromorphology leading to
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Footprint	Shading	changes in river processes and habitats upstream and downstream	Footprint	changes in river processes and habitats upstream and downstream	Shading	Footprint	Shading	changes in river processes and habitats upstream and downstream	Footprint	Shading	changes in river processes and habitats upstream and downstream
					Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Negligible effect anticipated when balanced against embedded	Localised beneficial effect anticipated However, no increase in guality	Negligible effect anticipated when balanced against embedded	Localised adverse effect anticipated when balanced against embedded mitigation. However. no deterioration	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Negligible effect anticipated when balanced against embedded	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Negligible effect anticipated when balanced against embedded
	Fish	Bad	Good by 2027	Bad	in status of quality element anticipated at the water body scale.	in status of quality element anticipated at the water body scale.	mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	element status anticipated at the water body scale.	mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	in status of quality element anticipated at the water body scale.	in status of quality element anticipated at the water body scale.	in status of quality element anticipated at the water body scale.	n mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	in status of quality element anticipated at the water body scale.	in status of quality element anticipated at the water body scale.	mitigation. No measurable change i quality element anticipated. Addition mitigation not required.
					Additional mitigation not required.	Additional mitigation not required.	magazor nor required.		ningskon net requiree.	Additional mitigation not required.	Additional mitigation not required.	Additional mitigation not required.	magason ne requires.	Additional mitigation not required.	Additional mitigation not required.	magador noc required.
					Localised adverse effect anticipated	Localised adverse effect anticipated	Negligible effect anticipated when		Negligible effect anticipated when	Localised adverse effect anticipated	Localised adverse effect anticipated	Localised adverse effect anticipated	Negligible effect anticipated when	Localised adverse effect anticipated	Localised adverse effect anticipated	Negligible effect anticipated when
Biological	Macroinvertebrates	High	Good by 2015	High	when balanced against embedded mitigation. However, no deterioration in status of quality element	when balanced against embedded mitigation. However, no deterioration in status of quality element	balanced against embedded mitigation. No measurable change in	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the	balanced against embedded mitigation. No measurable change in	when balanced against embedded mitigation. However, no deterioration in status of quality element	when balanced against embedded mitigation. However, no deterioration in status of quality element	when balanced against embedded mitigation. However, no deterioration in status of quality element	balanced against embedded mitigation. No measurable change in	when balanced against embedded mitigation. However, no deterioration in status of quality element	when balanced against embedded mitigation. However, no deterioration in status of quality element	balanced against embedded mitigation. No measurable change i
					anticipated at the water body scale. Additional mitigation not required.	anticipated at the water body scale. Additional mitigation not required.	quality element anticipated. Additiona mitigation not required.	water body scale.	quality element anticipated. Additional mitigation not required.	anticipated at the water body scale. Additional mitigation not required.	anticipated at the water body scale. Additional mitigation not required.	anticipated at the water body scale. Additional mitigation not required.	quality element anticipated. Additiona mitigation not required.	anticipated at the water body scale. Additional mitigation not required.	anticipated at the water body scale. Additional mitigation not required.	quality element anticipated. Addition mitigation not required.
	Macrophytes and Phytobenthos -				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Negligible effect anticipated when balanced against embedded	Localised beneficial effect anticipated However, no increase in quality	Negligible effect anticipated when balanced against embedded	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration		when balanced against embedded	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration	Negligible effect anticipated when balanced against embedded
	combined	Moderate	Moderate by 2015	Moderate	in status of quality element anticipated at the water body scale.	in status of quality element anticipated at the water body scale.	mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	element status anticipated at the water body scale.	mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	in status of quality element anticipated at the water body scale.	in status of quality element anticipated at the water body scale.	in status of quality element anticipated at the water body scale.	n mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	in status of quality element anticipated at the water body scale.	in status of quality element anticipated at the water body scale.	mitigation. No measurable change in quality element anticipated. Addition mitigation not required.
					Additional mitigation not required.	Additional mitigation not required.				Additional mitigation not required.	Additional mitigation not required.	Additional mitigation not required.		Additional mitigation not required.	Additional mitigation not required.	
						Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when	Negligible effect anticipated when		Negligible effect anticipated when	Negligible effect anticipated when
	Dissolved oxygen	Poor	Good by 2027	High	Impacts on element screened out at preliminary assessment stage.	balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona	balanced against embedded mitigation. No measurable change in	balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona	balanced against embedded mitigation. No measurable change in	balanced against embedded mitigation. No measurable change in guality element anticipated. Additional	Impacts on element screened out at preliminary assessment stage.	balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona	balanced against embedded	Impacts on element screened out at preliminary assessment stage.	balanced against embedded mitigation. No measurable change in	balanced against embedded mitigation. No measurable change in
						quality element anticipated. Additiona mitigation not required.	l quality element anticipated. Additiona mitigation not required.	mitigation not required.	al quality element anticipated. Additional mitigation not required.	mitigation not required.		mitigation not required.	ni quality element anticipated. Additiona mitigation not required.		quality element anticipated. Additiona mitigation not required.	al quality element anticipated. Addition mitigation not required.
					Impacts on element screened out at	Element is insensitive to impact. No	Element is insensitive to impact. No	Element is insensitive to impact. No	Element is insensitive to impact. No	Element is insensitive to impact. No	Impacts on element screened out at	Element is insensitive to impact. No		Impacts on element screened out at	Element is insensitive to impact. No	Element is insensitive to impact. No
	PH	High	Good by 2015	High	preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.	measurable change to quality element.	measurable change to quality element.	measurable change to quality element.	preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.	preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.
								Negligible effect anticipated when								
	Phosphate	Moderate	Moderate by 2015	Good	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality	Element is insensitive to impact. No measurable change to quality	balanced against embedded mitigation. No measurable change in	Element is insensitive to impact. No measurable change to quality	Element is insensitive to impact. No measurable change to quality	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality	Element is insensitive to impact. No measurable change to quality	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality	Element is insensitive to impact. No measurable change to quality
Physicochemical						element.	element.	quality element anticipated. Additiona mitigation not required.	i element.	element.		element.	element.		element.	element.
						Element is insensitive to impact. No	Element is insensitive to impact. No	Negligible effect anticipated when balanced against embedded	Element is insensitive to impact. No	Element is insensitive to impact. No		Element is insensitive to impact. No	Element is insensitive to impact. No		Element is insensitive to impact. No	Element is insensitive to impact. No
	Ammonia	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.	mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	measurable change to quality element.	measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.
								mugauur not required.								
						Negligible effect anticipated when				Negligible effect anticipated when		Negligible effect anticipated when			Negligible effect anticipated when	
	Temperature	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	balanced against embedded mitigation. No measurable change in	Element is insensitive to impact. No measurable change to quality	Element is insensitive to impact. No measurable change to quality	Element is insensitive to impact. No measurable change to quality	balanced against embedded mitigation. No measurable change in	Impacts on element screened out at preliminary assessment stage.	balanced against embedded mitigation. No measurable change in	Element is insensitive to impact. No measurable change to quality	Impacts on element screened out at preliminary assessment stage.	balanced against embedded mitigation. No measurable change in	Element is insensitive to impact. No measurable change to quality
						quality element anticipated. Additiona mitigation not required.	l element.	element.	element.	quality element anticipated. Additional mitigation not required.		quality element anticipated. Additiona mitigation not required.	al element.		quality element anticipated. Additiona mitigation not required.	element.
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.
					Localised adverse effect anticipated						Localised adverse effect anticipated			Localised adverse effect anticipated		
	Quantity and dynamics of water flow				when balanced against embedded mitigation. However, no deterioration in status of quality element	Impacts on element screened out at	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in	Element is insensitive to impact. No measurable change to quality	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in	Impacts on element screened out at	when balanced against embedded mitigation. However, no deterioration in status of quality element	Impacts on element screened out at	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in	when balanced against embedded mitigation. However, no deterioration in status of quality element	Impacts on element screened out at	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in
					anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	quality element anticipated. Additiona mitigation not required.	l element.	quality element anticipated. Additional mitigation not required.	preliminary assessment stage.	anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	quality element anticipated. Additiona mitigation not required.	anticipated at the water body scale. Additional mitigation not required.	preiminary assessment stage.	quality element anticipated. Addition mitigation not required.
					Localised adverse effect anticipated when balanced against embedded		Element is insensitive to impact 11	Element is inversitive to impact 11-	Element is intensitive to impact the		Localised adverse effect anticipated when balanced against embedded		Element is insensitive to impact the	Localised adverse effect anticipated when balanced against embedded		Element is incenditive to impact the
	Connection to groundwater bodies				mitigation. However, no deterioration in status of quality element anticipated at the water body scale.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensiove to impact. No measurable change to quality element.	element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	mitigation. However, no deterioration in status of quality element anticipated at the water body scale.	Impacts on element screened out at preliminary assessment stage.	element. Is insensitive to impact. No measurable change to quality element.	in status of quality element anticipated at the water body scale.	Impacts on element screened out at preliminary assessment stage.	element is insensitive to impact. No measurable change to quality element.
					Additional mitigation not required.						Additional mitigation not required.			Additional mitigation not required.		
					Localised adverse effect anticipated						Localised adverse effect anticipated			Localised adverse effect anticipated		
	River continuity				when balanced against embedded mitigation. However, no deterioration in status of quality element	Impacts on element screened out at	Element is insensitive to impact. No measurable change to quality	Localised beneficial effect anticipated However, no increase in quality	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in	Impacts on element screened out at	when balanced against embedded mitigation. However, no deterioration in status of quality element	Impacts on element screened out at	mitigation. No measurable change in	when balanced against embedded	Impacts on element screened out at	Element is insensitive to impact. No measurable change to quality
	_				in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	element.	element status anticipated at the water body scale.	quality element anticipated. Additional mitigation not required.	preliminary assessment stage.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	quality element anticipated. Additiona mitigation not required.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	element.
Hydromorphological		Supports Good	Supports Good by 2015	s Supports Good												
					Localised adverse effect anticipated when balanced against embedded		Negligible effect anticipated when balanced against embedded	Localised beneficial effect anticipated	Negligible effect anticipated when balanced against embedded		Localised adverse effect anticipated when balanced against embedded		Negligible effect anticipated when balanced against embedded	Localised adverse effect anticipated when balanced against embedded		Negligible effect anticipated when balanced against embedded
	River depth and width variation				mitigation. However, no deterioration in status of quality element anticipated at the water body scale.	Impacts on element screened out at preliminary assessment stage.	mitigation. No measurable change in quality element anticipated. Additiona	However, no increase in quality element status anticipated at the water body scale.	mitigation. No measurable change in quality element anticipated. Additional	Impacts on element screened out at preliminary assessment stage.	mitigation. However, no deterioration in status of quality element anticipated at the water body scale.	Impacts on element screened out at preliminary assessment stage.	mitigation. No measurable change in quality element anticipated. Additiona	mitigation. However, no deterioration in status of quality element anticipated at the water body scale.	Impacts on element screened out at preliminary assessment stage.	mitigation. No measurable change in quality element anticipated. Addition
					Additional mitigation not required.		mitigation not required.		mitigation not required.		Additional mitigation not required.		mitigation not required.	Additional mitigation not required.		mitigation not required.
					Localised adverse effect anticipated						Localised adverse effect anticipated			Localised adverse effect anticipated		
	Structure and substrate of the river bed				when balanced against embedded mitigation. However, no deterioration	Impacts on element screened out at	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in	Localised beneficial effect anticipated However, no increase in quality	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in	Impacts on element screened out at	when balanced against embedded mitigation. However, no deterioration	Impacts on element screened out at	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in	when balanced against embedded mitigation. However, no deterioration	Impacts on element screened out at	mitigation. No measurable change in
					in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	quality element anticipated. Additiona mitigation not required.	element status anticipated at the water body scale.	quality element anticipated. Additional mitigation not required.	preliminary assessment stage.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	quality element anticipated. Additiona mitigation not required.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	quality element anticipated. Addition mitigation not required.
					Localised adverse effect anticipated when balanced against embedded						Localised adverse effect anticipated when balanced against embedded			Localised adverse effect anticipated when balanced against embedded		
	Structure of the riparian zone				mitigation. However, no deterioration in status of quality element anticipated at the water body scale.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	mitigation. However, no deterioration in status of quality element anticipated at the water body scale.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	mitigation However, no deterioration	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.
					Additional mitigation not required.						Additional mitigation not required.			Additional mitigation not required.		
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at				Impacts on element screened out at				: Impacts on element screened out at			
	-				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.

	Mid Cheshire Li	ne Offline North Culvert (GB11206906	1370-T-04-CV-08)
	Li	ength approx 21m to replace existing culve	t
i sam	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream
n sin onal	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deteriorion in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deteriorison in status: of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
n sin onal	Localised adverse effect anticipated when balanced against embodded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality deement anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitgation. No messurable change in qualky element anticipated. Additional mitigation not required.
n sin onal	Localised adverse effect anticipated when balanced against embodded mitigation. However, no deteriorided in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation, However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitgateinen. No messurable change in qualky leint anticipated. Additional mitigation not required.
n e in onal	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitgation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitgation. No messurable change in quality element anticipated. Additional mitigation not required.
No	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.
No	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.
No	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.
No	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitgation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.
at	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.
n sin onal	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
No	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element. anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.
No	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality dement anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.
n e in onal	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality dement anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
n sin onal	Localised adverse effect anticipated when balanced against embedded mitigation. However, no detenoid in status of quality determent anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No messurable change in qualty element anticipated. Additional mitigation not required.
No	Localised adverse effect anticipated when balanced against embedded nitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.
at	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.

	k to River Bollin (including Rostherne Brook	k) (GB112069061370) de	etailed impact assessme	nt - effects on current	status					Detailed Impact Assessment Outcome		
Birkin Brook - Mobberley Brook to River Bollin Water body type:	(including Rostherne Brook) (GB112069061370) River	v	Vatercourse (receptor value	e):						Detailed Impact Assessment Outcome		
Hydromorphological designation:	Not A/HMWB	Sci	heme component (Unique	D):	Ashley Railhead Off	line Temporary Culvert North (GB1120	99061370-T-04-CV-09)					
Overall Status (2015):	Bad	Des	cription of scheme compor	ient:	Temporary culvert for construction railhe	ad. Length approx 50m to be replaced by ar Ashley Railhead	open channel after decommission of the	Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element at water body scale	WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
Overall Status Objective: Overall Status (2019):	Moderate by 2027 Bad	Impa	ct type from scheme comp	onent:	-	and a	Changes to water body hydromorphology leading to changes	-				
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Footprint	Shading	in river processes and habitats upstream and downstream					
	Fish	Bad	Good by 2027	Bad	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	High	Good by 2015	High	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. Nowever no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	Moderate	Moderate by 2015	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No messurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However deterioration in status of quarking element anticipated at water body scale. Additional mitigation not required.	NA	N/A	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	Poor	Good by 2027	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No messarable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No messurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	NA	N/A	Compliant - no deterioration in quality element status anticipated
	рн	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Physicochemical	Phosphate	Moderate	Moderate by 2015	Good	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.		None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipate. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Ammonia	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.		None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipate. Additional mitigation not required.	N/A.	N/A	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipate. Additional mitigation not required.	N/A.	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Quantity and dynamics of water flow				Localsed adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No messurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. Nowever no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Localised adverse effect anticipated when balanced against embedded mitigation. Noverse, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Nane	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
nyeromerphologica	River depth and width variation	Supports Good	Supports Good by 2015	Supports Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. Nowever no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bed				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	NA	N/A	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Nane	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated

Rostherne Mere (GB31232650)		ts on current status					Detailed Imp	act Assessment					Detailed Impact Assessment Outcom	e	
Water body type:	Lake			tercourse (receptor value):			Rostherne N	ere (Very high)			_				
Hydromorphological designation: Overall Status (2015):	Not A/HMWB Bad			ne component (Unique ID): tion of scheme component:		650-LAKE-01-CU-01) including: length, with a maximum of 12.7m cutting	Rostherne Cutting (GB3123 Rostherne Cutting Is approx. 0.8km in le	650-LAKE-01-CU-02) including: ngth, with a maximum 7.8m cutting depth.		232650-LAKE-01-CU-03) including: When in length, with a maximum of 17.3m	Cumulative effects - effects on				WFD compliance outcome - potentia
Overall Status Objective:	Moderate by 2027			e from scheme component:		Changes in water quality due to		Changes in water quality due to		Changes in water quality due to	quality element from scheme component(s) located in other WFD	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality eleme water body scale	for deterioration of current status o
Overall Status (2019):	Bad	RBMP Cycle 2 2015	RBMP Cycle 2 Status	1	/ Changes to water body	discharge of groundwater to surface	/ Changes to water body	discharge of groundwater to surface	/ Changes to water body	discharge of groundwater to surface		,		,,	quality element at water body scale
WFD Status Element	WFD Quality Element	Status	Objective	Status 2019	hydromorphology	water	hydromorphology	water	hydromorphology	water					
	Fish	N/A	N/A	N/A	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitgation not required.		Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Macroinvertebrates (Chironomids)	Good	Good by 2015	Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration is status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Biological	Phytoplankton	Poor	Good by 2027	Poor	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipatee at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	Bad	Good by 2027	Bad	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipatee at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N⁄A	NA	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	Poor	Good by 2027	Poor	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	i e N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Acid neutralising capacity	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element	Negligible effect anticipated when balanced against embedded mitigatior No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	i e N/A	N/A	Compliant - no deterioration in quality element status anticipated
Physicochemical	Total Phosphorus	Bad	Poor by 2027	Bad	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigatior No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	i e N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Ammonia	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigatior No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	i e N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Salinity	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	i e N/A	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.			Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.			None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	NA	Compliant - no deterioration in quality element status anticipated
Hydromorphological	Hydrological Regime	Supports Good	Supports Good by 2015	High	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitgation not required.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	NA	Compliant - no deterioration in quality element status anticipated
	Morphology	High		High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	i e N/A	N/A	Compliant - no deterioration in quality element status anticipated
		1		1	Impacts on alamant screaned out at	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality

Table A.14: Sugar Brook (GB112069061350) detailed impact assessment - effects on current status

Sugar Brook (GB112069061350)										Detailed Impact Assessment Outcom	e	
Water body type: Hydromorphological designation:	River Not A/HMWB			ercourse (receptor value): e component (Unique ID):		Tributary of Sugar Brook (Moderate) n of existing culvert (GB112069061350-T-						
Overall Status (2015):	Moderate			on of scheme component:		Ashley Railhead footprint adjacent to exist		Cumulative effects - effects on				
Overall Status Objective:	Good by 2027			from scheme component:		, , , , ,		quality element from scheme	Overall effect on quality element at	Additional withingtion	Residual effect on quality element at	WFD compliance outcome - potentia
Overall Status (2019):	Moderate						Changes to water body hydromorphology leading to changes	component(s) located in other WFD	water body scale	Additional mitigation requirements	water body scale	for deterioration of current status of quality element at water body scale
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Footprint	Shading	in river processes and habitats upstream and downstream	water bodies				quanty clement at water body scale
	Fish	N/A	N/A	N/A	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality element status anticipated
					at the water body scale. Additional mitigation not required.	at the water body scale. Additional mitigation not required.	element anticipated. Additional mitigation not required.		element anticipated at water body scale. Additional mitigation not required. Localised adverse effect anticipated			
Biological	Macroinvertebrates	Good	Good by 2015	High	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	Moderate	Good by 2027	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	рН	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Physicochemical	Phosphate	Moderate	Good by 2027	Moderate	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Ammonia	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	None	Negligible effect anticipated when when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	High	N/A	N/A	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality
	Quantity and dynamics of water flow				preliminary assessment stage. Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage. Impacts on element screened out at preliminary assessment stage.	preliminary assessment stage. Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	preliminary assessment stage. Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	element status anticipated Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	NA	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	River depth and width variation				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bed				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated

Table A.15: Bollin (River Dean to Ashley Mill Bollin (River Dean to Ashley Mill) (GB1120690613	(GB112069061381) detailed impact assessme 81)	ent - effects on current s	status		Detailed Impact Assessment										
Water body type:	River			ercourse (receptor value):	River Bollin Offline Bridge Widening	River Bollin (Very High)	River Bollin East Viaduct				River Bollin 2		MEG Fact Turnel (CB112000001281 T	-	River Bollin 3
Hydromorphological designation:	Not A/HMWB		Scheme	e component (Unique ID):	(GB112069061381-MW-01-UB-01)	Highway Drainage Outfalls M56 (GB112069061381-MW-01-HD-01)	(GB112069061381-MW-01-VD-01)	Tributary of River Bollin 2 Realign	nment (GB112069061381-T-02-RE-01)	Tributary of Riv	er Bollin 2 Offline culvert (GB11206906	1381-T-02-CV-01)	M56 East Tunnel (GB112069061381-T- 02-BT-01)	Tributary of River Bollin 3 Realign	ment (GB112069061381-T-03-RE-02)
Overall Status (2015):	Moderate		Descriptio	on of scheme component:	River Bollin Offline Bridge Widening North River Bollin Offline Bridge Widening South	Road drainage outfalls from MS6. Three drainage outfalls from MS6 junction changes fail HEWRAT assessment, but passed further metal bioavailability assessment resulting in minor localised affect	A 100.0m long viaduct comprising 1x 21.3m span and 1 x 32.4m span and 1x25.m span, up to a max. height of 12.3m.	Apprax 6	54m length		Approx length = 96m		133m long box structure Up to a maximum depth of 11m	Approx 22.	2m length
Overall Status Objective: Overall Status (2019):	Moderate by 2015 Moderate		Impact type f	from scheme component:		Drainage (changes in water quantity			Changes to water body			Changes to water body	Changes in flow velocity and volume		Changes to water body
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Shading	or quality due to discharge of surface water runoff to surface water body);	Shading	Footprint	hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	Shading	hydromorphology leading to changes in river processes and habitats upstream and downstream	/ Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	hydromorphology leading to changes in river processes and habitats upstream and downstream
	Fish	Moderate	Good by 2027	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable charge in quality element anticipated. Additional mitigation not required.		Localised adverse effect anticipated when balanced against embedded mitigation. Hower, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
Biological	Macroinvertebrates	N/A	N/A	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Macrophytes and Phytobenthos - combined	N/A	N/A	Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration is status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Dissolved oxygen	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation, However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	рн	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.
Physicochemical	Phosphate	Poor	Moderate by 2027	Poor		Element is insensitive to impact. No measurable change to quality element.		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.		Element is insensitive to impact. No measurable change to quality element.		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.
	Ammonia	Poor	Good by 2027	Moderate		Element is insensitive to impact. No measurable change to quality element.	measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.		measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.
	Temperature	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.		Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No	
Specific Pollutants	Copper, Triclosan, Zinc	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.
	Quantity and dynamics of water flow				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.				Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.		Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Connection to groundwater bodies				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.		Element is insensitive to impact. No measurable change to quality element.			Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element.	
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.		Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	River depth and width variation				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Structure and substrate of the river bed				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Structure of the riparian zone				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.		Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.

Table A.15: Bollin (River Dean to Ashley Bollin (River Dean to Ashley Mill) (GB1120690	Mill) (GB112069061381) detailed impact assess 61381)	ment - effects on curre	nt status										
Water body type:	River			ercourse (receptor value): e component (Unique ID):		ollin 3 M56 Drain Offline Culvert (GB112	060061291 T 02 CV 02)	Tributany of Biyos	r Bollin 3 M56 Offline Culvert (GB11206	0061281 T 02 CV 02)	M56 East Tunnel (GB112069061381-T-		River Bollin 5 ment (GB112069061381-T-03-RE-04)
Hydromorphological designation:	Not A/HMWB				Tributary of River B		009001381-1-03-CV-02)			9061381-1-03-CV-03)	03-BT-01) 133m long box structure		
Overall Status (2015): Overall Status Objective: Overall Status (2019): WFD Status Element	Moderate Moderate by 2015 Moderate WFD Quality Element	RBMP Cycle 2 2015 Status		on of scheme component: from scheme component: Status 2019	Footprint	Approx length = 8m Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	approx length = 298m Shading	Changes to water body hydromorphology leading to changer in river processes and habitats upstream and downstream	Up to a maximum depth of 11m Changes in flow velocity and volume / Changes to water body hydromorphology leading to changes in river processes and habitats	Approx 20 Footprint	5m length Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream
	Fish	Moderate	Good by 2027	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	when balanced against embedded mitigation. However, no deterioration	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipate at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	upstream and downstream Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
Biological	Macroinvertebrates	N/A	N/A	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Macrophytes and Phytobenthos - combined	N/A	N/A	Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Dissolved oxygen	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Negligible effect anticipated when balanced against embedded mitgation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	рН	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.
Physicochemical	Phosphate	Poor	Moderate by 2027	Poor	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.
	Ammonia	Poor	Good by 2027	Moderate	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.
	Temperature	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Element is insensitive to impact. No measurable change to quality element		Element is insensitive to impact. No	Element is insensitive to impact. No measurable change to quality element.
Specific Pollutants	Copper, Triclosan, Zinc	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.
	Quantity and dynamics of water flow				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deteriorationo in status of quality element anticipateed at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.		Element is insensitive to impact. No measurable change to quality element.	
	Connection to groundwater bodies				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipates at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Localised adverse effect anticipated when balanced against embedded mitigation, However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.			Element is insensitive to impact. No measurable change to quality element.
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipates at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Element is insensitive to impact. No measurable change to quality element.		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	River depth and width variation				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Structure and substrate of the river bed				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipateed at the water body scale. Additional mitigation not required.		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Structure of the riparian zone				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	measurable change to quality element.	in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.	measurable change to quality element.	measurable change to quality element
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.

Table A.15: Bollin (River Dean to Ashley Mill) (GB112069061381) detailed impact assessment - effects on	current status
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Bollin (River Dean to Ashley Mill) (GB112069061	II) (GB112069061381) detailed impact assessn 381)	I									Detailed Imp	act Assessment Outcome
Water body type: Hydromorphological designation:	River Not A/HMWB			ercourse (receptor value) e component (Unique ID)		er Bollin 6 Offline Culvert (GB11206906		River Bollin 6 Tributary of River Bollin 6 Realign	ment (GB112069061381-T-05-RE-05)	Thorns Green Cutting (GB112069061381-T-05-CU-01)		
Overall Status (2015):	Moderate		Descripti	on of scheme component		Approx length = 75m		Appro	x 22m	1km in length, with a maximum cutting depth of 11m and width of 76m.	Cumulative effects - effects on quality element from scheme	Overall effect on quality element at water
Overall Status Objective: Overall Status (2019):	Moderate by 2015 Moderate		Impact type	from scheme component			Changes to water body		Changes to water body	Changes in flow velocity and volume	component(s) located in other WFD water bodies	body scale
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Footprint	Shading	hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	hydromorphology leading to changes in river processes and habitats upstream and downstream	/ Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream		
	Fish	Moderate	Good by 2027	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could be deterioration in the status of the quality elemen at a water body scale. Requires consideration of additional mitigation and residual effect.
Biological	Macroinvertebrates	N/A	N/A	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could b deterioration in the status of the quality eleme at a water body scale. Requires consideration o additional mitigation and residual effect.
	Macrophytes and Phytobenthos - combined	N/A	N/A	Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitgation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitgation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could b deterioration in the status of the quality eleme at a water body scale. Requires consideration of additional mitigation and residual effect.
	Dissolved oxygen	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in statu of quality element anticipated at water body scale. Additional mitigation not required.
	рн	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurabl change to quality element.
Physicochemical	Phosphate	Poor	Moderate by 2027	Poor	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.
	Ammonia	Poor	Good by 2027	Moderate	Impacts on element screened out at preliminary assessment stage.		Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.		None	Element is insensitive to impact. No measurab change to quality element.
	Temperature	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Negligible effect anticipated when scheme component effects considered in combination No measurable change in quality element anticipated. Additional mitigation not required
Specific Pollutants	Copper, Triclosan, Zinc	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in statu of quality element anticipated at water body scale. Additional mitigation not required.
	Quantity and dynamics of water flow				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in statu- of quality element anticipated at water body scale. Additional mitigation not required.
	Connection to groundwater bodies				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Element is insensitive to impact. No measurable change to quality element.		Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in stat of quality element anticipated at water body scale. Additional mitigation not required.
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could b deterioration in the status of the quality eleme at a water body scale. Requires consideration o additional mitigation and residual effect.
	River depth and width variation				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could b deterioration in the status of the quality eleme at a water body scale. Requires consideration o additional mitigation and residual effect.
	Structure and substrate of the river bed				Localised adverse effect anticipated when balanced against embedded i mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in statt of quality element anticipated at water body scale. Additional mitigation not required.
	Structure of the riparian zone				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	preliminary assessment stage.	measurable change to quality element.		measurable change to quality element.	measurable change to quality element.	None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could b deterioration in the status of the quality eleme at a water body scale. Requires consideration additional mitigation and residual effect.
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminat assessment stage.

Detailed Impa	ct Assessment Outcome
e effects - effects on ment from scheme) located in other WFD ater bodies	Overall effect on quality element at water body scale
None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could be deterioration in the status of the quality element at a water body scale. Requires consideration of additional mitigation and residual effect.
None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could be deterioration in the status of the quality element at a water body scale. Requires consideration of additional mitigation and residual effect.
None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could be deterioration in the status of the quality element at a water body scale. Requires consideration of additional mitigation and residual effect.
None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.
None	Element is insensitive to impact. No measurable change to quality element.
None	Element is insensitive to impact. No measurable change to quality element.
None	Element is insensitive to impact. No measurable change to quality element.
None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.
None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.
None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.
None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.
None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could be deterioration in the status of the quality element at a water body scale. Requires consideration of additional mitigation and residual effect.
None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could be deterioration in the status of the quality element at a water body scale. Requires consideration of additional mitigation and residual effect.
None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.
None	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could be deterioration in the status of the quality element at a water body scale. Requires consideration of additional mitigation and residual effect.
None	Impacts on element screened out at preliminary assessment stage.

Hydromorphological designation: N Overall Status (2015): N Overall Status Objective: N Overall Status (2019): N WFD Status Element V	River Not A/HMWB Moderate Moderate by 2015 Moderate WFD Quality Element		Schem	ercourse (receptor value): le component (Unique ID):			
Vverall Status (2015): N Vverall Status Objective: N Vverall Status (2019): N VFD Status Element W	Moderate Moderate by 2015 Moderate			e component (Unique ID):		1	
verall Status Objective: N verall Status (2019): N IFD Status Element W	Moderate by 2015 Moderate						
Iverall Status (2019): N	Moderate			on of scheme component: from scheme component:		Residual effect on quality element at	WFD compliance outcome - potentia
	WFD Quality Element		impact type	from scheme component.	Additional mitigation requirements	water body scale	for deterioration of current status of quality element at water body scale
F		RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019			quanty element at water body scale
	Fish	Moderate	Good by 2027	Moderate	Additional mitigation for the footprint impacts of muliple culverts has been identified and is partially included in the design of realignments. However there is some uncertainty over how naturalised the realignments can be in this location and also how essential the smaller watercourses are for biological quality elements. Further investigations will be undertaken in consultation with the Environment Agency and other stakeholders, to identify appropriate mitigation measures to mitigate any significant effects on-hydromorphology from the cumulative imapct of culverts and road drainage. On a precautionary basis, until such time as these investigations are carried out, a residual significant effect will remain.	Widespread adverse effect anticipated until mitigation is confirmed. Potential deterioration in status of quality element at water body scale.	Non compliant - risk of deterioration from current status
- Siological N	Macroinvertebrates	N/A	N/A	Moderate	Additional mitigation for the footprint impacts of muliple culverts has been identified and is partially included in the design of realignments. However there is some uncertainty over how naturalised the realignments can be in this location and also how essential the smaller watercourses are for biological quality elements. Further investigations will be undertaken in consultation with the Environment Agency and other stakeholders, to identify appropriate mitigation measures to mitigate any significant effects on-hydromorphology from the cumulative imapct of culverts and road drainage. On a precautionary basis, until such time as these investigations are carried out, a residual significant effect will remain.	Widespread adverse effect anticipated until mitigation is confirmed. Potential deterioration in status of quality element at water body scale.	Non compliant - risk of deterioration from current status
N	Macrophytes and Phytobenthos - combined	N/A	N/A	Good	Additional mitigation for the footprint impacts of muliple culverts has been identified and is partially included in the design of realignments. However there is some uncertainty over how naturalised the realignments can be in this location and also how essential the smaller watercourses are for biological quality elements. Further investigations will be undertaken in consultation with the Environment Agency and other stakeholders, to identify appropriate mitigation measures to mitigate any significant effects on hydromorphology from the cumulative imapct of culverts and road drainage. On a precautionary basis, until such time as these investigations are carried out, a residual significant effect will remain.	Widespread adverse effect anticipated until mitigation is confirmed. Potential deterioration in status of quality element at water body scale.	Non compliant - risk of deterioration from current status
	Dissolved oxygen	High	Good by 2015	High	N/A	N/A	Compliant - no deterioration in quality element status anticipated
pysicochemical p	pH	High	Good by 2015	High	N/A	N/A	Compliant - no deterioration in quality element status anticipated
P	Phosphate	Poor	Moderate by 2027	Poor	N/A	N/A	Compliant - no deterioration in quality element status anticipated
1	Ammonia	Poor	Good by 2027	Moderate	N/A	N/A	Compliant - no deterioration in quality element status anticipated
т	Temperature	High	Good by 2015	High	N/A	N/A	Compliant - no deterioration in quality element status anticipated
pecific Pollutants C	Copper, Triclosan, Zinc	N/A	N/A	N/A	N/A	N/A	Compliant - no deterioration in quality element status anticipated
c	Quantity and dynamics of water flow				N/A	N/A	Compliant - no deterioration in quality element status anticipated
c	Connection to groundwater bodies				N/A	N/A	Compliant - no deterioration in quality element status anticipated
łydromorphological R	River continuity	Supports Good	Supports Good by 2015	Supports Good	Additional mitigation for the footprint impacts of culverts has been identified and is partially included in the design of realignments. However there is some uncertainty over how naturalised the realignments can be in this location. Further investigations will be undertaken in consultation with the Environment Agency and other stakeholders, to confirm the most appropriate mitigation measures to mitigate the combined effects of culverts on watercourses. On a precautionary basis, until such time as these investigations are carried out, a residual significant effect will remain.	Widespread adverse effect anticipated until mitigation is confirmed. Potential deterioration in status of quality element at water body scale.	Non compliant - risk of deterioration from current status
R	River depth and width variation				Additional mitigation for the footprint impacts of culverts has been identified and is partially included in the design of realignments. However there is some uncertainty over how naturalised the realignments can be in this location. Further investigations will be undertaken in consultation with the Environment Agency and other stakeholders, to confirm the most appropriate mitigation measures to mitigate the combined effects of culverts on watercourses. On a precautionary basis, until such time as these investigations are carried out, a residual significant effect will remain.	Widespread adverse effect anticipated until mitigation is confirmed. Potential deterioration in status of quality element at water body scale.	Non compliant - risk of deterioration from current status
s	Structure and substrate of the river bed				N/A	N/A	Compliant - no deterioration in quality
s	Structure of the riparian zone				Additional mitigation for the footprint impacts of culverts has been identified and is partially included in the design of realignments. However there is some uncertainty over how naturalised the realignments can be in this location. Further investigations will be undertaken in consultation with the Environment Agency and other stakeholders, to confirm the most appropriate mitigation measures to mitigate the combined effects of culverts on watercourses. On a precautionary basis, until such time as these investigations are carried out, a residual significant effect will remain.	Widespread adverse effect anticipated until mitigation is confirmed. Potential deterioration in status of quality element at water body scale.	element status anticipated Non compliant - risk of deterioration from current status
	Priority substances	Good	Good by 2015	Fail	N/A	N/A	Compliant - no deterioration in quality element status anticipated

Timperley Brook (GB112069061260)	River	ffects on current status	Vatercourse (receptor value					Detailed Impact Assessment	ey Brook 1 (Moderate)			Detailed Impact Assessment
Water body type:												
Hydromorphological designation:	HMWB	Sc	heme component (Unique	ID):	Offlin	e Culvert North (GB112069061260-T-01	-CV-01)	Offlin	e Culvert South (GB112069061260-T-01	-CV-02)	Realignment 1 (GB112	2069061260-T-01-RE-01)
Overall Status (2015):	Moderate	Des	cription of scheme compor	ient:		Approx length = 82m			Approx length = 8m			r loss of open channel under Manchester hting /removing existing culvert
Overall Status Objective: Overall Status (2019): WFD Status Element	Good by 2027 Moderate WFD Quality Element	Impa RBMP Cycle 2 2015 Status	ct type from scheme comp RBMP Cycle 2 Status Objective	onent: Status 2019	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	5 Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream
	Fish	N/A	N/A	N/A	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.
Biological	Macroinvertebrates	Moderate	Good by 2027	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.
	Macrophytes and Phytobenthos - combined	Moderate	Good by 2027	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	status anticipated at the water body scale.
	Dissolved oxygen	Good	Good by 2015	Good	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	рн	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.
Physicochemical	Phosphate	Moderate	Good by 2027	Moderate	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Element is insensitive to impact. No measurable change to quality element.
	Ammonia	Good	Good by 2015	Moderate	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Element is insensitive to impact. No measurable change to quality element.
	Temperature	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.
	Quantity and dynamics of water flow				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Connection to groundwater bodies				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.
	River continuity	Summer Cond	Surrente Good hu 2015	Surrents Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
Hydromorphological	River depth and width variation	- Supports Good	Supports Good by 2015	Supports Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Structure and substrate of the river bed				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Structure of the riparian zone				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Element is insensitive to impact. No measurable change to quality element.
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.

Timperley Brook (GB112069061260) Water body type:	River		/atercourse (receptor valu	e):		Tributary of	Timperley Brook 1 (Moderat	te)		
Hater body type.				-,-						
Hydromorphological designation:	НМИВ	Sci	heme component (Unique	ID):	Manchester Airport High Speed cutting and retaining wall north (GB112069061260-T-01-CU-01)	Highway Drainage - M56 East and West Link Realignment/ Access to Manchester Aiport High Speed Station/ Runger Lane Realignment	Realignment	: 2 (GB112069061260-T-01-RE-02)	Realignment 3	3 (GB112069061
Overali Status (2015):	Moderate	Des	cription of scheme compo	nent:	Manchester Airport High Speed cutting is approx. 255m in length, with a maximum of 15.5m cutting depth. The cutting will penetrate penetrate the glacial till and the Mercia Mudstone Group. The Manchester Airport High Speed cutting retaining wall north is 1.8km in length, all of which will be below ground level.	Road drainage outfall from M56 East and West Link Realignment/ Access to Manchester Aiport High Speed Station/ Runger Lane Realignment. Screened in for HEWRAT assessment though this shows that the proposed drainage design will provides dilution of the existing high background copper concentration.		FD mitigation for loss of open channel under includes daylighting /removing existing culvert	Approx 91m length WFD mitiga	ation for loss of a airport station
Overall Status Objective: Overall Status (2019):	Good by 2027 Moderate	Impac	ct type from scheme comp	onent:	-					
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Changes in flow velocity and volume / Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Drainage (changes in water quantity or quality due to discharge of surface water runoff to surface water body);	Footprint	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	Changes to a leading to cl habitats a
	Fish	N/A	N/A	N/A	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in staus of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised However, r status antici
Biological	Macroinvertebrates	Moderate	Good by 2027	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised However, r status antici
	Macrophytes and Phytobenthos - combined	Moderate	Good by 2027	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised However, r status antici
	Dissolved oxygen	Good			Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible ef against embe change in Addition
	рн	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element measurabl
Physicochemical	Phosphate	Moderate	Good by 2027	Moderate	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Element measurabl
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	Temperature	High	High Good by 2015 High		Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Negligible eff against ember change in Addition
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts o prelim
	Quantity and dynamics of water flow				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible eff against ember change in Addition
	Connection to groundwater bodies				Localised adverse effect anticipated when balanced against embedded mitigaton. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element measurab
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible ef against ember change in Addition
	River depth and width variation				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible eff against ember change in Addition
Struv	Structure and substrate of the river bed				Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible efi against ember change in Addition
	Structure of the riparian zone			Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Element measurab	
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Timperley Brook (GB112069061260) Water body type: Ri	River		Watercourse (receptor valu	ue):	Detailed Impact Assessment Outcome Timperfey Brook (Moderate)										
	HMWB		cheme component (Unique		Brooks	Drive Offline Culvert (GB11206906126)-MW-01-CV-03)	Realignment West (G	B112069061260-MW-01-RE-04)		B112069061260-MW-01-RE-05)	Field J	Access Culvert South (GB112069061260	-MW-01-CV-04)	
Overall Status (2015): M	Moderate	Des	scription of scheme compo	onent:	As	oprox length = 20m replacing assumed exist	ing culvert	Approx 136m length. WFD mitigation for loss of open channel under Manchester airport station		Approx. 193m length. WFD mitigation for loss of open channel under Manchester airport station		Approx length = 5m 2x Existing culverts to be moved to maintain access			
Overall Status (2019): M	Good by 2027 Moderate WFD Quality Element	Impa RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	
FI	Fish	N/A	N/A	N/A	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	against embedded mitigation. No measurable	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the wate body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigaton. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	
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D	Dissolved oxygen	Good	Good by 2015	Good	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.		against embedded mitigation. No measurable	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	
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Physicochemical	Phosphate	Moderate	Good by 2027	Moderate	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the wate body scale.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality element.	
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т	Temperature	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.			Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	
Specific Pollutants Co	Copper, Triclosan, Zinc	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.		Impacts on element screened out at preliminary assessment stage.	
٩	Quantity and dynamics of water flow				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	against embedded mitigation. No measurable	Localised beneficial effect anticipated. Bowever, no increase in quality element status anticipated at the wate body scale.	against embedded mitigation. No measurable	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	
c	Connection to groundwater bodies					Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additiona mitigation not required.	Element is insensitive to impact. No measurable change to quality element.		Impacts on element screened out at preliminary assessment stage.		
R. Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.		against embedded mitigation. No measurable	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	
	River depth and width variation				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.		against embedded mitigation. No measurable	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	
SI	Structure and substrate of the river bed				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.		against embedded mitigation. No measurable	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration is tatus of quality element anticipated at the water body scale. Additional mitigation not required.		Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quilty element anticipated. Additional mitigation not required.	
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Chemical Pi	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	

Water Wer Watercourse (receptor value): Image: component (Unique ID): Field Access Culvert North (GB112069061260-MW-01-CV-05) Timperly Brook (unverted Siphon under the station, rejoining the existing watercourse wes station. Siphon under the station, rejoining the existing watercourse wes station. Siphon expected to be approximately 170m in length, plus additional realignment of up to 120m. Overall Status (2015): Moderate Exercite Component: Approx length = 5m. Timperly Brook Culvert would be constructed as on inverted siphon under the station, rejoining the existing watercourse wes station. Siphon expected to be approximately 170m in length, plus additional realignment of up to 120m. Overall Status (2015): Moderate Imperly Brook Culvert would be constructed as on inverted siphon under the station, rejoining the existing watercourse wes station. Siphon expected to be approximately 170m in length, plus additional realignment of up to 120m. Overall Status (2015): Moderate Imperly Brook Culvert would be constructed as on inverted siphon under the station, rejoining the existing watercourse wes station. Siphon expected to be approximately 170m in length, plus additional realignment of up to 120m. Overall Status (2015): Moderate Footprint Shading Footprint Footprint Shading Footprint Shading Footprint Shading Footprint Shading Shading Footprint Shading Shading Imperly Brook Status 200 Yererow status and downst	mitigation for
HWWS Scheme component (Unique ID): Freid Access Luivert worth (GB112069041260-MW-01-L-01) (GB112069061260-MW-01-L-01) Overall Status (2015): Moderate Description of scheme component: Approx length = 5m 2x Existing culverts to be moved to maintain access Timperley Brook Culvert would be constructed as an inverted siphon under the station, rejoining the existing watercourse wes station. Siphon expected to be approximately 170m in length, plus additional realignment of up to 120m. Overall Status (2015): Good by 2027 Impact type from scheme component: Timperley Brook Culvert would be constructed as an inverted siphon under the station, rejoining the existing watercourse wes station. Siphon expected to be approximately 170m in length, plus additional realignment of up to 120m. Overall Status (2019): Moderate Moderate Changes to water body hydromorphology leading to changes in river processes and habitats ustreament advorstream of downstream of habitats ustreament advorstream of downstream of habitats ustreament advorstream of habitats ustreament advorstreament a	mitigation for
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Timperley Brook Realignment (GB112069061260-MW-01-RE-01)

ey Brook realigned (approx length 330m) downstream of Brooks Drive as offsite n for impact of inverted siphon. This will also provide a flood compensation area.

beneficial effect anticipated.	leading to changes in river processes and habitats upstream and downstream
ver, no increase in quality tatus anticipated at the water body scale.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.
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Timperley Brook (GB112069061260)	2069061260) detailed impact assessment - ef										
Water body type:	River		Natercourse (receptor valu		Manchester Airport High Speed Station Cutting	Highway Drainage - M56 East and West Link Realignment/ Access to Manchester Aiport High	-				
Hydromorphological designation:	HMWB	Sc	heme component (Unique	ID):	Retaining Wall (GB112069061260-MW-01-CU-01)	Speed Station/ Runger Lane Realignment (GB112069061260-MW-01-HD-01)	_				
Overall Status (2015):	Moderate	Des	cription of scheme compo	nent:	Manchester Airport High Speed cutting is approx. 255m in length, with a maximum of 15.5m cutting depth. The cutting will penetrate penetrate the glocial till and the Mercia Mudstone Group. The Manchester Airport High Speed cutting retaining wall north is 1.8km in length, all of which will be below ground level.	Road drainage outfall from M56 East and West Link Realignment/ Access to Manchester Aiport High Speed Station/ Runger Lane Realignment: Drains to timperley siphon. Fails HEWRAT assessment, but passed further metal bioavailability assessment resulting in minor localised effects.	Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	Overall effect on quality element at water body scale	e Additional mitigation requirements	Residual effect on quality element at water body scale	WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
Overall Status Objective: Overall Status (2019):	Good by 2027 Moderate	Impa	ct type from scheme comp	oonent:			1				
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Changes in flow velocity and volume / Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Drainage (changes in water quantity or quality due to discharge of surface water runoff to surface water body);					
	Fish	N/A	N/A	N/A	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	Additional mitigation for the effects of the siphon and highway drainage has now been embedded in the design at AP2. No further mitigation is required.	N/A	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	Moderate	Good by 2027	Moderate	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	Additional mitigation for the effects of the siphon and highway drainage has now been embedded in the design at AP2. No further mitigation is required.	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	Moderate	Good by 2027 Moderate		Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	Additional mitigation for the effects of the siphon and highway drainage has now been embedded in the design at AP2. No further mitigation is required.	N/A	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	Good	Good by 2015	Good	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	рН	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
hysicochemical Pł	Phosphate	Moderate	Moderate Good by 2027 Modera		Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Ammonia	Good	Good by 2015	Moderate	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by 2015	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	Additional mitigation for the effects of the siphon and highway drainage has now been embedded in the design at AP2. No further mitigation is required.	N/A	Compliant - no deterioration in quality element status anticipated
	Quantity and dynamics of water flow				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	Additional mitigation for the effects of the siphon and highway drainage has now been embedded in the design at AP2. No further mitigation is required.	N/A	Compliant - no deterioration in quality element status anticipated
	River depth and width variation				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Str	Structure and substrate of the river bed				Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone				Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated

Table A.17: Sinderland Brook (Fairywel Sinderland Brook (Fairywell Brook and Bag	ell Brook and Baguley Brook) (GB112069 guley Brook) (GB112069061270)	061270) detailed impac	ct assessment - effects o	n current status		Detailed Impact Assessment		Detailed Impact Assessment Outcome			
Water body type: R	River		Wate	ercourse (receptor value):		Mill Brook (Moderate)					
Hydromorphological designation:	HMWB		Schem	e component (Unique ID):	Manchester Tunnel GB112069061270- MW-03-BT-01 Altrincham Road Vent Shaft	Manchester Tunnel GB112069061270-T- 02-BT-01					
	Moderate		-	on of scheme component:	Consists of twin bored tunnels 12.8km in length, 7.55m internal diameter, and max. 43.0m deep. There are 37 cross passages. Altrincham Road Vent Shaft has a 24.0m internal diameter and is up to 48.6mbgl	Consists of twin bored tunnels 12.8km in length, 7.55m internal diameter, and max. 43.0m deep. There are 37 cross passages.	Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element at water body scale	WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
	Good by 2027 Moderate		Impact type	from scheme component:		Impacts from bored tunnel are					
	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Changes in flow velocity and volume	scoped out of detailed impact assessment at Preliminary Assessment stage, unless flagged as a risk in Groundwater WFD assessment					
F	Fish	N/A	N/A	N/A	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Biological N	Macroinvertebrates	N/A	N/A	Poor	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	N/A	N/A in 2015	N/A	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	High	Good by 2015	High	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	N/A	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
p Physicochemical	рН	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
-	Phosphate	Moderate	Good by 2027	Poor	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
ļ	Ammonia	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
т	Temperature	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants C	Copper, Triclosan, Zinc	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	N/A	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
c	Quantity and dynamics of water flow				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.		N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
c	Connection to groundwater bodies				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
F	River depth and width variation			mi	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
S	Structure and substrate of the river bed				Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
5	Structure of the riparian zone		Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated		
						Impacts on element screened out at					

Table A.18: Mersey (upstream of Manchester Ship Canal) (GB112069061030) detailed impact assessment - effects on current status

Mersey (upstream of Manchester Ship C) detailed impact assess				Detailed Impact Assessment				Detailed Impact Assessment Outcom	e	
Water body type:	River HMWB			ercourse (receptor value)	Manchester Tunnel GB112069061030-		Mersey 2 (Moderate)					
Hydromorphological designation: Overall Status (2015):	Moderate			e component (Unique ID): on of scheme component:	MW-01-BT-01 Consists of twin bored tunnels 12.8km in	Consists of twin bored tunnels 12.8km in i 43.0m deep. There are 37 cross passages. I		Cumulative effects - effects on				WFD compliance outcome - potential
Overall Status Objective:	Moderate by 2015		Impact type	from scheme component:	43.0m deep. mere dre 37 cross pussages.	internal atometer at		quality element from scheme component(s) located in other WFD	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element at water body scale	for deterioration of current status of
Overall Status (2019):	Moderate WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Impacts from bored tunnel are scoped out of detailed impact assessment at Preliminary Assessment stage, unless flagged as a risk in Groundwater WFD assessment	in river processes and habitats	Changes in water quality due to discharge of groundwater to surface water body	water bodies				quality element at water body scale
	Fish	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	N/A	N/A	N/A	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Element is insensitive to impact. No measurable change to quality element.	N/A	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	рН	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Physicochemical	Phosphate	Poor	Poor by 2015	Poor	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Ammonia	Good	Good by 2015	Good	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by 2015	High	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Quantity and dynamics of water flow				Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies				Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Rivi	River depth and width variation				Impacts on element screened out at preliminary assessment stage.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bed					Element is insensitive to impact. No measurable change to quality element.	to impact. No Impacts on element screened out at N/A	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone				Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	N/A	Element is insensitive to impact. No measurable change to quality element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Chemical	Priority substances	Good	Good by 2015	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	N/A	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated

Table A.19: Fallowfield Brook (GB112069061410) detailed impact assessment - effects on current status

Fallowfield Brook (GB112069061410)										Detailed Impact Assessment Outcom	ne	
Water body type:	River		Wat	ercourse (receptor value):		Cringle Brook (Moderate)						
Hydromorphological designation:	HMWB		Schem	e component (Unique ID):		hester Tunnel GB112069061410-MW-0		Cumulative effects - effects on				
Overall Status (2015):	Moderate			on of scheme component:	Consists of twin bored tunnels 12.8km in	length, 7.55m internal diameter, and max.	. 43.0m deep. There are 37 cross passages.	quality element from scheme	Overall effect on quality element at		ts Residual effect on quality element water body scale	WFD compliance outcome - potential
Overall Status Objective:	Good by 2027		Impact type	from scheme component:				component(s) located in other WFD		Additional mitigation requirements		for deterioration of current status of
Overall Status (2019):	Moderate					oped out of detailed impact assessme		water bodies			water body scale	quality element at water body scale
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	unless fl	agged as a risk in Groundwater WFD a	issessment	water boules				
	Fish	N/A	N/A	N/A	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	N/A	N/A	Moderate	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	N/A	N/A	N/A	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	High	Good by 2015	High	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	рН	High	Good by 2015	High	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
Physicochemical	Phosphate	Moderate	Good by 2027	Moderate	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Ammonia	Good	Good by 2015	High	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by 2015	High	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Quantity and dynamics of water flow				-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies]			-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	River continuity]			-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River depth and width variation	Supports Good	Supports Good by 2015	Supports Good	-			None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bed	1			-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone	1			-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated
Chemical	Priority substances	Good	Good by 2015	Fail	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated

Platt Brook (Source to Fallowfield Br	rook) (GB112069061060)												Detailed Impact Assessment Outcom	e	
Water body type:	River		Wate	ercourse (receptor value):		Fallowfield Brook (Moderate)			Gore Brook (Moderate)						
Hydromorphological designation:	HMWB		Schem	e component (Unique ID):	Ma	anchester Tunnel GB112069061060-MW-01	-BT-01	Man	hester Tunnel GB112069061060-MW-0	03-BT-01	Cumulative effects - effects on				
Overall Status (2015):	Moderate				Consists of twin bored tunnels 12.8km	in length, 7.55m internal diameter, and max.	43.0m deep. There are 37 cross passages.	Consists of twin bored tunnels 12.8km in	length, 7.55m internal diameter, and ma	x. 43.0m deep. There are 37 cross passages.	quality element from scheme	Overall effect on quality element at		Residual effect on quality element	WFD compliance outcome - potent
Overall Status Objective:	Good by 2027		Impact type	from scheme component:				-			component(s) located in other WFD		Additional mitigation requirements	water body scale	for deterioration of current status
Overall Status (2019):	Moderate				Im	pacts from bored tunnel are scoped out	of detailed impact assessment at Preli	minary Assessment stage unless flagge	d as a risk in Groundwater WED asse	ssment	water bodies	water body scale		water body scale	quality element at water body sca
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019		paces nom borea canner are scoped out					inder bolies				
	Fish	N/A	N/A	N/A	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
Biological	Macroinvertebrates	Bad	Good by 2027	Bad	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
	Macrophytes and Phytobenthos - combined	Good	Good by 2015	Good	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
	Dissolved oxygen	High	Good by 2015	High	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
Physicochemical	рН	High	Good by 2015	High	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
	Phosphate	Poor	Good by 2027	Poor	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
	Ammonia	Moderate	Good by 2027	Good	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
	Temperature	High	Good by 2015	High	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
	Quantity and dynamics of water flow					-	-		-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
	Connection to groundwater bodies]			-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
Hydromorphological	River continuity	Supports Good	Supports Good by 2015	Supports Good	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
Hydromorphological	River depth and width variation	Supports Good	Supports Good by 2015	Supports Good	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
	Structure and substrate of the river bed]				-	-	-	-		None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
S	Structure of the riparian zone]			-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated
Chemical	Priority substances	Good	Good by 2015	Fail	-	-	-	-	-	-	None	None	N/A	None	Compliant - no deterioration in quali element status anticipated

	well) (GB112069061152) detailed impact a	assessment - effects on (current status												
Medlock (Lumb Brook to Irwell) (GB112069 Water body type:	River		Wat	ercourse (receptor value):			Detailed Impac River Medic						Detailed Impact Assessment Outcome		
Hydromorphological designation:	нмwв		Schem	ne component (Unique ID):	Piccadilly Approach Viaduct (GB112069061152-MW-01-VD-01)	Fairfield Street Offline Overbridge (GB112069061152-MW-01-OB-01)		Daylighting of existing culvert	(GB112069061152-MW-01-DY-01)						
Overall Status (2015):	Moderate		Descripti	ion of scheme component:	A 420.0m long post tensioned voided RC deck, varying in width from 25.0m to 47.0m before reducing to two 12.7m wide viaducts as it enters the station structure.				ch Viaduct, in conjunction with creating flood prcourse	l compensation areas adjacent to the	Cumulative effects - effects on quality element from scheme component(s) located in other WFD	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element a water body scale	for deterioration of current status o
Overall Status Objective: Overall Status (2019):	Moderate by 2015 Moderate		Impact type	from scheme component:			Changes to water body				water bodies				quality element at water body scale
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Shading	Shading	hydromorphology leading to changes in river processes and habitats upstream and downstream	Shading	Footprint	Creation of new habitats					
	Fish	Poor	Moderate by 2027	Poor	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	l. er None	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	NA	N/A	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	Moderate	Good by 2021	Moderate	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	None	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	NA	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	Moderate	Moderate by 2015	Moderate	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	l er None	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.		N/A	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	High	Good by 2015	High	Negligible effect anticipated when balancec against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	d Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	2 NA	N/A	Compliant - no deterioration in quality element status anticipated
	рН	High	Good by 2016	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element		Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element	NA	N/A	Compliant - no deterioration in quality element status anticipated
Physicochemical	Phosphate	Poor	Poor by 2015	Poor	Element is insensitive to impact. No measurable change to quality element.		Element is insensitive to impact. No measurable change to quality element.			Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element	. NA	N/A	Compliant - no deterioration in quality element status anticipated
	Ammonia	Moderate	Good by 2027	High	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element.	Element is insensitive to impact. No measurable change to quality element		Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element	. NA	N/A	Compliant - no deterioration in quality element status anticipated
	Temperature	High	Good by 2015	Good	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	L Element is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	L Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	e NA	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.		None	Impacts on element screened out at preliminary assessment stage.	NA	N/A	Compliant - no deterioration in quality element status anticipated
	Quantity and dynamics of water flow				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Localised beneficial effect anticipated However, no increase in quality	None	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	NA	N/A	Compliant - no deterioration in quality element status anticipated
	Connection to groundwater bodies				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.		Element is insensitive to impact. No measurable change to quality element	L. None	Element is insensitive to impact. No measurable change to quality element	NA	N/A	Compliant - no deterioration in quality element status anticipated
	River continuity	-			Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Localised beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.	Impacts on element screened out at preliminary assessment stage.		Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	Nopo	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	NA	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River depth and width variation	Supports Good	Supports Good by 2027	Supports Good	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	Nees	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	NA	N/A	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bed				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	Nono	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	NA	N/A	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Impacts on element screened out at preliminary assessment stage.		Localised beneficial effect anticipated However, no increase in quality element status anticipated at the wate body scale.	None	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	NA	N/A	Compliant - no deterioration in quality element status anticipated
Chemical	Priority substances	N/A	N/A	Fail	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.		Impacts on element screened out at preliminary assessment stage.		None	Impacts on element screened out at preliminary assessment stage.	NA	N/A	Compliant - no deterioration in quality element status anticipated

Table A22: Weaver and Dane Quaternary Sand and Gravel Aquifers (GB1202G991700) detailed impact assessment - effects on current status Weaver and Dane Quaternary Sand and Gravel Aquifers (GB1202G991700) detailed Impact Assessment (GB1202G991700) (Secondary aquifer (undifferentiated)) Detailed Impact Assessment Detailed Impact Assessment EA Management Catchment: North West GW Scheme component (ID): GB41202G991700-TP-01 GB41202G991700-TP-01		Detailed Impact Assessment Detailed Impact Assessment Detailed Impact Assessment Detailed Impact Assessment GB41202G991700-CR-06 GB41202G991700-C-08 GB41202G991700-OF-09 GB41202G991700-VF	t Detailed Impact Assessment YF-14 GB41202G991700-RT-15 GB41202G991700- VF-16 GB41202G991700-RT-18 GB41202G991700-VF 19 GB41202G991700-VF VF-22	Detailed Impact Assessment Detailed Detailed Impact Impact Detailed Impact Assessment Assessment Assessment Assessment GB41202G991700-RT-26 GB41202G9917 GB41202G9917 00-VF-27 00-OF-30 GB41202G991700-ST-31	Detailed Impact Assessment Detailed Impact Assessment Detailed Impact Assessment Detailed Impact Assessment <th< th=""></th<>
Overall Status (2015): Poor Scheme component type: Tunnel Portal Bored Tunnel Scheme component name: Crewe Tunnel South porous portal Crewe Tunnel	Vent shaft Vent shaft Cowley Way vent shaft Middlewich Street vent shaft	Cutting with retaining structure Cutting Overbridge Foundations Viaduct Foundation Crewe North portal (retained cutting) Coppenhall Moss cutting Footpath Crewe 29/1 overbridge Warmingham Moss southbound approarviaduct No.1	Image: second	Network Network Niaduct Overbridge Retaining Wall Viaduct Foundations Overbridge Foundations Station/Depot Warmingham Moss northbound box structure Warmingham Moss Footpath Minshull Northbound approach Footpath Minshull Vernon 8/1 accommodatio	ActionActio
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Overall St (2015):	atus Poor	Scheme compo	nent type: Retaining Wal	ill Re	etaining Wall	Retaini	ing Wall	Bo	rrow Pit	Retaining Wall	Highways Drainag Discharge	Yiaduct Foundations	VIADUCT FOUNDATIONS	Viaduct V oundations	Viaduct Foundations Viaduct Foundations	Highways Drainage discharge	Dverbridge Foundation Viaduct F	oundations Viaduct Foundation:	s Viaduct Foundations		Highways Viaduct Drainage Foundations discharge	Retaining Wall	R	Retaining Wall	Cutting with retai	ning structure	discharge to ground (offline drain) - construction only	Cutting with retaining structure	Overbridge Highways Drainage Foundations discharge
		Scheme compone	ent name: Clive Green North c	cutting Clive Green North	embankment retaining wall	Middlewich b	box structure	MA02 Cohe	sive Borrow Pit C	Stanthorne South embankment retain	ng wall A54 Middlewich Roa	ad A54 Middlewich Roac viaduct	River Dane Viaduct	uddinglake Tre rook viaduct	rent and Mersey Canal viaduct Gad Brook viaduct	Highways drainage discharge from realigned A556 Shurlach Road into Broken Cross Drains	Wade Brook offline	ook viaduct Lostock Gralam viadu	uct Smoker Brook viaduct	Arley Brook viaduct M	l6 realignment M6 Mere viaduct	Hoo Green South embankm retaining wall	ient No.2 Hoo	o Green viaduct	Hoo Green No	orth cutting	A556 (Chapel Lane Drain)	Hoo Green West cutting	A50 overbridge Highways drainage realigned A6144 Paddock lane into A6144 Field Drains
Overall St Objective WFD State	: Good by 20	2015 RBMP Cvcle 2	2019 Lowering of groundwater levels and potential reduction in groundwater contributions to surface groundwater contributions to surface groundwater	"Damming" of groundwater level and potential reduction in "Damming" of undwater flow and reduction in surface water bodie groundwater GWDTE or	"Damming" of groundwater flow and reduction in groundwat	ter groundwater	groundwater flow and reduction in groundwater	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions	"Damming" of groundwater flow and reduction in groundwater contributions	Lowering of groundwater levels and potential reduction in groundwater v contributions to surface water bodies, GWDTE or groundwater	flow and bundwater	"Damming" of groundwater flow an reduction in groundwater	d "Damming" of groundwater flow and reduction in groundwater contributions	flow and eduction in	"Damming" of "Damming" of roundwater flow and groundwater flow reduction in and reduction in groundwater groundwater		groundwater flow groundwater	ning" of "Damming" of vater flow groundwater flow uction in and reduction in dwater groundwater	•	"Damming" of groundwater flow and reduction in groundwater		groundwater contributions to surface water bodies, GWDTE or groundwater	flow and duction in groundwater	els and ion in r "Damming" of urface groundwater flow an DTE or reduction in	Lowering of groundwater level and potential reduction in groundwater contributions to surface water bodies, GWDTE o groundwater abstractions by	"Damming" of groundwater flow and reduction in groundwate	p	owering of groundwater levels and potential reduction in groundwater "Damming contributions to surface water groundwater bodies, GWDTE or groundwater reduction abstractions by temporary groundwa	low and in flow and ter reduction in
Element	Element	Cycle 2 Status Status Objective	e temporary dewatering/permanent groundwater control	contributions groundwater abstractions by temporary dewatering/perman t groundwater cont		abstractions by temporary dewatering/permanent groundwater control	contributions	by temporary dewatering/permanent groundwater control		abstractions by temporary dewatering/permanent groundwater control	1015	contributions	0	oundwater	contributions contributions		contributions contri	butions contributions	contributions	contributions	contributions	abstractions by	ntributions dewatering/perma groundwater con	anent	temporary dewatering/permane groundwater control	nt contributions	de	ewatering/permanent groundwater contribut control	groundwater ons contributions
	Quantitati Saline Intro	tive rusions Good by 2015	Good lead to damming. If additional excavation, grouting and control and additional excavation, grouting and	sed subsidence due solution within the adjacent to the area s scheme component. There is a history of localised subsidence of limited spatial extent vill not lead to ning. If additional ration, grouting and component. No	walls will be of limited spatial extent and will no lead to damming. If	t localised subsidence due to dissolution within the fields adjacent to the area of this scheme component. However, this retaining walls will be of limited spatial extent and will not lead to damming. If	localised subsidence due to dissolution within the fields adjacent to the area of this scheme component. However, this retaining walls will be of limited spatial extent and will not lead to damming. If	No measurable changes from saline intrusions due to scale of works and shallow depth of borrow pit relative to water	No measurable changes from saline intrusions due to scale of works and shallow depth of borrow pit relative to water body scale	component. No additional exca	nce due to n the fields irea of this ent. taining mited d will not g. If ation,	additional excavation,	subsidence due to dissolution within the fields adjacent to the area of this scheme component. However, piling will be of limited spatial extent and will not lead to damming. If additional excavation, grouting and reinforcement are	nges from No ne intrusions from to scale of due	o measurable changes om saline intrusions ie to scale of works lative to water body ale.		No measurable change due to embedded mitigation - i.e. no or minimal dewatering required.	le to	No measurable changes from saline intrusions	embedded mitigation	embedded mitigation - i.e. no or minimal dewatering/permar	No measurable change char due to embedded emb mitigation - i.e. no or mitig minimal no o dewatering/permanent dew. groundwater control aner	ate to embedded gation - i.e. mitigation - i.e. no or r minimal minimal atering/perm dewatering/permane	nge No measurable change due to embedded or mitigation - i.e. no or minimal nent dewatering/permanent		retaining walls are to be built along the entire length of the Hoo Green cuttings which will give an increased risk of groundwater flooding. However, land	n gri mi I Int Pe ari th	he temporary dewatering will disrupt roundwater levels but will have no no measurable change on saline trrusions. ermanent secant piled retaining walls re to be built along the entire length of built along the ethor he Hoo Green cuttings thereby	hdwater No measurable hange on change due to embedded ht piled mitigation - i.e. re to be no or minimal htire dewatering/perm
			required, these are not expected to occur in water bearing strata. These are unlikely to impact water body status.	status.	required, these are not expected to occur in wate bearing strata. These are unlikely to impact water body status.	are required, these are not expected to occur in water bearing strata. These are unlikely to impact water body status.	are required, these are not expected to occur in water bearing strata. These are unlikely to impact water body status.			dewatering is ancipated during construction. grouting and re are required, th expected to occ bearing strata. unlikely to impa body status.	ese are not ir in water hese are it water	reinforcement are required, these are not expected to occur in water bearing strata. These are unlikely to impact water body state	These are unlikely to impact water body status.	le.	required.					control required.	ent groundwater control required.	required. grou	ndwater required. rol required.		Ithereby significantly reducing the	The temporary dewatering	Sig	ignificantly reducing the requirement cuttings thereby significantly reduced requirement for dewatering.	cing the control required.
	Quantitati Water Bala	tive Good by Jance Good by	to dissolution within the fields adjacent to the area of this scheme component. However, this cuttings will be of limited spatial extent and will not	sed subsidence due solution within the adjacent to the area s scheme component. There is a history of ever, this cuttings will localised subsidence of	adjacent to the area of th scheme component. However, this retaining walls will be of limited spatial extent and will not lead to damming. If additional excavation	adjacent to the area of this scheme component. However, this retaining walls will be of limited spatial extent and will not lead to damming. If	adjacent to the area of this scheme component. However, this retaining walls will be of limited spatial extent and will not lead to damming. If	No measurable changes on quantitative water balance due to scale of works and shallow	No measurable changes on quantitative water balance due to	Itields adjacent to the area Ispatial extent a	ence due to n the fields irea of this ent. taining mited d will not	of this scheme component. However, piling will be of limited spatial extent and will n lead to damming. If additional excavation	and the set of the set	anges on antitative ter balance e to scale of	change due to quantitative water alance due to scale of prks relative to water		change due to embedded mitigation a i e po or minimal	irable No measurable je to changes on d quantitative water i - i.e. no or balance due to scale d	on quantitative water balance due to scale of works relative to water	embedded mitigation - i.e. no or minimal	embedded mitigation - i.e. no or minimal	No measurable change char due to embedded emb mitigation - i.e. no or mitig minimal no o dewatering/nermanent dew	ge due to No measurable chan edded due to embedded gation - i.e. mitigation - i.e. no or r minimal minimal	nge No measurable change due to embedded or mitigation - i.e. no or minimal dewatering /permanent	The temporary dewatering will disrupt groundwater levels but will have no measurable change on water balance. Permanent secant piled retaining t walls are to be built along the entir	of the Hoo Green cuttings which will give an increased risk of groundwater	l Pe are	he temporary dewatering will disrupt roundwater levels but will have no neasurable change on water balance. ermanent secant piled retaining walls reto be built along the entire length of	hdwater ill have hange on change due to embedded nt piled mitigation - i.e. re to be no or minimal
			grouting and reinforcement are required, these are not expected to occur in water bearing strata. These are unlikely to impact water body status.	dewatering is ancipate red, these are not tted to occur in water ng strata. These are	ed grouting and	expected to occur in water bearing strata. These are unlikely to impact water	are required, these are not expected to occur in water bearing strata. These are unlikely to impact water	water body scale.	body scale.	component. No additional exca dewatering is ancipated during construction. grouting and re are required, th expected to occ bearing strata. unlikely to impa body status.	nforcement ise are not ir in water hese are it water	anauting and	required, these are not expected to wal occur in water bearing strata. sca These are unlikely to impact water body status.	ter body le.	in in a contract of the second s		dewatering required.	ewatering works relative to wate body scale.	body scale.	nt groundwater control required.	dewatering/permar ent groundwater control required.	giou	it groundwater control ndwater required. rol required.	requireu.	length of the Hoo Green cuttings thereby significantly reducing the requirement for dewatering.	flooding. However, land drains have been included on the upgradient side of the route of the Proposed Scheme. Therefore, the land drainage will ensure that there is no measurable change in risk of groundwater flooding.	th	ignificantly reducing the requirement cuttings thereby	o Green anent groundwater cing the control required.
Quantitat			None present within areas None	None present within	None procept within area	as None present within areas	None procept within proce			None present within areas None present v	thin areas	None present within	It is currently unclear to what extent the River Dane, Bostock LWS and Bull's Wood and Meadow LWS and ancient woodland are supported by groundwater. If additional construction options are required to mitigate and stabilise the unstable ground conditions,	The gro pile Tre viac pot gro	e permanent below ound features, such as led foundations of the ent and Mersey Canal aduct, have the otential to locally alter oundwater flow in the perficial and bedrock				The permanent below ground features, such as piled foundations of the Smoker Brook viaduct, have the potential to locally alter groundwater flow in the	features, such as piled foundations of the Arley Brook viaduct, have the potential to locally alter groundwater flow in the superficial	None present		neasurable ge due to No measurable chan edded due to embedded		The radius of influence of the cutti	ng			None present
	Dependent Terrestrial Ecosystem: (GWDTE) Te	nt Good by 2027	Good subsidence or in close proximity down-hydraulic proxim	areas with history of localised dence or in close	with history of localised subsidence or in close proximity down-hydraulio	with history of localised subsidence or in close c proximity down-hydraulic	with history of localised subsidence or in close	close proximity down-	proximity down-hydraulic gradien	with history of localised subsidence or in close proximity down-hydraulic gradient of ROI.	calised close hydraulic	areas with history of localised subsidence or close proximity down-	groundwater flow to thesewitihabitats. Embedded mitigationclosdoes not account for suchdowcomponents and therefore closergraassessment is required onceconstruction options areconfirmed. Oak Clump ancientwoodland is located upgradient ofthe Proposed Scheme hence iswiti	hin or in aqu se proximity Wh wn-hydraulic We dient of ROI. Due min with are, gro	None present within or in close proximity down-hydraulic gradient of ROI. gradient of ROI.		None present within None pre or in close proximity or in close down-hydraulic down-hyd gradient of ROI. gradient of	raulic down-hydraulic	or aquifers. Due to the location and minor extent of the piers within the much larger	and bedrock aquifers. Due to the location and minor extent of the piers within the much larger area of the aquifers, no measurable change to groundwater flow	within or in close proximity down- hydraulic gradient of ROI.	mitigation - i.e. no or mitig minimal no o dewatering/permanent dew. groundwater control aner	ation - i.e. mitigation - i.e. no or r minimal minimal atering/perm dewatering/permane	or mitigation - i.e. no or minimal	Lane, Yew Tree Farm, A50 which supports undesignated habitat. Localised impacts on this habitat a	None present within or in close proximity down- hydraulic gradient of ROI.		lone present within or in close None present within or in close roximity down-hydraulic gradient of OI. None present with hydraulic gradient of hydraulic	hin or in within or in close
								During dewatering and excavation of the cohesive borrow pit, groundwater levels in proximity to spring at pond 100m east of Beckett Avenue,	headwaters of Tributary of River				stru the obs	ow ground uctures have potential to struct	elow ground structures		Wade Brook offline overbridge crosses the Wade Brook and has the potential to impact baseflow. impact baseflow.	e crosses Brook and otential to	are expected.		Tributary of Tabley Brook 4 is crossed by the Proposed Scheme and Tributary of Tabley	struc pote disru	retaining :ture has the ntial to .pt ndwater		The radius of influence of the cuttin includes potential spring at Dobb Lane, Yew Tree Farm, A50 which supports undesignated habitat and feeds into Tributary of Millington	Tributaries of Millington Clough 1 to 4 are crossed by the Proposed Scheme	inc Ye un	he radius of influence of the cutting Includes potential spring at Dobb Lane, ew Tree Farm, A50 which supports Indesignated habitat and feeds into ributary of Millington Clough 1. Minor	scheme ndwater
	Quantitati Dependent Surface Wa Body	nt Good Good by	proximity down-hydraulic proxim	areas with history of localised dence or in close	with history of localised subsidence or in close	subsidence or in close proximity down-hydraulic	with history of localised subsidence or in close	Clive are likely to be reduced. However, as dewatering abstraction will be discharged to the Tributary of River Wheelock 5, upstream of spring at pond 100m east of Beckett Avenue, Clive which will mitigate this impact leading, no measurable	Wheelock 5, to which baseflow will be reduced leading to a temporary minor impact. However, dewatering abstraction will be discharged to the Tributary of River Wheelock 5, upstream of	None present within areas None present v with history of localised with history of localised subsidence or in close subsidence or i proximity down-hydraulic gradient of ROI.	calised close hydraulic	None present within areas with history of localised subsidence or close proximity down- hydraulic gradient of R0	the viaduct may obstruct groundwater flow towards the River Dane. This is likely to be highly localised and may cause localised increases and decreases in the baseflow to the river over approximately 1km. These localised changes will balance each other and overall there is	ddinglake obs bok. Due to flow location and puc nor extent of piers within much larger a of the area	ave the potential to ostruct groundwaterViaduct intersectsby towardsGad Brook anduddinglake Brook. Due the location andTributary of Gadinor extent of the piers thin the much larger ea of the aquifers, no easurable change tomitigation - i.e. no or minimal dewatering		Groundwater flow in Groundw the superficial the super deposits is likely to follow topography follow top	ater flow in ficial s likely to ography None present within o ography course. down-hydraulic gradient of ROI.	Brook viaduct have the potential to obstruct groundwater flow	the potential to obstruct groundwater flow towards Waterless/Arley Brook. These effects are likely to be highly localised and overall	Brook 6 and 8 are present within the immediate vicinity of the viaduct. No measurable change expected as Tributary of Tabley Brook 4 is located upgradient of the	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	to the utary of ey Brook 9. ever, no surable initigation - i.e. no or minimal	or flow to tributaries of Tabley Brook, However nent no measurable change	Clough 1. Minor localised impact o surface water flow is likely. Tributaries of Millington Clough 1 t 4 are located within the radius of influence of the cutting thus will likely receive reduced baseflow. Scheme drainage will discharge to the tributaries of Millington Clough	 flow to these watercourses is likely to be intercepted. Scheme drainage will discharge to the tributaries of Millington Clough downstream of the cutting thereby reducing flow in a section of the tributaries of 	loc is l Tri arv inf rev dr.	Socialised impact on surface water flowwatercourses isi likely.be intercepted. Stributaries of Millington Clough 1 to 4drainage will disre located within the radius ofthe tributaries oinfluence of the cutting thus will likelyMillington Clougeceive reduced baseflow. Schemedownstream of therainage will discharge to thethereby reducingributaries of Millington Cloughsection of the triownstream of the cutting therebyof Millington Clough	ikely to cheme tharge to the cutting flow in a putaries
								change is expected. Backfill material for this borrow pit is likely to have a similar permeability to the material extracted so no measureable impact expected.	watercourse. Backfill material for the borrow pit will be of similar permeability to the extracted material. If practicable the spring will be re-established once work is complete, but localised impacts are possible				expected to be no measurable change in the baseflow to the river. gro	inge to pat	oundwater flow required. hthways to the atercourse expected.		parallel to the route, and piles are not expected to have a measurable change on groundwater flow to Wade Brook.	the route, are not to have a le change dwater flow	groundwater flow to the watercourses are	change to	Proposed Scheme and Tributary of Tabley Brook 6 and 8 will receive baseflow from the drainage network.	mitig no o dew. aner grou	ation - i.e. r minimal atering/perm it ndwater rol required.	mitigation.	reducing flow in a section of the tributaries of Millington Clough upstream of the crossing, Localised minor impact on Tributaries of	of the crossing. Localised minor impact on Tributarie of Millington Clough 1 to 4 with mitigation with drainage discharge.	s tri up mi Mi	educing flow in a section of the upstream of the ibutaries of Millington Clough Localised minor pstream of the crossing. Localised Tributaries of Millington Clough 1 to 4 with mitigation mitigation with or inhor impact on Tributaries of Clough 1 to 4 with drainage discharge.	crossing. mpact on lington h
			temporary dewatering existin or depressurisation and groun permanent groundwater migra control	ways along which ing poor quality ing poor quality		groundwater by	Creating or altering of pathways along which existing poor quality	dewatering or	Creating or altering of pathway along which existing poor quality groundwater can migrate	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	ring of Creating or altering o gwhich pathways along which Jality existing poor quality n migrate groundwater can mig	Creating or altering of pathways along which existing poor quality groundwater can migrate	Creating or altering of pathways along which existing poor alo quality groundwater can exi migrate qua gro car	ating or ering of chways ng which sting poor ality undwater n migrate	reating or altering of athways along which disting poor quality oundwater can igrate Creating or altering of pathways along which existing poor quality groundwater can migrate	Creating or altering o pathways along whici existing poor quality groundwater can migrate	f Creating or altering of pathways along which existing poor quality groundwater can migrate	can migrate There is a risk of pilin	migrate g	Creating or altering of pathways along which existing poor quality groundwater can migrate	ering of altering of thways along pathways along nich existing which existing or quality poor quality poundwater can	existing poor quality alter groundwater by path temporary dewatering white or depressurisation and poor permanent grou	ting or Disturbing or mobil existing poor qualit ways along groundwater by the xisting temporary dewater quality or depressurisation indwater permanent migrate groundwater contro	ity Creating or altering o pathways along which ering existing poor quality on and groundwater can migrate	of Disturbing or mobilising existing h poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of pathways along which existing poor quality groundwater can migrate	pathways along po which existing te	oor quality groundwater by pathways along	Creating or altering of altering of pathways along poor quality groundwater can migrateCreating or altering of pathways along which existing poor quality groundwater can migrate
			Additional stabilisation Additional and mitigation may be mitigation may be required due to unstable due to ground conditions relating conditions related dissolution related adverted	o unstable ground tions relating to lution related	due to unstable ground conditions relating to dissolution related	dissolution related	Additional stabilisation and mitigation may be required due to unstable ground conditions relating to dissolution related	No measurable change due to scale and shallow depths of	No measurable change due to scale and shallow depths of	Additional stabilisation and mitigation may be required due to unstable ground conditions relating to dissolution related whildpace. The is a	e required ground ng to ed	Additional stabilisation and mitigation may be required due to unstab ground conditions relating to dissolution	mitigation may be required due to cha unstable ground conditions em relating to dissolution related mit	nge due to bedded igation - i.e.	o measurable change ie to embedded ifigation, i.o. po or enter embedded		No measurable change due to embedded mitigation	conduit for groundwater movement during construction, possibly leading to halite dissolution, as piles a expected to reach the to Northwich Halite	re dissolution, as piles are expected to reach the Northwich Halite	No measurable change due to	lempedded	No m No measurable change char due to embedded emb	edded	The temporary upt dewatering will disrupt	: The temporary dewatering will	The temporary dewatering	Тһ	he temporary dewatering will disrupt	No measurable change due to embedded
	Chemical S Intrusions	GOOd	Good possibility that this could possib mobilise poor quality, mobili saline water however due saline to scale of works and to scal embedded mitigation the embed effects of this are likely to be minor.	bility that this could lise poor quality, water however due ale of works and	of to scale of works and	subsidence. The is a possibility that this could mobilise poor quality, e saline water however due to scale of works and e embedded mitigation the o effects of this are likely to be minor.	subsidence. The is a possibility that this could mobilise poor quality, saline water however due to scale of works and embedded mitigation the effects of this are likely to be minor.	groundwater body. Implementation of embedded	Implementation of embedded mitigation measures also assumed.	subsidence. The is a subsidence. The possibility that this could possibility that this could mobilise poor quality, saline water however due to scale of works and embedded mitigation the effects of this are likely to be minor.	nis could iality, iever due ; and ation the e likely to	related subsidence. The a possibility that this could mobilise poor quality, saline water however due to scale of works and embedded mitigation the effects of this are likely to be min	subsidence. The is a possibility that no this could mobilise poor quality, dev saline water however due to scale of works and embedded mitigation the effects of this are likely to be minor.	vatering/per nent undwater	itigation - i.e. no or inimal watering/permanent oundwater control quired.	2	embedded mitigation - i.e. no or minimal dewatering/permane nt groundwater control required. control required.	g/permane water quired. g/permane water quired. g/permane water quired. g/permane water quired. g/permane permane construction, active aquifer protection measures will be deployed during piling to mitigate the	Member. If a conduit for groundwater movement is likely to be formed during construction, active aquifer protection measures will be deployed during piling to mitigate the geotechnical risk of subsidence, in addition	- i.e. no or minimal dewatering/permane nt groundwater	mitigation - i.e. no or minimal dewatering/permar ent groundwater control required.	dewatering/permanent dewa groundwater control aner	r minimal atering/perm changet on saline		is disrupt groundwater levels but will have no measurable changet on saline intrusions.	will disrupt groundwater flow paths but will have no measurable changet on saline intrusions.	m	roundwater levels but will have no	
	Chemical Drinking W Protected J (DrWPAs)	Water Good Good by	Good MA02. MA02.	in community area None in community a MA02.	rea None in community area MA02.	None in community area MA02.	None in community area MA02.	None in community area MA02.	None in community area MA02.	None in community area MA02. MA02.	nity area	None in community are MA02.	a None in community area MA02. MA	ne in nmunity area 02.	one in community area None in community A02.		None in community area MA02. area MA0	to the application of the draft CoCP.	None in community	None in community area MA03.	None in community area MA03.	None in community area MA03.	3. MAOS.	y area None in community area MA03. Hoo Green viaduct and	None in community area MA03.	None in community area MA03.	N	None in community area MA03. None in commu MA03.	nity area None in community area MA03.
	Chemical Groundwar Dependent	ater dia	, None present within or in None present within or in close proximity down-		None present within or in					None present within or in None present v : close proximity down- close proximity			It is likely that the River Dane, Bostock LWS is supported by groundwater flow from the alluvium and river terrace deposits. If additional construction options are required to mitigate and stabilise the unstable ground conditions there is potential to	LWS to t sch hin or in so provimity gro	hatcroft Lane Wetland VS and SBI is adjacent the Proposed heme, therefore, there the potential to alter oundwater and or in close proximity		None present within or in close proximity	e proximity in close proximity	Wincham Brook Valley & Mill Wood LWS and SBI is adjacent to the Proposed Scheme, therefore, there is the potential to alter groundwater and	Brook Corridor LWS is intersected by the Proposed Scheme, therefore, there is the potential to alter groundwater and	within or in close	Belt Wood GWDTE is located 160m down- hydraulic gradient of the proposed scheme	Hoo Green viaduct a Wood ROI are located withi DTE is located Rostherne Mere Ram n down- aulic catchment. There is t ient of the potential to alter rosed groundwater and su water quality during ponent. construction. This wi	hin the msar nic the Rostherne Mere Ramsar site/SSSI topographic catchment There is the potential to alter groundwater and surface water quality during construction.	t. o None present within or in close proximity down-hydraulic gradient	None present within or in of close proximity down-	No	lone present within or in close None present wi roximity down-hydraulic gradient of close proximity of	
Chemical	Terrestrial Ecosystem: (GWDTEs) 1	al 2027 ns Test	hydraulic gradient of ROI. hydrau	proximity down- nulic gradient of ROI. ROI.	hydraulic gradient of ROI	. hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	of ROI.	hydraulic gradient of ROI. hydraulic gradi				vn-hydraulic dient of ROI. to t mit imp	rface water quality uring construction near this site. This will be itigated through the aft CoCP.		down-hydraulic down-hyd gradient of ROI. gradient o	raulic down-hydraulic f ROI. gradient of ROI.	surface water quality during construction near to this site. This will be mitigated through the implementation of the draft CoCP	during construction near to this site. This will be mitigated through the	hydraulic gradient of ROI.	embedded mitigation. embedded mitigation.	ever, no mitigated through th surable draft CoCP. ges There is the potentia alter groundwater qu e scale of to Belt Wood LWS an during construction. edded will be mitigated thro the implementation of draft CoCP.	alter groundwater quality and SBI LWS and SBI during construction. This will be mitigated through		hydraulic gradient of ROI.	RC	, , ,	nt of ROI. hydraulic gradient of ROI.
													It is likely that the River Dane receives some groundwater flow from the alluvium and river terrace	ation and	Works proposed to		Works proposed to Works pro	pposed to	Works proposed to	Waterless/Arley Brook is intersected	Tributary of Tabley Brook 4 is intersected by	pote	temporary ks have the ntial to it rdwater The temporary works	ks The temporary works		The temporary works have		The temporary v	orks
	Chemical Dependent Surface Wa Body	nt Poor Good by Jater 2027	None present within or in None p Poor close proximity down- close p hydraulic gradient of ROI. hydrau	present within or in proximity down- iulic gradient of ROI.	wn-	n None present within or in close proximity down- . hydraulic gradient of ROI.		will ensure no long-term	Borrow pit restoration strategy wi ensure no long-term adverse impacts on Tributary of River Wheelock 5.	None present within or in None present v close proximity down- close proximity hydraulic gradient of ROI. hydraulic gradie	down-	None present within or close proximity down- hydraulic gradient of R0	and stabilise the unstable ground are conditions there is potential to aqu affect groundwater and surface me	a of the area iffers, no mea asurable gro undwater pati v pathways exp	ue to the location andintersect Gad Brookinor extent of the piersand Tributary of Gadthin the much largerBrook 3. Someea of the aquifers, nolocalised effects mayeasurable change onbe anticipated butoundwater flowthese are unlikely toindinglake Brookstatus due topected.embedded		intersect Wadeintersect 'Brook. SomeBrook. Solocalised effects maylocalisedbe anticipated butbe anticipthese are unlikely tothese areimpact waterbodyimpact waterbodystatus due tostatus duembeddedembeddedmitigation.mitigation	me None present within a ated but in close proximity unlikely to aterbody gradient of ROI. a to d	intersect Tributary of Peover Eye and Peover Eye. Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Scheme. There is the potential to alter groundwater and surface water quality during construction near to this site. This will be mitigated	changes anticipated due to scale of works and embedded mitigation - i.e. no	quality to Tributary of Tabley Brook 9, although this is likely to be localised and temporary. This will be mitigated through the implementation of the will to the temp	have the potential to affect groundwater of to tributaries of Table Brook, although this ikely to be localised temporary. This pe mitigated ugh the	bley s is d and l be temporary. This will be temporary. This will be	localised and temporary. This will be imitigated through the implementation of the draft CoCP.	the potential to affect groundwater quality to tributaries of Millington Clough, although this is likely to be localised and temporary. This will be mitigated through the implementation of the draf CoCP.	po to alt an thr	he temporary works have the otential to affect groundwater quality o tributaries of Millington Clough, Ithough this is likely to be localised and temporary. This will be mitigated brough the implementation of the raft CoCP.	villington this is seed and will be h the
			these are unlikely to	localised effects may ticipated but these these are unlikely to	ut Some localised effects ma be anticipated but these	be anticipated but these	be anticipated but these are			Some localised effects may be anticipated but these are unlikely to	ffects may ut these	Some localised effects may be anticipated but these are unlikely to	construction options are Puc confirmed. Bro	ddinglake ook expected.						the draft CoCP.	ent groundwater control required.	impl	ementation e draft 5.						
	General Chemical T	Test Poor Good by 2027	Embedded mitigation does not account for these potential Poor construction ontions with	ntial construction potential construction	waterbody status. Embedded mitigation dog not account for these potential construction	waterbody status. Embedded mitigation does not account for these potential construction	waterbody status. Embedded mitigation does not account for these potential construction	No measurable change due to scale and shallow depths of borrow pits relative to groundwater body.	No measurable change due to scale and shallow depths of borrow pits relative to groundwater body.	Embedded miu	be anticipated but likely be restricted to the	impact waterbody statu Embedded mitigation does not account for these potential construction options wi		igation - i.e.			Some localised effects may be anticipated but these are unlikely to impact impact water	ly to minimal	these are unlikely to	these are unlikely to the	ese are unlikely or minimal	due to embedded emb mitigation - i.e. no or mitig minimal no o	neasurable ge due to No measurable chan edded due to embedded gation - i.e. mitigation - i.e. no or r minimal minimal	due to embedded or mitigation - i.e. no or minimal	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent	i.e. no or minimal dewatering/permanent	effects may be anticipated but	No measurable change due to mbedded mitigation - i.e. no or ninimal dewatering/permanent	No measurable hange change due to d embedded o or mitigation - i.e. no or minimal
			component of this scheme component therefore classer assessment is	ns with regards to the options with regards to the lation component of the foundation component of this scheme component srequired construction options assessment is required once construction options construction options construction options construction options construction c	foundation component o this scheme component therefore closer	f foundation component of this scheme component therefore closer	foundation component of this scheme component therefore closer	implementation of embedded mitigation measures also assumed.	implementation of embedded mitigation measures also assumed.	regards to the foundation component of this scheme component therefore closer assessment is required once construction options are confirmed	openent of ponent quired n options	ending regards to the foundati component of this scheme component therefore closer assessment is required once construction	embedded mitigation. ma gro cor req	nent imp undwater due htrol iired.	itigation.	impact waterbody status.	waterbody status due to embedded mitigation.	e to dewatering/permane d groundwater control	nt impact waterbody status due to embedded mitigation.	impact waterbody to status due to wa embedded sta mitigation.	dewatering/permar ent groundwater itus. control required.				initial dewatering permanent	groundwater control required.		roundwater control required. required.	anent dewatering/perm to impact to impact waterbody status.
			confirmed.	options are confirmed	d.					are confirmed.		options are confirmed.																	

(GB1202G991700)	e Quaternary Sand) (Secondary aquife				Detailed Impa	ct Assessment
A Management Catchment:	North West GW	Sche	eme compo	nent (ID):	GB41202G99	91700-CR-115
		Scher	ne compon	ient type:	Cutting with ret	aining structure
Overall Status 2015):	Poor	Schom		unt name:	Hoo Groop South c	utting rotaining wall
Overall Status			e compone			utting retaining wall
Objective:	Good by 2027			mponent:	Lowering of groundwater levels and potential	
WFD Status Element	WFD Quality Element	2015 RBMP Cycle 2 Status	2015 RBMP Cycle 2 Status Objective	2019 Status	reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	"Damming" of groundwater flow and reduction in groundwater contributions
	Quantitative Saline Intrusions	Good	Good by 2015	Good	The temporary dewatering will disrupt groundwater levels but will have no measurable change on saline intrusions. Permanent secant piled retaining walls are to be built along the entire length of the Hoo Green cuttings thereby significantly reducing the requirement for dewatering.	No measurable change due to scale of works relative to water body, shallow depth of works and embedded mitigation.
	Quantitative Water Balance	Good	Good by 2015	Good	The temporary dewatering will disrupt groundwater levels but will have no measurable change on water balance. Permanent secant piled retaining walls are to be built along the entire length of the Hoo Green cuttings thereby significantly reducing the requirement for dewatering.	Some localised damming effects may be anticipated but not likely to be significant on the waterbody scale
uantitative	Groundwater Dependent Terrestrial Ecosystems (GWDTE) Test	Good	Good by 2027	Good	Belt Wood LWS and SBI is a potential GWDTE 160m east, down-hydraulic gradient, of the Proposed scheme component. The upper reaches of Tributary of Tabley Brook 9, which runs through Belt Wood, are within the potential zone of influence of the cutting. This could impact groundwater levels within the habitat. Some drainage from the Proposed Scheme will be discharged into a watercourse upstream of Belt Wood which should compensate for some of reduction in groundwater contribution.	to the Tributary of Tabley Brook 9 which runs through Belt Wood. A small proportion of groundwater may be intercepted that will otherwise discharge to this watercourse. Some drainage from the Proposed Scheme
	Quantitative Dependent Surface Water Body	Good	Good by 2015	Good	No measurable change due to scale of works relative to water body, shallow depth of works and embedded mitigation.	The retaining structure has the potential to disrupt groundwater flow to the Tributary of Tabley Brook 8 and 9. Localised effects anticipated due to scale of works and embedded mitigation
					Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of pathways along which existing poor quality groundwater can migrate
	Chemical Saline Intrusions	Good	Good by 2015	Good	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.
	Chemical Drinking Water Protected Areas (DrWPAs)	Good	Good by 2015	Good	None in community area MA03.	None in community area MA03.
Chemical	Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Poor	Good by 2027	Poor	Belt Wood GWDTE is located 160m down-hydraulic gradient of the proposed scheme component. However, no measurable change anticipated due to the scale of works and embedded mitigation.	
	Chemical Dependent Surface Water Body	Poor	Good by 2027	Poor	The temporary works have the potential to affect groundwater quality to Tributary of Tabley Brook 8 and 9, although this is likely to be localised and temporary. This will be mitigated through the implementation of the draft CoCP.	The temporary works have the potential to affect groundwater quality to Tributary of Tabley Brook 8 and 9, although this is likely to be localised and temporary. This will be mitigated through the implementation of the draft CoCP.
	General Chemical Test	Poor	Good by 2027	Poor	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.

Table A22: Weaver and Dane Quaternary Sand and Gravel A Weaver and Dane Quaternary Sand and Gravel Aquifers (GB1202G991700) (Secondary aquifer (undifferentiated))	Aquifers (GB1202G991700) detailed impact assessment - eff Detailed Impact Assessment	fects on current status Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Detailed Impact Assessment Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact As	sessment Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment
EA Management Catchment: North West GW Scheme componen Scheme component		GB41202G991700-RT-117 Retaining Wall	GB41202G991700-CR-119 Cutting with retaining structure	GB41202G991700-CR-120 Cutting with retaining structure	GB41202G991700-C-121 Cutting	GB41202G991700-VF- 123 GB41202G991700-VF-12 Viaduct Foundations Viaduct Foundations	26 GB41202G991700-C-127 Cutting	GB41202G991700-C-128 GI	129 Overbridge	GB41202G991700-OF-130 Overbridge Foundations	GB41202G991700-CR-131 Cutting with retaining structure	GB41202G991700-C-132 Cutting	GB41202G991700-C-133 Cutting	GB41202G991700- OF-134 Overbridge Foundations	GB41202G991700-CR-136 Cutting with retaining structure	GB41202G991700 Retaining Wa		9 GB41202G991700-VF-140 Viaduct Foundations	GB41202G991700-RT-143 Retaining Wall
Overall Status (2015): Poor Scheme component r		Hoo Green (box) tunnel	Hoo Green North cutting retaining wall	Hoo Green North cutting retaining wall	Hoo Green North cutting	Peacock Lane viaduct Agden Brook viaduct	Millington cutting		Foundations iillington Footpath 7/4 accommodation A5 overbridge	A556 Chester Road overbridge	Rostherne cutting retaining wall west	Rostherne cutting	Rostherne North cutting	Yarwood Heath Farm accommodation overbridge	Rostherne cutting retaining wall east	Rostherne East box	structure Blackburn's Brook North viaduct	Blackburn's Brook South viaduct provision	Ashley embankment retaining wall
Overall Status Objective: Good by 2027 Impact type from sc compo WFD Status Element WFD Quality Element 2015 RBMP Cycle 2 Status 2015 RBMP Cycle 2 Status	onent: Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or flow and reduction in	n groundwater flow and reduction	Lowering of groundwater levels and potential reduction in groundwater on in utions groundwater abstractions by temporary dewatering/permanent groundwater control	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	"Damming" of "Damming" of groundwater flow groundwater flow and and reduction in reduction in groundwater groundwater contributions contributions	Lowering of groundwater levels an potential reduction in groundwater d contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwat control	er in groundwater contributions	and reduction in	"Damming" of groundwater flow and reduction in groundwater contributions	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	ction in surface water bodies, GWDTE or groundwater	Lowering of groundwater levels an potential reduction in groundwate contributions to surface water bodie GWDTE or groundwater abstractions temporary dewatering/permanent groundwater control	d "Damming" of r groundwater flow by groundwater contributions deward	ng of groundwater I potential reduction water contributions ace water bodies, E or groundwater cions by temporary ering/permanent ndwater control	n in water bodies, GWDTE or flo	ow and reduction in reduction in	groun "Damming" of groundwater flow and groundwater groundwater contributions a dewa	Lowering of ndwater levels and ential reduction in groundwater ributions to surface r bodies, GWDTE or groundwater abstractions by temporary atering/permanent undwater control
Quantitative Good by Saline Intrusions Good	The temporary dewatering will disrupt groundwater levels but will have no measurable change on saline intrusions. Permanent secant piled retaining walls are to be built along the entire length of the Hoo Green cuttings thereby significantly reducing the requirement for dewatering.	h of retaining walls are to be Hoo Green cuttings and	 built saline intrusions. Permanent secant piled retaining walls are to be built along the entire length o the Hoo Green cuttings and no measureable change in saline intrusion is expected. 	Permanent secant piled retaining walls are to be built the Hoo Green cuttings and no		of relative to water body, shallow depth of works	against embedded mitigation. Cutting 11m deep and extends for 1462m and intersects Agden Brook. Dewatering may be required due to depth of	g is embedded mitigation. du d Dewatering may be required due rel to depth of groundwater and sh nature of works. Therefore an	lative to water body, sca nallow depth of works boo	o measurable change due to ale of works relative to water ody, shallow depth of works nd embedded mitigation.	due to scale of works relative to water body	ve to water No measurable change to saline intrusions due to of works scale of works relative to water body scale.		dy water body, shallow intrusions	The presence of the cut rable change to saline due to scale of works water body scale. abstractions.	nge on ssue is n dewatering/permanent body, sh	surable change due to works relative to water nallow depth of works and led mitigation.	No measurable change due to scale of works relative to water body and embedded mitigation.	easurable change o embedded ition - i.e. no or al eering/permanent dwater control red.
Quantitative Water BalanceGoodGood by 2015G	5000	The temporary dewatering will disrupt groundwater levels but will have no measurable change on water balance. Some localised dammin effects may be anticipat built along the entire length of the Hoo Green cuttings thereby significantly reducing the requirement for dewatering.	Fermanent secant piled anticipated but not likely to be significant on the waterbody scale	The temporary dewatering will disrupt groundwater levels but will have no measurable change on water balance. Permanent secant piled retaining walls are to be built along the entire length of the Hoo Green cuttings thereby significantly reducing the requirement for dewatering.		No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	Agden Brook. Dewatering may be required due to depth of groundwate and nature of works. Therefore	effect when balanced against embedded mitigation. No Dewatering may be required due to depth of groundwater and nature of works. Therefore lowering in groundwater levels apticinated which could impact	itigation - i.e. no or inimal ewatering/permanent oundwater control	o measurable change due to ale of works relative to water ody, shallow depth of works nd embedded mitigation.	Localised and temporary adverse effect on No measurable cha water balance due to dewatering during scale of works relat construction. body and embedde	ve to water balance due to dewatering during construction	Localised and temporary adverse effect o water balance due to dewatering during construction.	No measurable change due to embedded Localised mitigation - i.e. no or minimal due to de dewatering/perman ent groundwater control required.	fect on water balance water balance as this is	nge on i.e. no or minimal scale of dewatering/permapent body st	works relative to water relative to water body,	No measurable change due to scale of works relative to water body and embedded mitigation	easurable change o embedded tion - i.e. no or hal erering/permanent dwater control red.
Quantitative Groundwater Dependent Good Terrestrial Good Ecosystems Good (GWDTE) Test Good	Good Good LWS and SBI is a potential GWDTE 160m east, down-hydraulic down-hydraulic gradient, fradient, of the Proposed scheme component. The gradient, of the Proposed scheme component. The retaining upper reaches of Tributary of Tabley Brook 9, which intercept groundwater florurs through Belt Wood, are within the potential dewatering zone of fullence. This could impact levels within the habitat. Some drainage from the Proposed Scheme will be discharged into a watercourse upstream of will be discharged into a will be discharged into a material for the Proposed Scheme will be discharged into a material from the Proposed Scheme will be discharged into a material from the Proposed Scheme will be discharged into a material from the Proposed Scheme will be discharged into a material from the Proposed Scheme will be discharged into a material from the Proposed Scheme will be discharged into a material from the Proposed Scheme will be discharged into a material from the Proposed Scheme will be discharged into a material from the Proposed Scheme will be discharged into a material from the Proposed Scheme will be discharged into a material from the Proposed Scheme will be discharged into a from the Proposed Scheme will be discharged into a from the Proposed Scheme will be discharged into a from the Proposed Scheme will be discharged into a from the Proposed Scheme will be discharged into a from the Proposed Scheme will be discharged into a from the Proposed Scheme will be discharged into a from the Proposed Scheme will be discharged into a from the Proposed Scheme the form the Proposed Scheme	ast, of potential GWDTE 160m east, down-hydraulic gradient, of the Proposed Tributary of Tabley Broc gradient, of the Proposed Tributary of Tabley Broc upper reaches of Tributary the upper reaches of thi of Tabley Brock 9, which watercourse are within 1 runs through Belt Wood, are within the potential groundwater flow may be influence. This could otherwise discharge to t impact groundwater levels watercourse. Some drai drainage from the will be discharged into a discharged into a watercourse upstream of Belt Wood which should compensate for some of	is the of be No measurable changes as habitats are located outside of the radius of influence of the retaining wall. Belt Wood LWS and SBI is located outside of the ROI but downgradient of the Proposed Scheme. Therefore, the structures may intercept baseflow in the retaining wall the retaining wall.	 No measurable changes as habitats are located outside of the radius of influence of the retaining wall. influence upgradient of the Rosther Mere Ramsar site/SSSI topographic catchment. Mitigation includes dra from cuttings extending across and outside the Rostherne Mere catchment pumped to recharge trenches. If argoundwater is intercepted by the Green viaduct, the recharge from trenches should compensate for the reduction in groundwater flow. Belt Wood LWS and SBI is located outside of the ROI but downgradient the Proposed Scheme. Therefore, the structures may intercept baseflow the groundwater catchment to the habitat. Localised minor impact as 	rme influence upgradient of the Rostherner Mere Ramsar site/SSSI topographic is catchment. Mitigation includes draina from cuttings extending across and outside the Rostherne Mere catchment pumped to recharge trenches. If any groundwater is intercepted by the Ho Green viaduct, the recharge from are located outside of the radius of influence of the retaining wall. Belt Wood LWS and SBI is located outside of the Rostherne. Therefore, the structures may intercept baseflow in groundwater catchment to the habitat Localised minor impact as groundwater is groundwater.	None present within or in close proximity down-hydraulic gradient of ROI. he	spring flows into Rostherne Mere	Groundwater in this sub- catchment area could be intercepted within the zone of influence and, hence, would discharge to the drainage in the cuttings. Impact on groundwater spring flows into Rostherne Mere Ramsar site/SSI. Although the potential impacts on water levels are small, mitigation will include drainage being pumped to recharge trenches above Rostherne Mere from an area of	one present within or close proximity own-hydraulic radient of ROI.	verbridge will be constructed as tangent pile wall which has optential to impact on 'oundwater flow pathways. No leasurable change to 'oundwater flow as the tangent le wall is expected to impact a inor extent in comparison to se areal extent of the uperficial and bedrock aquifer. ne overbridge may intercept ome of the groundwater flow to ostherne Mere. However, given te main inflow to the habitat is om Rostherne Brook no leaurable change on 'oundwater flow from the	The zone of influence of the retaining wall includes parts of Rostherne Mere. Groundwater in this sub-catchment area could be intercepted within the zone of influence and, hence, would discharge to the drainage in the cuttings. Impact on groundwater spring flows into Rostherne Mere Ramsar site/SSSI. Although the potential impacts on water levels are small, mitigation will include drainage being pumped to recharge trenches above Rostherne Mere from an area of the cuttings extending a considerable distance outside the Rostherne Mere different to the timing of natural groundwater discharge. However, the additional discharge from the extended area of the cuttings would mean that the total discharge area.	es parts of bundwater in area could n the zone of e, would inage in the groundwater stherne Mere though the n es small, le drainage charge cruttings rable n Rostherne Nere stature there Mere cuttings rable n Rostherne	and, hence, would discharge to the drains in the cuttings. Impact on groundwater sp flows into Rostherne Mere Ramsar site/SS Although the potential impacts on water I are small, mitigation will include drainage being pumped to recharge trenches abov Rostherne Mere from an area of the cutti extending a considerable distance outside	Rostherner of Rostherner of Rostherner of Rostherner Groundwa catchmen intercepte influence discharge or in close proximity groundwa catchmen intercepte influence discharge gradient of ROI. site/SSSI. impacts of small, mit drainage l recharge t Rostherner the cutting.	of influence of the cutting includes parts ne Mere. ter in this sub- area could be d within the zone of and, hence, would to the drainage in the npact on ter spring flows into Mere Ramsar Mthough the potential n water levels are gation will include eing pumped to renches above Mere from an area of s extending a ole distance outside trenc Mere catchment.	es parts indwater ea could e zone of buld e in the ndwater rene Mere gh the hall, ainage ge he Mere ngs		Hancock's Bank South as there is potential for piling from Blackburn's Brook South viaduct to affect the supply and flow path of	present within or in proximity down- ulic gradient of ROI.
Quantitative Dependent Surface WaterGoodGood by 2015Good		 Likely localised impacts on surface water flows in Tributary of Tabley Brook 9 possible due to dewatering resulting in a slight reduction in baseflow to 1km of the northern branch of Tributary of Tabley Brook 9 		 surface water flows in Tributary of Tabley E of Tabley Brook 9 possible due 9 possible due to interception of groundwater flow to the watercour slight reduction in baseflow to 1km of the northern branch of Tributary of Tabley Brook 9. Discharge from cutting drainage network will help to maintain water flows in Tributary of Tabley E water flows in Tributary of Tabley E water flows in Tributary of Tabley E groundwater flow to the watercour below ground structures resulting i b	BrookLikely localised impacts on surface water flows in Tributary of Tabley Brook 9 possible due to dewatering resulting in a slight reduction in baseflow to 1km of the northern branch of Tributary of Tabley Brook 9. Discharge from cutting drainage network will help to maintain flows in Tabley Brook 9 possible due to interception of groundwater flow to the watercourse below ground structures resulting in a slight reduction in baseflow to 1km of the northern branch of Tributary of Tabley Brook 9. Discharge from cutting f	Image: Section of the process of th	 Groundwater flow into Agden Brook and Tributary of River Bollin 10 and 11 may be a reduced due to interception of baseflow. This would be mitigated I the drainage system of the Proposed Scheme which would discharge water 80m downstream of the Proposed Scheme so there would be a minor tempory reduction in groundwater flo to this stretch of Agden Brook. Tributary of River Bollin 11 is supported by a low value land drainage outfall an is located within the ROI. Tributary of River Bollin 10 is located 50m outside of the ROI. As water intercepted by th Proposed Scheme will be diverted to Blackburn's Brook, the upper reaches of these watercourses may receive 	ed located within the ROI. Tributary of River Bollin 10 is located approximately 50m outside of the ROI. As water intercepted by the Proposed Scheme will be diverted to Blackburn's Brook, the upper reaches of these two watercourses may receive minor	one present within or gro close proximity Rivo own-hydraulic wal radient of ROI. mir the sup	he A556 Chester Road verbridge will be constructed as tangent pile wall which has obtential to impact on coundwater flow to Tributary of ver Bollin 11. The tangent pile all is expected to impact a inor extent in comparison to he areal extent of the uperficial and bedrock aquifers, hd thus no measurable change expected.	Lowering of groundwater levels during construction could reduce groundwater contributions to Tributary of River Bollin 11. approximately 50m the ROI. As water in	ay be a subset of the set of the	k k	None present within or in close proximity down-hydraulic gradient of ROI. Birkin Bro intercepte be diverte and/or Bli the draina Proposed therefore, change or Birkin Bro	bk may receive roundwater discharge lowering of ter levels during g for construction of rme cutting which erwise make a minor on to the baseflow to	e reduced due to ater for herne bon to the bo dby the bon to to to to to to to to to to to to to	 minor adverse impacts or baseflow to Blackburn's baseflow to Blackburn's brok and birkin Brook. These watercourses are crossed by the Proposed Scheme and any below ground structures have the potential to obstruct groundwater flow toward the watercourses. However, groundwater we he intercepted by the drainage system of bosed Scheme, thereby ng the impact of water interception. rn's Brook is an upstream y of Birkin Brook and the watercourses. water interception. minor adverse impacts or baseflow to Blackburn's brook and the watercourses. However, groundwater we and any below ground structures have the potential to obstruct groundwater flow toward the watercourses. However, groundwater we be intercepted by the drainage system for the Proposed Scheme. No measurable changes expected as the groundwater to Blackburn's Brook will be discharged upstream of the structures flow toward the watercourses. 	be intercepted by the Tributa drainage system for the via the Proposed Scheme. No and we measurable changes diversi expected as the Scheme	nity to Tributary of Brook 4 during tering for the ruction of the ing wall. dwater contribution ed by the retaining would discharge into winstream tributary, ary of Birkin Brook 1, e drainage system atercourse ions of the Proposed ne. As a result, the courses, particularly ary of Birkin Brook 4, xperience reduced
	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	te Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	groundwater by Creating or altering of pathways temporary dewatering or along which existing poor quality	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control		Agden Brook expected. Creating or altering of pathways along which existing poor quality groundwater can migrate Creating or altering of pathways along which existing poor quality groundwater can migrate	poor quality groundwater by temporary dewatering or	groundwater by temporary of dewatering or wł depressurisation and qu	hich existing poor	athways along which existing		g of Disturbing or mobilising existing poor quality nich existing groundwater by temporary dewatering or depressurisation and permanent groundwater control	quality groundwater by temporary	altering of existing p pathways along groundw which existing dewateri	ng or pathways along which poor quality groundw migrate	existing groundwater by pathwa	g or altering of ys along which existing	Creating or altering of existin pathways along which groun existing poor quality tempo groundwater can or dep	rbing or mobilising ng poor quality Idwater by orary dewatering pressurisation and anent groundwater ol
Chemical Saline Intrusions Good by 2015 G	Good Good Ko measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required. Ko measurable change du embedded mitigation - i.e or minimal dewatering/permanent groundwater control required.	ue to groundwater levels is unlikely to impact on drawing in of poor quality water. Mitigation to reduce the zone of influence is in place.	nlikely nlikely to impact on drawing in of poor quality gation drawing in to poor quality atter. Mitigation to reduce	Temporary lowering of groundwater levels is unlikely to n impact on drawing in of poor quality water. Mitigation to . reduce the zone of influence is in place.	ing in of poor quality water. Mitigation to reduce the zone of influence is in	e. groundwater control groundwater control	mitigation. Cutting is 11m deep and extends for 1462m and intersects Agden Brook. Dewatering may be required due to depth of groundwate	glacial till may be affected by the cutting. Application of the draft	e. no or minimal e. watering/permanent	o measurable changes due to nbedded mitigation - i.e. no or inimal dewatering/permanent roundwater control required.	Iscale Irelative to water bo	Ale of works scale of works relative to water body scale	No measurable changes due to embedde mitigation - i.e. no or minimal dewatering/permanent groundwater cont required.	rol minimal minimal	I mitigation - i.e. no or embedded mitigation -	due to to embedded mitigation - groundw e. no or i.e. no or minimal groundw manent dewatering/permanent glacial ti uired. groundwater control cutting. required. CoCP ar constru	level and that water flow within the minimal	due to embedded due to mitigation - i.e. no or mitigat minimal minim dewatering/permanent dewate	easurable changes o embedded tition - i.e. no or hal tering/permanent dwater control red. No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.
Chemical Drinking Water Protected Areas (DrWPAs) Good by 2015	Good None in community area MA03. MA03.	None in community area None in community area MA03.	None in community area None in community area MA03.	None in community area MA03.	None in community area MA03. None in community area MA03.	None in community area area MA03.	a None in community area MA06.		one in community rea MA06.	one in community area MA06.	None in community area MA06. None in community	area MA06. None in community area MA06.	None in community area MA06.	None in community area MA06.	mmunity area MA06. None in community are	MA06. None in community area None in MA06.	community area MA06. None in community area MA06.	None in community area None i MA06.	in community area MA06.
Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test Chemical	Poor However, no measurable change anticipated due to embedded mitigation. Belt Wood GWDTE is located 160m down-hydraulic 160m down-hydraulic gradient of the proposed gradient of the proposed gradient of the proposed gradient of the proposed scheme component. However, no measurable change anticipated due to the scale of works and embedded mitigation.	yotential to alter ground groundwater and surface water quality during construction. This will be mitigated through the draft o the CoCP. dddd Thore is the potential to	r Rostherne Mere Ramsar site/SSSI topographic catchment. There is the potential to alter is will e mitigated through the Belt g e Belt wood LWS and SBI e mitigated through the g e mitigated through the	topographic catchment. Therewithin the Rostherne Mere Ramsaris the potential to altersite/SSSI topographic catchment. Tgroundwater and surface wateris the potential to alter groundwaterquality during construction. Thisand surface water quality duringwill be mitigated through theconstruction. This will be mitigateddraft CoCP.There is the potential to altergroundwater quality to Beltgroundwater quality to Beltgroundwater quality to Beltand SBI during construction. This will be mitigated	be mitigated through the draft CoCP. through the draft CoCP.	None present within or in close proximity down-hydraulic gradient of ROI.	The ROI of the Millington cutting includes parts of Yarwood Heath Cove and Rostherne Mere. There is the potential to alter groundwater and surface water quality during construction near to this site. This will be mitigated through the implementation of the draft CoCP.	of Rostnerne Mere. There is the potential to alter groundwater and surface water quality during construction near to this site.	one present within or close proximity cown-hydraulic radient of ROI. to t three to t	he A556 Chester Road verbridge will be constructed as tangent pile wall which has otential to impact on roundwater flow pathways. here is the potential to alter roundwater and surface water Jality during construction near this site. This will be mitigated rough the implementation of le draft CoCP.	parts of Rostnerne Mere. Ihere is the potential to alter groundwater and surface water quality during construction near to this site. This will be mitigated through the implementation of the draft CoCP.	ts of The zone of influence of the cutting includes parts of values and value	The zone of influence of the cutting incluce parts of Rostherne Mere. There is the potential to alter groundwater and surface water quality during construction near to site. This will be mitigated through the implementation of the draft CoCP.	None present within or in close proximity down-hydraulic gradient of ROI.	of influence of the ludes parts of cutting includes parts o Mere. There is the o alter groundwater e water quality during on near to this site. e mitigated through nentation of the draft	s the water y during site. This of the raft water control required. No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required. a state of the required. The state of the mitigate sta	estructure has potential to on groundwater flow alter groundwater and ys to Hancock's Bank surface water quality There is the potential to bundwater and surface to Hancock's Bank South. uality during construction this site. This will be through the entation of the draft CoCP. draft CoCP.	alter groundwater and surface water quality during construction near to Hancock's Bank South. This will be mitigated through the	proximity down- close proximity down-
Chemical Dependent Surface Water Body Poor Good by 2027 F	The temporary works have the potential to affect groundwater quality to Tributary of Tabley Brook 8 and 9, although this is likely Poor	groundwater quality to tributaries of Tabley Brook, although this is likely to be localised and temporary. Ty. This will be mitigated	the potential to affect groundwater quality to book, be y. This localised and temporary. the potential to affect groundwater quality to tributaries of Tabley Brook, localised and temporary. the potential to affect groundwater quality to tributaries of Tabley Brook, this is likely to be tributaries of Tabley Brook, this is likely to be tributaries of Tabley Brook, this is likely to be tributaries of Tabley Brook, this is likely to be temporary. the temporary works have the potential to affect groundwater quality to tributaries of Tabley Brook, this is likely to be localised and temporary. temporary this will be mitigated	potential to affect groundwater quality to tributaries of Tabley Brook, although this is likely to be localised and temporary. This will be mitigated through	ential The temporary works have the potential to affect groundwater quality to tributaries of Tabley Brook, although this is likely to be localised and temporary. This will be mitigated through the implementation of the draft CoCP.	quality to tributaries of Millington Clough, although this is likely to be localised and mitigated through the	 The temporary construction works hat the potential to affect groundwater quality to Tributary of River Bollin 10 and 11. This will be mitigated through 	groundwater quality to Tributary of River Bollin 10 and 11. This will be mitigated through the	one present within or close proximity own-hydraulic radient of ROI	ne temporary construction orks have the potential to ffect groundwater quality to ributary of River Bollin 6. This ill be mitigated through the aplementation of the draft oCP.	The temporary construction works have the potential to affect groundwater quality to Birkin Brook. This will be mitigated through the implementation of the draft CoCP. The implementation of the draft CoCP.	ential to quality to ill be be to affect groundwater quality to Birkin Brook. This v be mitigated through the implementation of the dra CoCP	II None present within or in close proximity	None present within or in close proximity down-hydraulic gradient of ROI	works have the potential indwater quality to ok. This will be through the	tion No measurable change due The terr to affect to embedded mitigation - birkin i.e. no or minimal groundw ted dewatering/permanent Brook. T tion of groundwater control through required.	ave the potential to affect water quality to Birkin This will be mitigated the implementation of the CoCP	construction works have the potential to affectconstruction the po groundwater quality to ground Blackburn's Brook and Birkin Brook. This will be mitigated through the implementation of theconstruction the potential ground ground througi implementation of the	emporary ruction works have btential to affect dwater quality to aray of Birkin Brook 4. vill be mitigated gh the mentation of the CoCP. The temporary construction works have the potential to affect groundwater quality to Tributary of Birkin Brook 4. This will be mitigated through the implementation of the draft CoCP.
General Poor Good by Chemical Test Poor 2027	No measurable change due No measurable change du to embedded mitigation - embedded mitigation - i.e i.e. no or minimal or minimal dewatering/permanent dewatering/permanent groundwater control groundwater control required. required.			No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	e. no or minimal e. watering/permanent	o measurable changes due to nbedded mitigation - i.e. no or inimal dewatering/permanent oundwater control required.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation. The cutting will rem superficial deposits line of the cutting, of shorter pathway fo water to discharge bedrock. This could change in groundw chemistry. However the scale of works r water body scale ar mitigation, no meas changes are expect	along the reating a surface tho the cause a tter , considering elative to d embedded urable	Some localised effects may be anticipated these are unlikely to impact waterbody st due to embedded mitigation.	atus mitigation - i.e. no or minimal unlikely to	discharge into the bedr discharge into the bedr could cause a change in groundwater chemistry	g the line shorter No measurable change due ck. This to embedded mitigation - i.e. no or minimal anticipa However, dewatering/permanent to impa works groundwater control to embe ale and required.		No measurable change due to scale of works relative to water body scale.	Pasurable changes o embedded tion - i.e. no or nal tering/permanent dwater control red. No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.

Weaver and Da	ane Quaternary Sand and Gravel Aquifers 00) (Secondary aquifer (undifferentiated)) nt	ifers (GB1202G991700) detailed impact assessment Detailed Impact Assessment (D): GB41202G991700-ST-145	GB41202G991700-ST-146	Detailed Impact Assessment	Detailed Impact Assessment GB41202G991700-OF-	Detailed Impact Assessment GB41202G991700-OF-		Detailed Impact Assessment	t Detailed Impact De Assessment A GB41202G991700- GB41	ssessment	GB41202	ed Impact Detailed Impac essment Assessment 2G991700-OF-	Assessment	Detailed Impact Assessment 41202G991700-OF-	Detailed Impact Assessment GB41202G991	Detailed Impact Assessment 700-RT-157C GB41202G991700-CF		Impact Assessment 2G991700-CCRT-159	Detailed Impact Assessment GB41202G991700-RT-159A		nct Assessment 1700-RT-159B	Detailed Impact Assessment GB41202G991700-BF-160	Detailed Impact Assessment GB41202G991700-RT-160A	Detailed Impact Assessment
Catchment: Overall Status	Scheme component typ		Station/Depot	GB41202G991700-VF-147 Viaduct Foundations	148 Dverbridge Foundation		GB41202G991700-C-151 Cutting	GB41202G991700-OF-151A Overbridge Foundations	OF-152 Overbridge Foundations	154 GB41202G99	ting Ov	157	taining Wall	157B Overbridge Foundations	Retainin			nnel with Retaining Structure	Retaining Wall		ing Wall	Bridge Foundations	Retaining Wall	GB41202G991700-RT-160B Retaining Wall
(2015): Overall Status Objective:			B-R) Ashley railhead	Mid-Cheshire (railway) viaduct and Mobberley Road viaduct	Mobberley Road offline overbridge	Back Lane accommodation overbridge	Thorns Green cutting	Thorns Green Accommodation Offline Overbridge	n Castle Mill Lane Riv overbridge	er Bollin East Ringway		erbridge M56 J6 Southbour		M56 Jct 6 Gyratory Dffline Overbridge West	M56 J6 Wilmslow Roa Retainin	M56 cutting retaining	wall M	56 East tunnel	M56 Jct 6 Northbound Merge Offline Retaining V	/all M56 J6 Southbound Div	rge Offline Retaining Wall	A538 Wilmslow Road offline overbridge	M56 Jct 6 Hale Road Link Overbridge Reta	ining Wall M56 J6 THG Attenuation Tank Retaining Wall
WFD Status Element	WFD Quality Element 2015 RBMP Cycle 2 Status Objective	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater	water bodies. GWDTE or reduction in	reduction in groundwater	"Damming" of groundwater flow and reduction in groundwater contributions	"Damming" of groundwater flow and reduction in	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	"Damming" of groundwater flow and reduction in groundwater contributions	ow groundwater flow grou er and reduction in and groundwater g	amming" of ndwater flow reduction in oundwater ntributions	r contributions vater bodies, roundwater by temporary /permanent	Lowering of groundwater lev and potential reduction in groundwater contributions t surface water boo GWDTE or groundwater abstractions by temporary dewatering/perm nt groundwate	els o groundwater flow and reduction in groundwater contributions ane	"Damming" of roundwater flow and reduction in groundwater contributions de	Lowering of groundwater levels and potential reduction in groundwater contributions to urface water bodies, GWDTE or groundwater abstractions by temporary lewatering/permane nt groundwater control	groundwater flow contributions to surface groundwater	Damming" of roundwater flow and eduction in roundwater foundwater four and eduction in roundwater pontributions four ad eduction in roundwater abstractions by temporary dewatering/perman groundwater contributions	al ater face "Damming" of E or groundwater flow and reduction in groundwat contributions	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	water bodies, GWDTE or	"Damming" of groundwater flow and reduction in groundwater contributions	owering of groundwater levels and potential eduction in groundwater contributions to surface water bodies, GWDTE or roundwater abstractions by temporary dewatering/permanent groundwater control	water bodies, GWDTE or reduction in g	r flow and roundwater groundwater abstractions
	Quantitative Good Good 2015 Good Saline Intrusions Good Good Good Good Good	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	e to minimal due to shallow hatur	e of er saline intrusions due to scale of works relative to water body scale	intrusions due to	change on saline No intrusions due to scale in of works relative to re		No measurable change on saline intrusions due to scale of works relative to water body scale.	Intrusions due to lintrus	e on saline ions due to of works re to water	change on saline on saline o scale of works due to so	urable change intrusions ale of works o water body relative to water body scale.	s on saline intrusions on saline ks due to scale of works due	saline intrusions on e to scale of works due	n saline intrusions of ue to scale of works of	No measurable change on saline intrusions due to scale of works	usions due to saline intrusions due to	saline intrusions due to		o saline intrusions due to	saline intrusions due to sal	aline intrusions due to saline intrusions due	to saline intrusions due to saline intrusion	elative to scale of works relative to scale of works relative to
	Quantitative Water Balance Good 2015 Good	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	due e to ded ded ded No measurable change mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	e of e.e. no or minimal dewatering/permanent	No measurable change due to embedded mitigation i.e. no or minimal dewatering/permane nt groundwater control required.	dewatering/permanen t groundwater control	linor localised impacts on water alance likely.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	mitigation - i.e. no	easurable e due to dded mitigation o or minimal ering/permane undwater ol required.	change due to ation - i.e. no or ring/permanent	urable change nbedded n - i.e. no or ng/permanen vater control ut groundwater cont required.	or No measurable change due mitig due to embedded minit	measurable change e to embedded du igation - i.e. no or mit nimal mit vatering/permanen dev roundwater control t g juired. rec	ue to embedded hitigation - i.e. no or hinimal	nitigation and scale of mitigation and scale of mitigation and scale of mit	measurable nge due to No measurable change bedded to embedded mitigatio gation and and scale of works. e of works.	n to embedded mitigation a	e a d No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required. No measurable change to embedded mitigati i.e. no or minimal dewatering/permanent groundwater control required.	on - to embedded mitigation - i.e. no or minimal t dewatering/permanent	Potential to reduce groundwater flow to Spring at Keepers Cottage, Sunbank Lane (south) due to interception by below ground structures. This spring is being artificially channelled to the receiving watercourse due to the road being built on its natural surface expression.	o measurable change due o embedded mitigation - e. no or minimal ewatering/permanent roundwater control equired. No measurable chang to embedded mitigati i.e. no or minimal dewatering/permane groundwater control required.	on - to embedded mitigation - i.e. no or minimal nt dewatering/permanent	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.
Quantitative	Groundwater Dependent Terrestrial Ecosystems (GWDTE) Test	None present within or in close proximity down- hydraulic gradient of ROI.	in None present within or in close proximity down- Nydraulic gradient of ROI. hydraulic gradient of	or in None present within or in 	None present within	superficial deposits W and an upper section w of the bedrock in the RC immediate vicinity of gr the foundations for lo the overbridge. Any EC impacts are likely to Ea be localised. Taking in into account the sc extent and depth of gr the superficial and de bedrock aquifers, no CC measurable changes Ca	inor localised impact on Mill 'ood, Castle Mill and Brickhill Woo hich are partially located within OI and might receive reduced roundwater contribution and wering of groundwater level. cclesfield Wood and Jackson's Ban ast are outside of the zone of fluence of Thorns Green cutting, o are unlikely to receive lowered roundwater level during ewatering for construction of the utting but the upstream atchments of the habitats may be ithin the ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	nt proximity down- expen hydraulic gradient habit of ROI. slight the P Scher locali small habit	is potential for from River East viaduct to groundwater aths to ink Wood and , Castle Mill , Castle	Piling ma flow of g the supe and an u of the be immedia the found the supe and an u of the be immedia the found the overl impact. and Ponds is dius of ay receive water flow in the adient of the ring the effects over a small	y obstruct the roundwater in ficial deposits oper section drock in the te vicinity of lations for rre likely to be Taking into he extent and the superficial ock aquifers, urable change impact on Wood and	or None present within or and in close proximity of th down-hydraulic imm gradient of ROI. the f the o	mediate vicinity of foundations for	lo measurable change t tue to embedded s initigation - i.e. no or s ewatering/permanen t groundwater control t equired.	downgradient of this feature and therefore may receive reduced groundwater flow due so interception bySunbank Wood and Ponds red Sunbank Wood and Ponds may receive lowered groundwater level in the ROI so red structures. This small areal extent of sche habitat, and flow radius of influence.Sunbank Wood and Ponds red groundwater level in the potential dewatering wall should minimise the dewatering needed.Sunbank Wood and Ponds red groundwater level in the structure covers a groundwater level in the in the structure covers a groundwater level in the structure covers a disco the surface wall should minimise the dewatering needed.Cor for the for the dewater disco the scheme downstream	bank Wood Ponds located ingradient of cutting ining wall so receive uced undwater flow to inteception elow ground ctures. sidering the cts of the ings cover a Ill areal extent he habitat, the act on this itat is minor.	idius inteception by below grou structures. Considering the		dewatering/permanent	Sunbank Wood and Ponds located downgradient of the cutting retaining wall so may receive reduced groundwater flow in the catchment due to Nc interception by below clo ground structures. hy Considering the effects of the cuttings cover a small areal extent of the habitat, the impact on this habitat is minor.	one present within or in ose proximity down- ydraulic gradient of ROI.	or in None present within or in None present v - close proximity down- ROI. hydraulic gradient of ROI. hydraulic gradi	vithin or in down- ent of ROI. None present within or in close proximity down- hydraulic gradient of ROI. None present within or in close proximity down- hydraulic gradient of ROI.
	Quantitative Good Good by Dependent Good 2015 Body Good	Ashley IMB-R may interce groundwater in superfici deposits that would otherwise provide basefi to Tributary of Birkin Bro 4. No measurable changes as embedded mitigation and proposed works are largely above ground. No measurable changes as embedded mitigation and proposed works are largely above ground. No measurable changes as embedded mitigation and proposed works are largely above ground.	tial superficial deposits the would otherwise provious deposite the proposed works are and drainage networe generation and embedded mitigation and watercourse diversion and drainage networe generation and entered mitigation and drainage networe generation and drainage networe and drainage networe generation and the proposed works are and drainage networe generation and the proposed works are and drainage networe and drainage networe diversion and drainage networe diversion and drainage networe diversion and drainage networe diversion and drainage networe diversions for the proposed works are and drainage networe diversions for the proposed works and d	hat vide vof ed low k) and are l. tary be be sse have the potential to obstruct groundwater flow towards the watercourses. However, any groundwater intercepted by the viaduct would discharge into the downstream tributary, Tributary of Birkin Brook 1, via the drainage system and watercourse diversions of the Proposed Scheme. As a result, the watercourses, particularly	Brook 1 and 2 are in close proximity to the overbridge which has the potential to obstruct groundwater flow towards the watercourses. Any impacts are likely to be localised but no measurable changes expected as temporary and permanent effects on groundwater flow into the watercourses due to embedded mitigation (bentonite	Tributary of BirkinletBrook 2 is in closethproximity to theThoverbridge which hasPrthe potential togrobstruct groundwaterGrflow towards themrwatercourse. Anyinimpacts are likely toGrbe localised. Noarmeasurable changesBrgroundwater flow intogrgroundwater flow intogrthe watercourses dueGrgroundwater flow intogrthe watercourses dueGrto embeddedflormitigation (bentonitegrand temporarybrcasing).dr	easonal springs 130m south-east nd 115m south-east of Pigleystair ridge, River Bollin and Pigleystair ridge, River Bollin are unlikely to b gnificantly impacted by a	None present within or in close proximity down-hydraulic gradient	nt None present within or in close proximity down-hydraulic gradient of ROI.		dwater that overbridge emake a minor the poten he baseflow of obstruct and its flow town indwater water ou he Ringway impacts a owever, be localised e River Bollin. As measura surable change flow to the expected etced. embedde (bentonit	in close (to the (ge which has (groundwater (ards the (tree likely to be (No (tree likely to be (No (tree likely to be (atter flow (due to (tree likely to be (tree likely t	n or flow area by the prox over the prox obst flow wate impa local mea grou expe emb (ben	tercourse. Any in o pacts are likely to be do	i lone present within or f n close proximity i own-hydraulic c	None present within or n close proximity	kimity down-	 and 3 are located within the ROI of the M56 East tunner which may intercept groundwater flow to these watercourses. Minor imparation as no mitigation is designed in the drainage network of the Proposed Scheme. Spring at Keepers Cottage, Sunbank Lane (south) and potential spring at Keeper Cottage, Sunbank Lane (north) are located within the ROI. Some groundwater flow feeding the springs mean be intercepted by the M56 	d None present within or in close proximity down- hydraulic gradient of ROI. hydraulic gradient of I					within or in down- ent of ROI. None present within or in close proximity down- hydraulic gradient of ROI. None present within or in close proximity down- hydraulic gradient of ROI.
		Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	temporary dewatering existing poor qualit	y existing poor quality	of pathways along which existing poor quality groundwater	of pathways along po which existing poor te	emporary dewatering or epressurisation and permanent	Creating or altering of pathways along which existing poor qualit groundwater can migrate	ys pathways along which existing	dewatering or	uality Creating y temporary of pathy which ex	Disturbing or mobilising existing or altering poor quality vays along groundwater by isting poor temporary roundwater dewatering or ate depressurisation a permanent groundwater cont	Creating or altering Creat of pathways along of pathways along which existing poor which	pathways along gro ich existing poor ter ality groundwater de n migrate de pe	emporary N	Creating or altering of pathways along which existing poor quality groundwater by aduality groundwater can migrate Disturbing or mobilising groundwater by temporary dewatering or depressurisation and permanent groundwater control	ring of existing poor quality hways along groundwater by ch existing temporary dewaterir	Creating or altering of pathways along which	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	h temporary dewatering or depressurisation and	Creating or altering of pathways along which	isturbing or mobilising xisting poor quality roundwater by emporary dewatering or epressurisation and ermanent groundwater ontrol	ch temporary dewatering or	g which temporary dewatering or pathways along which
	Chemical Saline Intrusions Good 2015 Good	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	 due to embedded mitigation - i.e. no or minimal dewatering/permanent dewatering/permanent 	due to embedded mitigation - i.e. no or minimal dewatering/permanent	changes due to embedded mitigation i.e. no or minimal dewatering/permane	changes due to embedded mitigation - No i.e. no or minimal sc dewatering/permanen m t groundwater control	o measureable changes due to ale of works and embedded itigation	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	changes due to embedded mitigation - i.e. no or minimal dewa	easurable es due to dded mitigation o or minimal ering/permane undwater ol required.	changes due to ation - i.e. no or ring/permanent	due to changes due to embedded mitigati minimal i.e. no or minimal ng/permanen dewatering/perman	changes due to char embedded mitigation - i.e. no or minimal i.e. r nen dewatering/permanen dewa	anges due to cha bedded mitigation - em no or minimal i.e. watering/permanen den	hanges due to c mbedded mitigation - e. no or minimal i ewatering/permanen c	No measurable changes due to embedded mitigation - .e. no or minimal dewatering/permanen : groundwater control required.	measurable nges due to bedded gation - i.e. no ninimal ratering/perma t groundwater trol required.	to embedded mitigation - i.e. no or minimal dewatering/permanent	ue No measurable changes due No measurable change to embedded mitigation - to embedded mitigati i.e. no or minimal i.e. no or minimal dewatering/permanent groundwater control groundwater control required. required.	on - to embedded mitigation - i.e. no or minimal t dewatering/permanent	to embedded mitigation - to i.e. no or minimal i.e. dewatering/permanent de	o measurable changes due o embedded mitigation - e. no or minimal ewatering/permanent roundwater control equired. No measurable chang to embedded mitigati i.e. no or minimal dewatering/permane groundwater control required.	i.e. no or minimal i.e. no or minim nt dewatering/permanent dewatering/per	nitigation -to embedded mitigation -to embedded mitigation -Iali.e. no or minimali.e. no or minimalmanentdewatering/permanentdewatering/permanent
	Chemical Drinking Water Protected Areas Good 2015 Good	d None in community area MA06. MA06.	a None in community area None in community a MA06.	area None in community area MA06.		None in community area MA06.	one in community area MA06.	None in community area MA06.	None in community None area MA06.	in community /A06.	nity area MA06. None in a area MA0	ommunity None in community 6. area MA06.	-	-	-	None in community None in community area MA06. MA06. MA06.	le in Imunity area 06.	ea None in community area	None in community area None in community a MA06.	ea None in community area MA06.	None in community area No MA06. MA	one in community area None in community a IA06. MA06.	rea None in community area None in comm MA06. MA06.	unity area None in community area None in community area MA06.
Chemical	Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	None present within or in or close proximity down- hydraulic gradient of ROI. None present within or i close proximity down- hydraulic gradient of ROI.	in None present within or in close proximity down- DI. hydraulic gradient of ROI. hydraulic gradient of	n- close proximity down-	or in close provimity	and surface water quality during construction near to Ecclesfield Wood. This will be mitigated		None present within or in close proximity down-hydraulic gradient of ROI. t	None present Wood within or in close Mill. ¹ proximity down- poter hydraulic gradient grour of ROI. surfa durin near will b throu imple	tial to alter	al for impacts on ality to Wood e and Sunbank s during the ase. This will be gh of the draft of the draft ase. This will lo construc through impleme draft Coo	ater quality to groundwater qualit Wood and Wood near Chapel ring the Lane SBI during the ion phase. construction phase	y to groundwater quality to grou	nundwater quality to gro hbank Wood and Sun nds during the Poinstruction phase. cor	roundwater quality to g unbank Wood and S onds during the F onstruction phase. c	Sunbank Wood and Ponds during the construction phase. This will be during the construction wo	Proposed eme has ential to The Proposed Scheme act potential to impact undwater groundwater quality to lity to Sunbank Sunbank Wood and Po od and Ponds od and Ponds during the construction ng the phase. This will be struction managed through se. This will be implementation of the lementation of draft CoCP.	has The Proposed Scheme has potential to impact groundwater quality to Sunbank Wood and Ponds during the construction phase. This will be manage through implementation of the draft CoCP.	None present within or in close proximity down- hydraulic gradient of ROI.	Sunbank Wood and Ponds during the construction phase. This will be managed	potential to impact groundwater quality to Sunbank Wood and Ponds	ose proximity down-	- close proximity down- close proximity	vithin or in down- ent of ROI. None present within or in close proximity down- hydraulic gradient of ROI. hydraulic gradient of ROI.
	Chemical Poor Good by 2027 Dependent Poor 2027 Body Image: Superstand S	There is potential to impact groundwater quality to Tributary of Birkin Brook 4 which is located partly within the land required for construction. This will be mitigated through the implementation of the draft CoCP.	k 4 No measurable changes close to the land requ k 4 due to embedded for construction, and mitigation - i.e. no or major realignment ar d for minimal culverting works are dewatering/permanent proposed on the	hin or Jired Construction works have the potential to affect groundwater quality to Tributary of Birkin Brook 2 and 3. This will be Brook mitigated through the implementation of the	The temporary construction works have the potential to affect groundwater quality to Tributary of Birkin Brook 1 and 2. This will be mitigated through the implementation of the draft CoCP.		ne temporary construction works ave the potential to affect roundwater quality to Tributary of irkin Brook 2 and River Bollin. This ill be mitigated through the nplementation of the draft CoCP.	None present within or in close proximity down-hydraulic gradient of ROI.	None present have within or in close affect proximity down- hydraulic gradient Bollir of ROI. mitig the in	Imporary Fuction works he potential to groundwater y to the River This will be ted through draft CoCP. This will se ted through the implementation draft CoCP.	botential to have the ter quality to the its tributaries. quality to gated through River Bol tion of the draft be mitige	ion works potential to undwater Tributary of in 3. This will ted through mentation of	n or None present within or in close proximity down-hydraulic gradient of ROI.	e temporary hstruction works ve the potential to ect groundwater ality to Tributary of er Bollin 3. This will mitigated through implementation of e draft CoCP.	lone present within or f n close proximity i own-hydraulic c radient of ROI. §	None present within or n close proximity down-hydraulic gradient of ROI. None present within or in close proximity down- hydraulic gradient of ROI. of F	the potential to affect in or in close iximity down- raulic gradient Ol. the potential to affect groundwater quality to Tributary of River Bollin and 3. This will be mitig		n None present within or in close proximity down- hydraulic gradient of ROI. Non				or in None present within or in Close proximity down-Close proximity down-Nydraulic gradient of ROI.	vithin or in down- ent of ROI. None present within or in close proximity down- hydraulic gradient of ROI. None present within or in close proximity down- hydraulic gradient of ROI.
	General Chemical Test Poor 2027 Poor	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	e are No measurable change on No measurable change waterbody status due to waterbody status due	due to embedded ge on mitigation - i.e. no or e to minimal n. dewatering/permanent	No measurable changes due to embedded mitigation i.e. no or minimal dewatering/permane nt groundwater control required.	changes due to embedded mitigation - i.e. no or minimal dewatering/permanen	mbaddad mitigation	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	easurable es due to dded mitigation No measurable o o or minimal scale of works re ering/permane undwater ol required.	dewateri	urable due to d mitigation- minimal ng/permanen vater control	le No measurable changes due to scale of works relative to water body size.	bedded mitigation -	hanges due to scale of fworks relative to	of works relative to be relative to water body		to scale of works relative t	No measurable changes due to scale of works relative to water body size. No measurable change to scale of works relat water body size.	ve to to scale of works relative to	No measurable changes due to	o measurable changes due o embedded mitigation - e. no or minimal ewatering/permanent roundwater control equired. No measurable chang to embedded mitigati i.e. no or minimal dewatering/permane groundwater control required.	nt No measurable changes due No measurable to scale of works relative to water body size. No water body size	changes due se relative to . No measurable changes due to scale of works relative to water body size. No measurable changes due to scale of works relative to water body size.

Weaver and I	Dane Quaternary Sa	ternary Sand and Gravel Aqu nd and Gravel Aquifers ifer (undifferentiated))	uifers (GB1202G991700) detailed impact Detailed Impact Assessme		rrent status etailed Impact Assessment	Detailed Impact Assessment	Detailed Imp	pact Assessment		etailed Impact Detailed Impact Assessment Assessment	Detailed Impact Assessment	Detailed Impact Assessment	τ	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessme	nt		Detailed Impact Assessment	t Outcome	
EA Managem Catchment:	nent North West GW	Scheme component	(ID): GB41202G991700-RT-161		GB41202G991700-CR-162	GB41202G991700-C-163	GB41202G	991700-CR-164	OF-165	341202G99170 GB41202G991700- 0-OF-166 OF-167 Overbridge Overbridge	GB41202G991700-ST-168	GB41202G991700-RT-169	0-OF-170	GB41202G991700- OF-171	GB41202G991700-TP-172	GB41202G991700-BT-173	GB41202G991700-RT-174	GB41202G991699-VT-175					
Overall Statu (2015):	us Poor	Scheme component t	type: Retaining Wall ame: A538 Wilmslow Road offline retain	Manchester Air	tting with retaining structure port High Speed Station cutting retain wall south	Cutting hing Manchester Airport High Speed Station cutting	Manchester Airport High Spe	retaining structure eed Station cutting retaining wa	Foundations F	Foundations Foundations 538 Hale Road Hasty Lane NMU overbridge underpass	Station/Depot Manchester Airport High Speed Statio	Retaining Wall Oavenportgreen Wood offline reinf soil retaining wall	Overbridge Foundations forced Raised Metrolink overbridge	Foundations	Tunnel Portal Manchester Tunnel South porous portal	Bored Tunnel Manchester Tunnel	Retaining Wall Altrincham Road vent shaft access road ret wall	ining Altrincham Road vent shaf	Cumulativ	e			
Overall Statu Objective: WFD Status Element	Good by 2027	Impact type from schr compon 2015 RBMP Cycle 2 Status Objective	Lowering of Lowering of groundwater levels and potential reduction in groundwater "Dam contributions to surface groundwater water bodies, GWDTE or and regroundwater groundwater groundwater	Lowering of gro levels and po reductio ming" of groundw water flow contributions to duction in water bodies, ndwater groundw ibutions abstractio tempor dewatering/po groundwater	otential n in ater "Damming" of groundwa GWDTE or GWDTE or groundwater contributions by ary ermanent data of the second s	n water bodies, GWDTE or flow and reduction in	water bodies, GWDTE or	"Damming" of groundwate flow and reduction in	er groundwater flow groundwater flow groundwater flow groundwater flow groundwater flow groundwater gr	(north) extension Damming" of "Damming" of groundwater groundwater flow and flow and reduction in reduction in groundwater groundwater ontributions contributions	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	ater d d n in ater d water bodies, GWDTE or groundwater groundwater groundwater groundwater ground flow ground flow ground ground flow ground ground flow ground ground flow ground ground flow ground ground flow ground ground flow ground ground flow ground ground ground flow ground ground ground flow ground ground ground flow ground grou	ning" of "Damming" of Iwater groundwater	"Damming" of groundwater flow and reduction in groundwater contributions dew	ering of groundwater vels and potential ction in groundwater tributions to surface er bodies, GWDTE or ndwater abstractions by temporary vatering/permanent oundwater control	in water bodies, GWDTE or flow	water contributions to surface and water bodies, GWDTE or on in groundwater water abstractions by contribution	flow contributions to surface "Damming" n in water bodies, GWDTE or flow and er groundwater abstractions groundwate	reduction in water bodi	M Overall effect on quali element at water bod scale	Additional mitigation	Residual effect on quality element at wate body scale	WFD compliance outcome - potential fo deterioration of current status of quality element at water body scale
	Quantitative Saline Intrusio	ns Good Good by Go	saline intrusions due to intrusion scale of works relative to scale of	on saline No measurable s due to saline intrusions works scale of works re to water water body scale	s due to saline intrusions due to so of works relative to water				e change due to cha embedded emb mitigation and scale miti	measurable No measurable ange due to change due to ibedded embedded tigation and mitigation and ale of works. scale of works.		No measurable change on saline intrusions due to scale of works relative tochange of intrusions scale of works	as due to intrusions due to works scale of works o water relative to water	change on saline No me intrusions due to saline scale of works of wor	easurable change on No measurable change intrusions due to scale saline intrusions due to rks relative to water of works relative to wate scale. body scale.	scale see embedded mitigation. bgl. The pr	winn Iss ength, rnal A5.0m No measurable changes on saline intrusions due too scale of works relative to water body scale. ensaline s this s this ociated erm	Onlikely to be affected at a Unlikely to be water body scale compared to scale of works. There is no to scale of works affected at a Unlikely to b water body scale of works to scale of works affected at a value of water at existing known saline wat	orks. There is no identified	status of quality element anticipated at water body	n. understand the risks of drawing poor quality water into the aquifer	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	e Compliant - no deterioration in quality element status anticipated
	Quantitative Water Balance	Good Good by 2015 Go	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	ed No measurable on - i.e. no due to embedde	ed to embedded mitigation a		e No measurable change due to embedded mitigation and scale of works.		to change due to cha embedded emb mitigation and scale initi	measurable ange due to ibedded tigation and ale of works.	The groundwater impacts as a result of t station will be dominantly due to the earthworks of the cuttings and retaining	mitigation - i.e. no or change di minimal embedde dewatering/permanent mitigation groundwater control scale of w required. scale of w	surable No measurable due to change due to ed embedded n and mitigation and works. scale of works.	change due to embedded mitigation and scale groun	easurable change due bedded mitigation - i.e. minimal rering/permanent dwater control red. No measurable change to embedded mitigatior scale of works.	Isee embedded miligation. Tevel due t	win diseach ameter. creates d no flow no flow hanges due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required. No measurable change due to embedded mitigation and of works.		cale compared identified	status of quality element	investigations needed to n. understand the groundwater levels and the likely complex heterogeneous nature of	considered in combination. However no deterioration in status of	Compliant - no deterioration in quality element status anticipated
Quantitative	Groundwater Dependent Terrestrial Ecosystems (GWDTE) Test	Good Good by 2027 Go	None present within or in vithin or close proximity down- hydraulic gradient of ROI. of ROI.	is within the zon influence of M56 tunnel and Man Airport High Spe cutting retaining south meaning t be localised cha y down- c gradient supporting this l due to dewaterin Some groundwa feeding the sprin	6 Eastof M56 East tunnel and Manchester Airport High Speed Stationaed StationSpeed Station cutting retaining wall south mean there may be localised changes in groundwater fl velabilityinterception by the cutting nges ater flow a structures to reduce synumbank to the to the sto abilitychanges in groundwater flow interception by the cutting optimity structures. There ater flow a structures to reduce structures to reduce to the to the structures to make the structures to make the to the structures to make the str	ceis within the zone of influence of M56 East tunnel and ManchesterSunbank Wood and Pondes within the zone of influence of M56 East tunnel and be localised changes in be localised changes inSunbank Wood and Pondes within the zone of influence of M56 East tunnel and be localised changes in be localised rhanges in the groundwater levelSpeed Station cutting meaning there may be localised changes in e localised changes in supporting the springs at keepers Cottage, Sunbank Lane may lower, leading to ground works.	e	None present within or in close proximity down- hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI	ne present None present hin or in close proximity down- draulic hydraulic gradient dient of ROI. of ROI.	walls which have been assessed separat The remainder of the station will be buil following these earthworks and therefor be "above ground". Whilst minor effects anticipated (as a result of additional foundations etc) due to embedded mitigation strategies of the earthworks prior to the construction of the station, r measurable changes are expected.	ilt pre s are None present within or in close proximity down- proximity	y down- proximity down-	down-hydraulic	present within or in present within or close proximity down-ulic gradient of ROI.	Sandstone) and therefore	antly dstone pod o and s and s mpact water	walls through the shallow	e affected at a scale compared orks.	status of quality element	investgations needed to n. understand the in groundwater levels and	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status anticipated
	Quantitative Dependent Surface Water Body	Good Good by 2015 Go	None present within or in close proximity down- hydraulic gradient of ROI.	r in close None present w y down- close proximity o	ithin or in down- nt of ROI.	close proximity down- close proximity down-	Hasty Lane is located within the ROI of the cutting . This feature will be lost during construction, together with any groundwater flow feeding the potential spring. The potential spring discharges into Tributary of Timperley Brook 1, which may receive localised reduced baseflow due to the loss of the spring (and interception of groundwater by the cutting retaining wall). However, drainage will be discharged to Tributary of Timperley Brook downstream of the route of the Proposed Scheme.	Scheme. Therefore, a short section of the brook, approximately 300m in leng may receive reduced	e None present within or in close proximity down-hydraulic gradient of ROI.	ne present hin or in close proximity down- draulic dient of ROI.		Timperley Brook may receive reduced baseflow due to the lowering of groundwater level during dewatering for the retaining wall.The Proposed Scheme crossing is proposed as an inverted siphon with an outfall at the retaining wall. This will lower the impact from lowering groundwater levels as the watercourse will be in pipe. Timperley may recei reduced baseflow the interco of ground wall. The scheme of crossing is proposed as an inverted siphon with an outfall at the retaining groundwater levels as the watercourse will be in pipe.	reduced baseflow due to the interception of groundwater by the below ground structures of the overbridge. The Proposed Scheme crossing is proposed as an inverted siphon. This will reduce the impact of the interception of groundwater flow as the watercourse will	None present within Propo or in close proximity Fairyw down-hydraulic of the gradient of ROI. Propo a shor watero receiv Howe scale o compa reduct	sed Scheme into vell Brook downstream crossing with the sed Scheme. As such, it stretch of the course (20m) will e reduced baseflow. ver, considering the of this watercourse ared to the area of ed flow, no urable changes	he this a. Any d by rged is of to eam inch, a w. ea w. to to to to to to to to to to	bedrock antly dstone ood and s impact water	inity vicinity of the shart. Some Unlikely to b localised effects from water body s	e affected at a icale compared orks.	However no deterioration	TBC - Further investigations needed to understand the groundwater levels and the likely effects on GWDTEs.	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status anticipated
			Disturbing or mobilising Creating existing poor quality altering groundwater by pathwa temporary dewatering which e or depressurisation and permanent groundwater control migrate	of existing poor q ys along groundwater by xisting temporary dew ality depressurisation	uality y vatering or on and vatering or or and vatering or existing poor quality groundwater can migrat	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of pathways along which existing poor quality groundwater can migrate	altering of alte pathways along pat which existing whi poor quality poo groundwater can gro	ering of altering of thways along pathways along iich existing which existing or quality poor quality	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	h h temporary dewatering or depressurisation and permanent groundwater control can migr	of altering of ys along pathways along kisting which existing ality poor quality vater groundwater	altering of existing pathways along ground which existing deways	rbing or mobilising ng poor quality Idwater by temporary tering or sssurisation and anent groundwater ol	temporary dewatering or which exis depressurisation and poor qual	existing poor quality along groundwater by temporary dewatering or ty depressurisation and groundwater of groundwater by	ong poor poor an depressurisation and permanent groundwater control	long which or quality er can migrate				
	Chemical Salin Intrusions	e Good Good by 2015 Go	due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	surable due to ed in - i.e. no hal ing/perman ndwater equired.	ed No measurable changes d to embedded mitigation - no or no or minimal dewatering/permanent groundwater control	I due to empedded	to embedded mitigation - i.e. no or minimal dewatering/permanent	 No measurable changes due to embedded mitigation - i.e no or minimal dewatering/permanent groundwater control require 	e changes due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required. cha	measurable anges due to bedded tigation - i.e. or minimal watering/perm ent pundwater ntrol required.		No measurable changeschangesdue to embeddedembeddedmitigation - i.e. no ormitigatiorminimalno or mindewatering/permanentdewateringgroundwater controlmanentrequired.groundwater	ed embedded n - i.e. mitigation - i.e. nimal no or minimal ng/per dewatering/perm	changes due to No me embedded to eml mitigation - i.e. no no or or minimal dewat dewatering/perman groun ent groundwater requir control required.	ering/permanent dewatering/permanent	- i.e. http://witigation - i.e. no or minimal dewatering/permanent of creating	g which the risk a due to embedded mitigation - i.e. no or minimal dewatering/permanent	Some localised effects from dewatering may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation (secant pile walls in superficial deposits) to limit the requirement for dewatering. Impacts will be localised and relatively short term. There is no existing known saline water at depthdewatering is dewatering is dewatering is dewater at depthSome localised and relatively short known saline water at depthImpact superficial depthImpact superficial dewatering.	but these are pact waterbody o embedded sing SCL n a sequentially rocess with ment as hecessary). be localised and be localised and port term. There is nown saline th so low risk of hanges in r quality during	status of quality element anticipated at water body	investigations needed to n. understand the risks of drawing poor quality water into the aquifer	considered in combination. However no deterioration in status of	Compliant - no deterioration in quality element status anticipated
	Chemical Drinking Wate Protected Area (DrWPAs)		Dod None in community area None in AMA06.		nity area None in community area MA06.	None in community area MA06. MA06.	None in community area MA06.	None in community area MA06.	None in community	ne in None in mmunity area .06. MA06.		None in community area MA06. MA06.	None in community area MA06.	None in community None area MA06. MA07.	in community area None in community are MA07.	a None in community area None in community area MA07. MA07.	varea None in community area None in comm MA07. area MA07.	Inity None in community area None in com MA07. MA07.	munity area None identified		n. Additional mitigation not required.	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	Compliant - no deterioration in quality element status anticipated
Chemical	Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Poor Good by Po 2027 Po	None present within or in close proximity down- hydraulic gradient of ROI. of ROI.	r in close y down- c gradient c gradient c gradient c gradient c gradient c gradient	Sunbank Wood and Ponds Iocated in close proximity west and down-hydraulic gradient of the proposed works. There is potential fi localised impact at this GWDTE and the springs at Keepers Cottage, Sunbank	t the springs at Keepers Cottage, Sunbank Lane and further investigation is	None in community area	None in community area MA06.	or in close proximity down-hydraulic gradient of POL	ne present None present hin or in close within or in close proximity down- draulic hydraulic gradient adient of ROI. of ROI.	The groundwater impacts as a result of t station will be dominantly due to the earthworks of the cuttings and retaining walls which have been assessed separat The remainder of the station will be buil following these earthworks and therefor be "above ground". Whilst minor effects anticipated (as a result of additional foundations etc) due to embedded mitigation strategies of the earthworks prior to the construction of the station, r	MA06. g ately. ilt ore s are	None in community area MA06.	Ponds adjacent to close p	present within or in present within or close proximity down-ulic gradient of ROI. hydraulic gradient of RC	mitigation impacts to	e below el. With impacts in ROI,		ed on Blackcarr aguley Bottoms e unlikely to None body status due d mitigation (use ed walls through	status of quality element	investigations needed to understand the groundwater levels and the likely complex heterogeneous nature of	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status anticipated
	Chemical Dependent Surface Water Body	Poor Good by Po	poor close proximity down- proximit	r in close None present w y down- close proximity o	ithin or in None present within or in down- close proximity down- nt of ROI. hydraulic gradient of ROI.	close proximity down- close proximity down-	works have the potential to affect groundwater quality to Tributary of Timperley Brook 1, 2 and 3, and Timperley Brook. This will be mitigated	The temporary construction works have the potential to affect groundwater quality to Tributary of Timperley Brool 1, 2 and 3, and Timperley Brook. This will be mitigated through the implementation of the draft CoCP.	None present within or in close proximity down-hydraulic gradient of ROI.	ne present None present hin or in close within or in close proximity down- draulic hydraulic gradient dient of ROI. of ROI.	measurable changes are expected.	Timperley Brook is intersected by the proposed works. There is potential for it to be impacted but no measurable changes are expected due to embedded mitigation	Tor it toFor it to bected butimpacted but nourablemeasurablearechanges ared due toexpected due toedembedded	or in close proximity down-hydraulic gradient of ROI. mitiga	vell Brook is located the ROI but no urable changes ted due to embedded tion.	of works are below ground level. With embedded mitigation impacts to	None present within or in close proximity down- hydraulic gradient of ROI.	imity of Baguley Brook 1. This will of Baguley B be mitigated through the be mitigated implementation of the draft implementa	he potential to dwater quality to ok and Tributary rook 1. This will through the cion of the draft ng in a negligible tributary is in e immediate	that there could be deterioration in the status	Further investigations Further investigations needed to understand the groundwater levels and the likely complex heterogeneous nature of the aquifer.	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status
	General Chemical Test	Poor Good by 2027 Po	Some localised effects n may be anticipated but these are unlikely to impact waterbody status due to embedded waterbody	hay be ed but e unlikely t dy status mbedded	tor surface water to discharge directly to the bedrock. This could cause change in groundwater	n Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation. embedded mitigation. Some localised effects may be anticipated but these are unlikely to impact directly to the bedrock. The implementation of the draw of the superficient of the draw of the superficient of the superficient of the draw of the superficient of the s	art Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	surface water to discharge	vill f No measurable changes due to embedded miti arbitigation - i.e. no or minimal dewatering/perman ent groundwater control required. Majority of works for overbridge to take place above take place above	measurable anges due to ibedded tigation - i.e. or minimal watering/perm ent pundwater htrol required. jority of works overbridge to te place above pund level.		No measurable changes due to scale of works relative to water body size. No measurable changes scale of w relative to body size	due to dewatering/perm works anent o water groundwater e. control required. Majority of works	No measurable changes due to embedded mitigation - i.e. no No me or minimal to eml dewatering/perman no or ent groundwater dewat control required. groun Majority of works requir for overbridge to take place above	ering/permanent dewatering/permanent	- i.e. due to embedded embedded embedded embedded mitigation - i.e. no or minimal dewatering/permanent or minima	ve to No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control dewatering/permanent groundwater control trequired	be anticipated anticipated but these are unlikely to impact waterbody status due to embedded mitigation (a contingency action plan will be agreed with the Environment Agency, prior to the start of construction, with agreed actions in place if changes in water guality are	contingency vill be agreed ironment Agency, start of , with agreed ace if changes in v are observed ndwater	that there could be deterioration in the status	Further investigations Further investigations needed to understand the groundwater levels and the likely complex heterogeneous nature of the aquifer.	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status

		andstone Aquifers (GB41201G101700) detaile	d impact assessment - ef									
	eyside Permo-Triassic Sandstone Aquifers	(GB41201G101700) (Principal aquifer)		Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment			Detailed Impact Assessment Outcome		
EA Management Catchment:	North West GW		Scheme component (I Scheme component ty		GB41201G101700-OF-02 Overbridge Foundations	GB41202G991700-HD-13a Highways Drainage discharge	GB41202G991700-HD-21a Highways Drainage discharge	_				
Overall Status (2015):	Poor		Scheme component nan	e: Cutting e: Millington cutting	Millington Lane overbridge	3 highways drainage discharges into Culcheth Linear Drain 1						
Overall Status Objective:	Good by 2027	Impact	type from scheme compone					Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	Overall effect on quality element at water body scale	Additional mitigation requirements	Residual effect on quality element at water body scale	WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
WFD Status Element	WFD Quality Element	2015 RBMP Cycle 2 2015 RBMP Cycle 2 Status Status Objective	2019 Status	contributions to surface water bodies. GWDTF or groundwater abstractions by	roundwater flow and reduction in "Damming" of groundwater flow and reduction in ndwater contributions groundwater contributions							
	Quantitative Saline Intrusions	Poor Good by 2027	Poor	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	No measurable change expected from saline intrusions due to scale of works relative to water body scale.			None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.	Compliant - no deterioration in quality element status anticipated
	Quantitative Water Balance	Good Good by 2015	Good	Localised and temporary effect when balanced against embedded mitigation. Cutting is 11m deep and extends for 1462m and intersects Agden Brook. No information on groundwater levels in the sandstone in this area, so on a precautionary basis assumed to be at ground level. Dewatering likely to be required due to depth of groundwater and nature of works. Therefore lowering in groundwater levels anticipated which could impact water balance in this small area of Sandstone.	No measurable change due to scale of works and embedded mitigation.			None identified	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status anticipated
Quantitative	Groundwater Dependent Terrestria Ecosystems (GWDTEs) Test	I Good Good by 2015	Good	Millington cutting radius of influence includes part of Rostherne Mere and Yarwood Heath Covert. Groundwater in this area could be intercepted and lowered within the radius of influence. Impact anticipated on groundwater spring flows into Rostherne Mere Ramsar site/SSSI. Track drainage from the cutting will be pumped to recharge trenches above the mere to ensure no measurable change on water levels in Rostherne Mere. The timing of the recharge may be different to the timing of natural groundwater discharge. However, the additional discharge from the extended area of the cuttings would mean that the total discharge exceeds the natural groundwater discharge area.	None present within or in close proximity down-hydraulic gradient of ROI.			None identified	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status anticipated
	Quantitative Dependent Surface Water Body	Good Good by 2015	Good	Agden Brook is within the radius of influence of Millington cutting so groundwater level may be reduced in proximity to the watercourse. However, this watercourse is lkely to be supported by the overlying superficial deposists rather than the Sandstone. Any water intercepted by the drainage system would be discharged into Agden Brook approximately 80m downstream of the Proposed Scheme so there would be a reduction in flow along this stretch of the Agden Brook reach, leading to a minor localised impact on groundwater flow to Agden Brook.	None present within or in close proximity down-hydraulic gradient of ROI.			None identified	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	Compliant - no deterioration in quality element status anticipated
				Disturbing or mobilising existing poor quality groundwater by temporaryCreating or altering of pdewatering or depressurisation and permanent groundwater controlquality groundwater ca		Creating or altering of pathways along which existing poor quality groundwater can migrate	Creating or altering of pathways along which existing poor quality groundwater can migrate					
	Chemical Saline Intrusions	Poor Good by 2027	Poor	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.			None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.	Compliant - no deterioration in quality element status anticipated
	Chemical Drinking Water Protected Areas (DrWPAs)	Poor Good by 2027	Poor	None in community area MA06.	None in community area MA06.			None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.	Compliant - no deterioration in quality element status anticipated
Chemical	Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Te		Good	The radius of influence of Millington cutting includes Rostherne Mere and Yarwood Heath Covert. There is the potential to alter groundwater and surface water quality during temporary dewatering for construction near to these habitats. This will be mitigated through the implementation of the draft CoCP.	None present within or in close proximity down-hydraulic gradient of ROI.			None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.	Compliant - no deterioration in quality element status anticipated
	Chemical Dependent Surface Water Body	Poor Good by 2027	Poor	The temporary construction works have the potential to affect groundwater quality to Agden Brook. This will be mitigated through the implementation of the draft CoCP.	None present within or in close proximity down-hydraulic gradient of ROI.			None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.	Compliant - no deterioration in quality element status anticipated
	General Chemical Test	Good Good by 2015	Poor	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.the cutting, creating a sho discharge into the bedroo groundwater chemistry. H	some superficial deposits along the line of horter pathway for surface water to bock. This could cause a change in However, no measurable changes are e scale of works relative to water body tigation.	Some localised effects may be anticipated but likely to be restricted to the superficial deposits, pending further investigations.	Some localised effects may be anticipated but likely to be restricted to the superficial deposits, pending further investigations.	None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	N/A	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.	Compliant - no deterioration in quality element status anticipated

	hire East Permo-Triassic Sandstone Aqui ermo-Triassic Sandstone Aquifers (GB120 North West GW		er)	Scheme component (IE	-	act Assessment 01100-BT-01		act Assessment 01100-VT-02		act Assessment 01100-VT-03		pact Assessment 5101100-VT-04		pact Assessment G101100-TP-05		oact Assessment 101100-CR-06	-	oact Assessment 101100-RT-07
Overall Status (2015):	POOR			Scheme component typ Scheme component nam	e: Bored	l Tunnel ster Tunnel	Ven	t Shaft es vent shaft	Ven	t Shaft pad vent shaft	Ve	nt Shaft Road vent shaft	Tun	nel Portal nel North porous portal	Cutting with re	etaining structure utting retaining wall	Retai	ning Wall box structure
Overall Status Objective: WFD Status Element	GOOD BY 2021 WFD Quality Element	2015 RBMP Cycle 2 Status	Impact type	from scheme componen		"Damming" of groundwater flow and reduction in groundwater contributions	Lowering of groundwater levels and potential reduction in groundwater		Lowering of groundwater levels and potential reduction in groundwater d contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater	"Damming" of groundwater flow and reduction in groundwater contributions	Lowering of groundwater levels an potential reduction in groundwate	d "Damming" of groundwater flow an reduction in groundwater contributions	Lowering of groundwater levels ar potential reduction in groundwater d contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater	d er "Damming" of groundwater flow an reduction in groundwater contributions	Lowering of groundwater levels and potential reduction in groundwater	"Damming" of groundwater flow and reduction in groundwater contributions	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwate	d "Damming" of groundwater flow ar reduction in groundwater contributions
	Quantitative Saline Intrusions	Poor	Good by 2021	Poor	control No dewatering along the tunnel itself as TBM in use - see embedded mitigation. Thus, no lowering of groundwater levels anticipated.	diameter and maximum 45.0m bgl. The	control Minimal dewatering required due to use of full depth diaphragm walls at The Hollies vent shaft (internal dewatering only)	Unlikely to be affected at a water body	control The construction methodology of the vent shaft assumes that external dewatering is not permitted. Diaphragm walls are not proposed as vent shaft is	Unlikely to be affected at a water body scale compared to scale of works.	control Shaft located in an isolated block with no flow boundaries on three sides. The construction methodology of the vent shaft assumes that external dewaterin	Unlikely to be affected at a water body scale compared to scale of works.	control No measurable change expected from	No measurable change expected from	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	No measurable change expected from	control No measurable change expected from	No measurable change expected from
	Quantitative Water Balance	Good	Good by 2015	Good	No dewatering along the tunnel itself as TBM in use - see embedded mitigation. Thus, no lowering of groundwater levels anticipated.	groundwater level due to a partial	temporary in nature, therefore unlikely to be affected at a water body scale.	Unlikely to be affected at a water body	Construction methodology (such as grouting, dewatering with ejector wells) will minimise the dewatering requirements. Dewatering volume will small and temporary in nature, therefore unlikely to be affected at a water body scale.	Linikely to be affected at a water body	Construction methodology (such as grouting, dewatering with ejector wells will minimise the dewatering requirements. Dewatering volume will small and temporary in nature, therefore unlikely to be affected at a water body scale.	 Scale compared to scale of works. Basement fan room could form a barri to groundwater flow in the superficial glacial till which could lead to localised displacement of groundwater and 	er No measurable change on quantitativ	e Superficial deposits are fully penetrate by the portal. The below ground stuctures may form a barrier to groundwater flow in the superficial aquifer but on the scale of the aquifer no measurable change is expected.	No measurable change on quantitative water balance due to scale of works relative to water body scale	Groundwater flow is not parallel to the cutting, hence the cutting is likely to partially form a barrier to groundwater flow, leading to a localised risk of groundwater flooding on the upgradient side (refer to the flood risk assessment, Volume 5, WR-005-0MA07).	water balance due to scale of works relative to water body scale.	
Quantitative	Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Good	Good by 2015	Good	The tunnel will consist of twin bore tunnels 12.8km in length, 7.55m internal diameter and maximum 45.0m bgl. No dewatering along the tunnel itself as TBM in use - see embedded mitigation. Thus, no lowering of groundwater levels anticipated.	At shallow depth the tunnel may act as a localised groundwater dam, but no measurable change expected on flow to GWDTE	Stenner Woods and Milgate Fields, Didsbury and Fletcher Moss and Wrengate Wood & Heycroft are located within the ROI. Due to embedded mitigation (full depth diaphragm walls) no measurable change to the habitat from the impact of dewatering is expected.	No measurable change expected on habitats from intercepting groundwater flow to Stenner Woods and Milgate Fields, Didsbury and Fletcher Moss and Wrengate Wood & Heycroft when considering scale of works compared to the water body scale.	None present within ROI of vent shaft dewatering.	None present within ROI of vent shaft dewatering.	None present within ROI of vent shaft dewatering.	None present within ROI of vent shaft dewatering.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.
	Quantitative Dependent Surface Water Body	Good	Good by 2015	Good	The tunnel will consist of twin bore tunnels 12.8km in length, 7.55m internal diameter and maximum 45.0m bgl. No dewatering along the tunnel itself as TBM in use - see embedded mitigation. Thus, no lowering of groundwater levels anticipated.	localised groundwater dam, but no measurable change expected on flow to	some short term localised effects on	River Mersey and Tributary of River Mersey 2 are unlikely to be affected at a	Isomo minor short term localised attacts	Unlikely to be affected at a water body	Fallowfield Brook, Cringle Brook, Tributary of Cringle Brook 1, Gore Broo and Tributary of Platt Brook 1 are fully or partially in culvert in the vicinity of the shaft and since internal dewatering fro the shaft will be small quantities and temporary in nature, no measurable change is expected on the surface wate bodies.	he Unlikely to be affected at a water body scale compared to scale of works.	lowering of groundwater levels may reduce contribution to this watercours Corn Brook is culverted in the vicinity the portal, and therefore, it is unlikely receive groundwater flow in this area.	nd groundwater that would otherwise discharge into this watercourse may be see intercepted by below ground structure of However, Corn Brook is culverted in th to vicinity of the portal and therefore, it i unlikely to receive groundwater flow in	es. vicinity of the portal and is unlikely toreceive groundwater flow in this area.s No measurable change is expected from	intercepted by below ground structures. Corn Brook is culverted in the vicinity of the portal and is unlikely to receive groundwater flow in this area. No measurable change is expected from the portal on the river flow. River Medlock is outside of the ROI but	Corn Brook is located within the ROI and may receive reduced groundwater levels. Corn Brook is culverted in the vicinity of the portal and is unlikely to receive groundwater flow in this area. No measurable change is expected from the portal on the river flow.	intercepted by below ground structure Corn Brook is culverted in the vicinity the portal and is unlikely to receive groundwater flow in this area. No measurable change is expected from the portal on the river flow. River Medlock is outside of the ROI bu
					Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of pathways along which existing poor quality groundwater can migrate	Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	along which existing poor quality	Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	along which existing poor quality	Disturbing or mobilising existing po quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	d along which existing poor quality	Disturbing or mobilising existing po quality groundwater by temporar dewatering or depressurisation ar permanent groundwater control	d along which existing poor quality	duality groundwater by temporary	along which existing poor quality	Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	along which existing poor quality
	Chemical Saline Intrusions	Poor	Good by 2021	Poor	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.		Winimal dewatering required due to use of full depth diaphragm walls at The Hollies vent shaft (internal dewatering only).	Due to construction methodology any pathways would be sealed once the concrete had set. Unlikely to impact	Temporary lowering of groundwater levels could lead to upconing of deeper poor quality (connate) or drawdown of near surface (anthropogenically contaminated) water. However, considering that the construction methodology assumes that external dewatering is not permitted and the limited period of dewatering, the waterbody status is unlikely to be impacted. Diaphragm walls are not proposed as vent shaft is located in the Sherwood Sandstone.	Some minor localised short term effect may be anticipated but construction methodology (pathways would be progressively sealed in a staged and sequentially controlled process during construction, likely by SCL and injection grouting will be implemented if required) mean waterbody status is unlikely to be impacted.	levels could lead to drawing in of poor quality water from the adjacent Etruria Formation or coal measures aquifer blocks, leading to adverse effects on	 methodology (pathways would be progressively sealed in a staged and sequentially controlled process during construction, likely by SCL and injection grouting will be implemented if required) mean waterbody status is unlikely to be impacted. 	No measurable change due to scale o	f No measurable change due to scale or works relative to water body scale.	f No measurable change due to scale of works relative to water body scale.			No measurable change due to scale or works relative to water body scale.
Chemical	Chemical Drinking Water Protected Areas (DrWPAs) Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Good	Good by 2015 Good by 2015	Good Good	No dewatering along the tunnel itself and majority of works are below ground level. With embedded mitigation		A Stenner Woods and Milgate Fields, Didsbury and Fletcher Moss and Wrengate Wood & Heycroft are located within land required for construction of the proposed works. There is potential for groundwater quality to these GWDTEs to be effected. This will be managed through implementation of			None in community area MA07. None present within ROI of vent shaft dewatering.	None in community area MA07.	None in community area MA07.	None in community area MA07/08. None present within or in close proximity down-hydraulic gradient of ROI.	None in community area MA07/08. None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close	None in community area MA07/08. None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close	None in community area MA07/08. None present within or in close proximity down-hydraulic gradient of ROI.
	Chemical Dependent Surface Water Body	Good	Good by 2015	Good	No dewatering along the tunnel itself and majority of works are below ground level. With embedded mitigation impacts, no measurable changes to surface waterbodies in ROI are expected.	No dewatering along the tunnel itself and majority of works are below ground level. With embedded mitigation impacts to surface waterbodies in ROI are likely to be negligible.	d currently assumed to be Tributary of	Shaft will be constructed using full dept	h Cringle Brook is in culvert in the vicinity of the shaft and therefore no impacts likely.	U U U U U U U U U U U U U U U U U U U	Cringle Brook and Fallowfield Brook ar both in culvert in the vicinity of the sha and therefore no impacts likely.	J	Corn Brook is located within the ROI a lowering of groundwater levels may reduce contribution to this watercour However, Corn Brook is culverted though the study area and therefore, is unlikely to receive groundwater flow in this area. No measurable change of river flow from the portal is expected.	discharge into this watercourse may b intercepted. However, Corn Brook is culverted though the study area and therefore, it is unlikely to receive groundwater flow in this area. No	 Corn Brook is culverted though the study area and therefore, it is unlikely to receive groundwater flow in this area. No measurable change on river flow from the portal is expected. 	o River Medlock is within land required for construction of the proposed works.	Corn Brook is culverted though the study area and therefore, it is unlikely to receive groundwater flow in this area. No measurable change on river flow	
	General Chemical Test	Good	Good by 2015	Good	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	anticipated but these are unlikely to impact waterbody status due to embedded mitigation (a contingency action plan will be agreed with the Environment Agency, prior to the start of construction, with agreed actions in	anticipated but these are unlikely to impact waterbody status due to embedded mitigation (a contingency action plan will be agreed with the Environment Agency, prior to the start of construction, with agreed actions in	impact waterbody status due to embedded mitigation (a contingency action plan will be agreed with the Environment Agency, prior to the start of construction, with agreed actions in	anticipated but these are unlikely to impact waterbody status due to embedded mitigation (a contingency action plan will be agreed with the Environment Agency, prior to the start of construction, with agreed actions in	anticipated but these are unlikely to impact waterbody status due to embedded mitigation (a contingency action plan will be agreed with the Environment Agency, prior to the start	 anticipated but these are unlikely to impact waterbody status due to embedded mitigation (a contingency action plan will be agreed with the Environment Agency, prior to the start of construction, with agreed actions in 		Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.

	ire East Permo-Triassic Sandstone Aqui rmo-Triassic Sandstone Aquifers (GB120		led impact assessment - effects on current status er)	Detailed Im	oact Assessment	Detailed Imp	pact Assessment	Detailed Impa	act Assessment	Detailed Imp	act Assessment
EA Management Catchment: Overall Status (2015):	North West GW POOR		Scheme component (l Scheme component ty	D): GB1201G	101100-CR-08 etaining structure	GB1201G1	01100-CR-08A ning wall	GB1201G1	01100-CR-10 taining structure	GB1201G1	01100-RT-11 ing Wall
Overall Status Objective:	GOOD BY 2021		Scheme component nan Impact type from scheme compone		utting retaining wall	Ardwick Access	Road retaining wall	Ardwick North cu Lowering of groundwater levels and	tting retaining wall	Ardwick embank	ment retaining wall
WFD Status Element	WFD Quality Element	2015 RBMP Cycle 2 Status	2015 RBMP Cycle 2 Status	potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	"Damming" of groundwater flow an reduction in groundwater contributions	potential reduction in groundwater	"Damming" of groundwater flow and reduction in groundwater contributions	potential reduction in groundwater	"Damming" of groundwater flow and reduction in groundwater contributions	potential reduction in groundwater	"Damming" of groundwater flow and reduction in groundwater contributions
	Quantitative Saline Intrusions	Poor	Good by 2021 Poor	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	Ŭ I	Ŭ I	0	ů i	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	Ŭ I
	Quantitative Water Balance	Good	Good by 2015 Good	No measurable change on quantitative water balance due to scale of works relative to water body scale.	Groundwater flow is not parallel to the cutting, hence the cutting is likely to partially form a barrier to groundwater flow, leading to a localised risk of groundwater flooding on the upgradier side (refer to the flood risk assessment Volume 5, WR-005-0MA07).	No measurable change on quantitative water balance due to scale of works relative to water body scale.	Groundwater flow is not parallel to the retaining wall, hence it is likely to partially form a barrier to groundwater flow, leading to a localised risk of groundwater flooding on the upgradien side.	No measurable change on quantitative water balance due to scale of works relative to water body scale.	Groundwater flow in the area is likely parallel to the cutting retaining wall hence us unlikely to form a barrier to groundwater flow in the area, although there may be minor local changes in groundwater level. However, taking into account the overall extent of the glacial till aquifer, no measurable change is expected.	embedded mitigation - i.e. no or minimal dewatering/permanent	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.
Quantitative	Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Good	Good by 2015 Good	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.
	Quantitative Dependent Surface Water Body	Good	Good by 2015 Good	Corn Brook is located within the ROI ar may receive reduced groundwater levels. Corn Brook is culverted in the vicinity of the portal and is unlikely to receive groundwater flow in this area. No measurable change is expected fro the portal on the river flow. River Medlock is outside of the ROI so i unlikely to receive lowered groundwate levels.	 Intercepted by below ground structure Corn Brook is culverted in the vicinity of the portal and is unlikely to receive groundwater flow in this area. No measurable change is expected from the portal on the river flow. River Medlock is outside of the ROI but downgradient of the cutting retaining 	 S. f None present within or in close proximity down-hydraulic gradient of ROI. 	None present within or in close proximity down-hydraulic gradient of ROI.	River Medlock is outside of the ROI so is unlikely to receive lowered groundwater levels. On the scale of the watercourse, no measurable change is expected.	wall which may intercept some	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.
				Disturbing or mobilising existing po quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	along which existing poor quality	Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	along which existing poor quality	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of pathways along which existing poor quality groundwater can migrate	Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of pathways along which existing poor quality groundwater can migrate
	Chemical Saline Intrusions	Poor	Good by 2021 Poor	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.		No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.
	Chemical Drinking Water Protected Areas (DrWPAs)	Good	Good by 2015 Good	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.
Chemical	Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Good	Good by 2015 Good	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.
	Chemical Dependent Surface Water Body	Good	Good by 2015 Good	Corn Brook is culverted though the study area and therefore, it is unlikely receive groundwater flow in this area. No measurable change on river flow from the portal is expected.	Corn Brook is in culvert through the study area so no measurable change o the watercourse is expected. River Medlock is within land required for construction of the proposed works. There is potential for these to be impacted however due to embedded mitigation, no measurable change is expected.		None present within or in close proximity down-hydraulic gradient of ROI.	River Mersey is within land required for construction of the proposed works. There is potential for these to be impacted however due to embedded mitigation, no measurable change is expected.	River Mersey is within land required for construction of the proposed works. There is potential for these to be impacted however due to embedded mitigation, no measurable change is expected.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.
	General Chemical Test	Good	Good by 2015 Good	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.

Manchester and Cheshire East Pe EA Management Catchment:	ermo-Triassic Sandstone Aquifers (GB1 North West GW	20G101100) (Princ	cipal aquifer)	Scheme component (ID	Detailed Impact Assessment): GB1201G101100-VF-13	Detailed Impact Assessment GB1201G101100-VF-14		act Assessment 101100-ST-15		pact Assessment 101100-RT-16		act Assessment 01100-RT-17	Detailed Impact Assessment GB1201G101100-OF-18	Detailed Impact Assessment GB1201G101100-OF-19		pact Assessment 101100-RT-20
Overall Status (2015):	POOR	-		Scheme component type	e: Viaduct Foundations	Viaduct Foundations	Statio	on/Depot	Reta	ining Wall	Retair	ing Wall	Overbridge Foundations	Overbridge Foundations	Retai	ining Wall
Overall Status Objective: WFD Status Element	GOOD BY 2021 WFD Quality Element	2015 RBMP Cy	2015 PRMP Cycle 2 Sta	Scheme component name ype from scheme component ntus 2019 Status	t:	Piccadilly Station viaduct "Damming" of groundwater flow and reduction in groundwater contributions	Lowering of groundwater levels and potential reduction in groundwater	"Damming" of groundwater flow ar reduction in groundwater contributions	Lowering of groundwater levels an potential reduction in groundwate	" "Damming" of groundwater flow an reduction in groundwater contributions	A635 Mancunian Way s Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	"Damming" of groundwater flow a reduction in groundwater contributions	Piccadilly offline access ramp	36469 Fairfield Street offline overbrid and "Damming" of groundwater flow an reduction in groundwater contributions	Lowering of groundwater levels and potential reduction in groundwater	r "Damming" of gr reduction i cont
	Quantitative Saline Intrusions	Poc	or Good by 2021	Poor	— • •	No measurable change expected from saline intrusions due to scale of works relative to water body scale.		saline intrusions due to scale and dep	- · · ·	th saline intrusions due to scale and dept	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	- · ·	embedded mitigation - Le no or	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	
Quantitative	Quantitative Water Balance	Goo	od Good by 2015	Good	the uppermost section of the aquifer which could impact on local groundwater levels. However, the viaduct is approximately parallel to the topographic gradient and groundwater flow is altered rather than impeded. No measurable change expected on groundwater levels from viaduct piled	 Piling may obstruct groundwater flow in the uppermost section of the aquifer which could impact on local groundwater levels. However, the viaduct is approximately parallel to the topographic gradient and groundwater flow is altered rather than impeded. No measurable change expected on groundwater levels from viaduct piled foundations in the superficial deposits. 	Temporary dewatering will be required during construction of the station basement which could impact on local groundwater levels. Some minor localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	 the upgradient side of the structures and may lead to groundwater flooding at the surface during high groundwate levels, or groundwater flooding of existing basements. Some minor 	 Current construction methodology assumes internal dewatering only by pumping to a suitable temporary discharge point. As such, groundwater levels in the area of the Ashton Line connection will not be impacted and the internal watering is unlikely to impact waterbody status due to embedded 	aquifer in the local area. This has the	No measurable change on quantitative water balance due to scale of works relative to water body scale.	The retaining wall below ground could form a barrier to groundwater movement in the local area. As a resu groundwater levels could rise on the upgradient side of the structures, potentially leading to groundwater flooding at the surface during high groundwater levels, or groundwater flooding of existing basements. These effects are anticipated to be localised and are unlikely to impact waterbody status.	lt, No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	Some dewatering may be required during construction which could impact groundwater levels. No measurable change on quantitative water balance expected due to scale of works relative to water body scale.	compared to the a aquifer and the co
	Groundwater Dependent Terrestrial Ecosystems (GWDTE Test	s) Goo	od Good by 2015	Good	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient o ROI	None present within or in close f proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present with proximity down-hy ROI.
	Quantitative Dependent Surfac Water Body	e Goo	od Good by 2015	Good	Approach viaduct so there is potential for adverse impacts on baseflow to the	River Medlock passes under Piccadilly Station viaduct so there is potential for adverse impacts on baseflow to the River Medlock. Small-scale, localised changes to baseflow are expected upgradient and downgradient of the viaduct piles, however, the overall contribution to the River Medlock baseflow is not expected to change.	River Medlock is within the ROI of dewatering so may temporarily receive reduced baseflow. Considering the scale of the River Medlock catchment and the embedded mitigation, no measurable change in baseflow is expected. Shooters Brook Downstream is partially located within the ROI for dewatering. The watercourse is culverted in the vicinity of the station so is unlikely to be affected by the temporary dewatering. No measurable change is expected.	 Considering the scale of the River Medlock catchment and the embedde mitigation, no measurable change in baseflow is expected. Shooters Brook Downstream is partial located within Manchester Piccadilly station basement. The watercourse is culverted in the vicinity of the station s 	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation (internal dewatering only).	could form a barrier to groundwater flow. Considering the scale of the River	River Medlock is within the ROI of dewatering so may temporarily receive reduced baseflow. Considering the scale of the River Medlock catchment and the embedded mitigation, the temporary reduction in baseflow is unlikely to significantly affect the watercourse.	and therefore reduce baseflow to the	 No measurable change on groundwa flow to the River Medlock expected of to scale and depth of works relative 	ater No measurable change on groundwate lue flow to the River Medlock expected due to scale and depth of works relative to water body scale.	River Medlock is within the ROI of dewatering so may temporarily receive reduced baseflow. Considering the scal of the River Medlock catchment and the embedded mitigation, the temporary reduction in baseflow is unlikely to significantly affect the watercourse.	and therefore red
					Creating or altering of pathways along which existing poor quality groundwater can migrate	Creating or altering of pathways along which existing poor quality groundwater can migrate	Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	creating or altering of pathways	Disturbing or mobilising existing po quality groundwater by temporary dewatering or depressurisation an permanent groundwater control	along which existing poor quality	Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of pathways along which existing poor quality groundwater can migrate			Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	d Creating or al along which ex groundwa
	Chemical Saline Intrusions	Poc	or Good by 2021	Poor	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.	f No measurable change due to scale of works relative to water body scale.	F No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale o works relative to water body scale.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable change due to scale of works relative to water body scale.	No measurable ch works relative to v
	Chemical Drinking Water	Goo	od Good by 2015	Good	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA07/08.	None in community area MA08.	None in community area MA08.	None in community area MA08.	None in commun
Chemical	Protected Areas (DrWPAs) Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Goo		Good	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close	None present within or in close	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close	None present within or in close	None present within or in close proximity down-hydraulic gradient of ROI.	None present with proximity down-hy ROI.
	Chemical Dependent Surface Water Body	Goo	Good by 2015	Good	works so there is potential for these to be impacted. No measurable change due to scale of works relative to water body scale and embedded mitigation	d River Mersey is crossed by the propose works so there is potential for these to be impacted. No measurable change due to scale of works relative to water body scale and embedded mitigation (use of bentonite to reduce fluid loss or temporary casing).	No measurable change to River Medloc due to scale of works relative to water body scale.				ck No measurable change to River Medloc due to scale of works relative to water body scale.		ock due to embedded mitigation - i.e. no	lock No measurable change to River Medloo or due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	INO measurable change to River Medloc	
	General Chemical Test	Goo	od Good by 2015	Good	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised eff anticipated but th impact waterbody embedded mitiga

	GB1201G10	oct Assessment D1100-RT-21 ing Wall
all of groundwater flow and on in groundwater ontributions		"Damming" of groundwater flow and reduction in groundwater contributions
e change expected from ns due to scale of works er body scale.	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	No measurable change expected from saline intrusions due to scale of works relative to water body scale.
wall will be constructed to estimated low so may act as a indwater flow. The scale of this feature he areal extent of the e construction of the retaining wall tiguous piled wall at time), no measurable change er level and groundwater fected.	Some dewatering may be required during construction which could impact groundwater levels. No measurable change on quantitative water balance expected due to scale of works relative to water body scale.	The retaining wall will be constructed perpendicular to estimated groundwater flow so may act as a barrier to groundwater flow. Considering the scale of this feature compared to the areal extent of the aquifer and the construction methodology of the retaining wall (assumed contiguous piled wall at time of assessment), no measurable change on groundwater level and groundwater flooding is expected.
within or in close n-hydraulic gradient of	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.
is located downgradient g wall which is designed to groundwater flow. It rrier to groundwater flow reduce baseflow to the . Considering the scale of River Medlock catchment dded mitigation, the aseflow is unlikely to fect the watercourse.	River Medlock is located within the ROI so groundwater levels may be lowered thereby reducing contribution to the watercourse. However, considering the scale of the upstream River Medlock catchment and the embedded mitigation, the reduction in baseflow is likely to be negligible.	River Medlock is located downgradient of the retaining wall. The retaining wall is may form barrier and reduce baseflow to the River Medway due to the interception of groundwater. Considering the scale of the upstream River Medlock catchment and the embedded mitigation, no measurable change is expected from the reduction in baseflow.
r altering of pathways h existing poor quality water can migrate	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of pathways along which existing poor quality groundwater can migrate
e change due to scale of to water body scale.	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.
unity area MA08.	None in community area MA08.	None in community area MA08.
within or in close n-hydraulic gradient of	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.
e change to River Medlock works relative to water	No measurable change to River Medlock due to scale of works relative to water body scale.	No measurable change to River Medlock due to scale of works relative to water body scale.
l effects may be t these are unlikely to ody status due to tigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.

Manchester and Cheshire East Per EA Management Catchment:	mo-Triassic Sandstone Aquifers (GB120G101100) (Principal aquifo North West GW	er)	Scheme component (ID)		act Assessment I01100-RT-22		act Assessment 01100-RT-23			Detailed Impact Assessment Outcom	e	
Overall Status (2015):	POOR		Scheme component type Scheme component name	: Retair	ning Wall et retaining wall	Retair	ning Wall	-				
Overall Status Objective: WFD Status Element	GOOD BY 2021 WFD Quality Element 2015 RBMP Cycle 2 Statu	2015 PRMP Cycle 2 Statu	pe from scheme component		"Damming" of groundwater flow and reduction in groundwater contributions	Lowering of groundwater levels and potential reduction in groundwater	"Damming" of groundwater flow and reduction in groundwater contributions	Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	y Overall effect on quality element a water body scale	Additional mitigation requirements	Residual effect on quality element a water body scale	WFD compliance outcome - poter for deterioration of current statu quality element at water body se
	Quantitative Saline Intrusions Poor	Good by 2021	Poor	No measurable change expected from	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	No measurable change expected from			Localised adverse effect anticipated when scheme component effects considered in combination. However n deterioration in status of quality element anticipated at water body scal	Further ground investigation needed to refine uncertainty regarding fracturing, faulting and impact on groundwater flows in the bedrock aquifers. Construction methodology has been refined to restrict the dewatering to internal methods (ejector wells, grouting and consideration of diaphragm walls etc). Which the application of these methods the risk of deterioration in the status of the quality element is minimised.	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale	Compliant - no deterioration in qual element status anticipated
Quantitative	Quantitative Water Balance Good	Good by 2015	(<u>100</u> d	Some dewatering may be required during construction which could impact groundwater levels. No measurable change on quantitative water balance expected due to scale of works relative to water body scale.	Considering the scale of this feature compared to the areal extent of the aquifer and the construction	groundwater levels. No measurable change on quantitative water balance expected due to scale of works relative to water body scale.	Considering the scale of this feature compared to the areal extent of the aquifer and the construction		Localised adverse effect anticipated when scheme component effects considered in combination. However n deterioration in status of quality element anticipated at water body scal	Additional ground investigation required to understand the potential groundwater levels and heterogeneous nature of the aquifer in this area.	when scheme component effects	Compliant - no deterioration in quali element status anticipated
	Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Good Test	Good by 2015		None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	None	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.	Compliant - no deterioration in quali element status anticipated
	Quantitative Dependent Surface Water Body Good	Good by 2015	Good	River Medlock is located within the ROI so groundwater levels may lower thereby reducing contribution to the watercourse. Considering the scale of the River Medlock catchment and the embedded mitigation, no measurable change in baseflow is expected. Shooters Brook downstream is located adjacent to the retaining wall within the potential ROI for dewatering, assuming dewatering is required during construction. However, the watercourse is culverted throughout in the vicinity of the retaining wall. Unless there is substantial leakage through the culvert lining, the watercourse would not be affected by the temporary dewatering.	Considering the scale of the upstream River Medlock catchment and the	change in baseflow is expected. Shooters Brook downstream is located adjacent to the retaining wall within the	River Medlock and Shooters Brook downstream are located downgradient of the retaining wall. The retaining wall is may form barrier and reduce baseflow to the watercourses due to the interception of groundwater. Considering the scale of the upstream River Medlock catchment and the embedded mitigation, no measurable change in baseflow is expected.	e None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	None	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.	Compliant - no deterioration in qual element status anticipated
				Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	r Creating or altering of pathways along which existing poor quality groundwater can migrate	Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	r Creating or altering of pathways along which existing poor quality groundwater can migrate		-		-	
	Chemical Saline Intrusions Poor	Good by 2021	Poor	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.	No measurable change due to scale of works relative to water body scale.	None identified	Localised adverse effect anticipated when scheme component effects considered in combination. However n deterioration in status of quality element anticipated at water body scal	Further ground investigation needed to refine uncertainty regarding fracturing, faulting and impact on groundwater flows in the bedrock aquifers. Construction methodology has been refined to restrict the dewatering to internal methods (ejector wells, grouting and consideration of diaphragm walls etc). Which the application of these methods the risk of deterioration in the status of the quality element is minimised.	element anticipated at water body scale	Compliant - no deterioration in qual element status anticipated
	Chemical Drinking Water Brotested Areas (DriMDAs)	Good by 2015	Good	None in community area MA08.	None in community area MA08.	None in community area MA08.	None in community area MA08.	None identified	N/A	None	N/A	Compliant - no deterioration in qual
Chemical	Protected Areas (DrWPAs) Good Chemical Groundwater Good Dependent Terrestrial Good Ecosystems (GWDTEs) Test Good	Good by 2015		None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	None	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.	element status anticipated Compliant - no deterioration in quali element status anticipated
	Chemical Dependent Surface Water Body Good	Good by 2015	Good		k No measurable change to River Medlocl due to scale of works relative to water body scale.				Localised adverse effect when scheme component effects considered in combination However no deterioratio in status of quality element anticipated at water body scale. Additional mitigation not required.	Dewatering water will be settled and if necessary treated to ensure no deterioration in water quality	Localised effect anticipated when scheme component effects considered in combination. Following the application of appropriate mitigation no deterioration in status of quality element anticipated at water body scale	Compliant - no deterioration in quali element status anticipated
	General Chemical Test Good	Good by 2015	Good	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	None identified	Localised adverse effect anticipated when scheme component effects considered in combination. However n deterioration in status of quality element anticipated at water body scal Additional mitigation not required.	TBC - Additional GI required to understand the potential groundwater levels and any potential poor quality water in this area. If GI shows that there is a risk of changes to groundwater chemistry then mitigation measures will be considered	when scheme component effects	Compliant - no deterioration in quali element status anticipated

perley Brook (GB112069061260)					Effects on attainment of status objectives (Test B)													Outcome				
	RNAGs / Me	RNAGs / Measures scoped in as potentially at risk from Proposed Scheme			River Bollin			Tributary of River Bollin 2			Tributary of River Bollin 3			Tributary of River Bollin 5								
O status objective element	RNAG / Measure ID	Relevant WFD Quality Element / RNAG(s)	Title / Details	River Bollin Offline Bridge Widening (GB112069061381- MW-01-UB-01)	Highway Drainage Outfalls M56 (GB112069061381-MW-01- HD-01)	River Bollin East Viaduct (GB112069061381-MW-01-VD- 01)	Realignment (GB112069061381 T-02-RE-01)	- Offline culvert (GB112069061381-T-02-CV-01)	M56 East Tunnel (GB112069061381-T-02-BT-01)	Realignment (GB112069061381- T-03-RE-02)	- M56 Drain Offline Culvert (GB112069061381-T-03-CV-02) (M56 Offline Culvert GB112069061381-T-03-CV-03) (GB112	M56 East Tunnel 12069061381-T-03-BT-01)	Realignment (GB112069061381- T-03-RE-04)	Offline Culvert (GB112069061381-T-05-CV-06)	Realignment (GB112069061381- T-05-RE-05)	Thorns Green Cutting (GB112069061381-T-05-CU-01)	Cumulative effects - effects on RNAG / Measure from scheme component(s) located in other WFD water bodies	Overall effect at water body scale	Additional mitigation requirements	Residual overall effect at water body N scale following consideration of additional mitigation	y WFD compliance outcome - potentia to prevent future attainment of status objective of quality element.
sons for not achieving good (RNAG)	572040		Activity is Land drainage - structures and National SWMI Header is Physical modification	Sch	eme element does not directly affect this	RNAG	Scheme element does not directly affect this RNAG	Risk to RNAG - Due to additional culverts - requires further assessment and potential mitigation	t		Risk to RNAG - Due to additional culverts - requires further assessment cu and potential mitigation	Risk to RNAG - Due to additional verts - requires further assessment and potential mitigation			Risk to RNAG - Due to additional culverts - requires further assessmen and potential mitigation			None	Risk to RNAG	Further assessment is to be completed before the risks and mitigation can be confirmed. RNAG noted to be suspected and subject to investigation further discussion with Environment Agency required.	Widespread risk to RNAG anticipated until further assessment completed. Potential ris to RNAG at water body scale.	Non-Compliant - risk of preventing fu attainment of quality element stat objective.
Programme of measures (PoM)	No Programme of measu	es are considered to be at risk from the Proposed	Scheme for this water body.																			Compliant - no prevention of fur attainment of quality element st objective.

Timperley Brook (GB112069061260)						f status objectives (Test B)	Outcome						
	RNAGs /	Measures scoped in as potentially at risk from Pro	pposed Scheme		Timperley Br	ook (Moderate)							
WFD status objective element	RNAG / Measure ID	Relevant WFD Quality Element / RNAG(s)	Title / Details	Timperley Brook Inverted Siphon (GB112069061260-MW-01-IS-01)	Timperley Brook Realignment (GB112069061260-MW-02-IS-01)	Manchester Airport High Speed Station Cutting Retaining Wall (GB112069061260-MW-01-RW-01)	Highway Drainage - M56 East and West Link Realignment/ Access to Manchester Aiport High Speed Station/ Runger Lane Realignment (GB112069061260-MW-01-HD-01)	Cumulative effects - effects on RNAG / Measure from scheme component(s) located in other WFD water bodies	Overall effect at water body scale	Additional mitigation requirements	Residual overall effect at water body scale following consideration of additional mitigation	/ WFD compliance outcome - potentia to prevent future attainment of status objective of quality element.	
Reasons for not achieving good (RNAG)	572020 / 572021	Mitigation Measures Assessment	Physical modification	Risk to RNAG - Additional physical modification pressure on the waterbody due to siphon although localised to short section of upper catchment which is partly already impacted by culvert.	Scheme element does not directly affect any RNAG	Scheme element does no	ot directly affect this RNAG	None	Localised risk to RNAG	Proposed mitigation is a new open channel (linked with floodplain to create flood storage), which will reduce an existing culverted length downstream o Brooks Drive.	P N/A f	Compliant - no prevention of future attainment of quality element status objective.	
RBMP Programme of measures (PoM)	19708	Various	Timperley Brook 46 - diffuse urban: Reduce diffuse pollution pathways (i.e. control entry to water environment): Deliver package of measures to address diffuse urban pollution. Work with Trafford Council and United Utilities to identify and remediate cross-connections in the above areas. Identify and rank all major road outfalls in the catchment and determine their impact and work with Trafford Council to address any issues.		Scheme element does not directly affect any POMs		Risk to POM - Additional contribution to urban diffus pollution pressure due to road runoff (as calculated by HEWRAT) - requires mitigation over and above standard drainage design.	e None	Risk to POM delivery	Additional mitigation identified through HEWRAT includes swale and holding tank, however further water quality baseline data and assessment is to be completed before the impacts and mitigation can be confirmed.	Widespread adverse effect anticipated until mitigation is confirmed. Potential	Non Compliant - risk of preventing future attainment of quality element status objective.	
A/HMWB Mitigation Measures	TPB15	480146 - Mitigation Measures Assessment	TPB15: Open up Timperley Brook culvert parallel to Brooks Drive. Open up the 285-metre long Timperley Brook culvert parallel to Brooks Drive to restore natural riverine processes and improve the waterbody's ecological value. High ecological benefit. High cost. Medium complexity.	Schame element does not directly attect delivery of	Benefit to HMWB MM - watercourse realignment is ir section of watercourse identified for delivery of theis measure		ery of any identified HMWB mitigation measures	None	Localised beneficial effect	N/A	N/A	Compliant - no prevention of future attainment of quality element status objective.	

Table A27: Medlock (Lumb Brook to Irwell) (GB112069061152) detailed impact assessment - effects on future status objectives

Medlock (Lumb Brook to Irwell) (GB1120690					Effects on attainment of status objectives (Test B	1	Outcome							
WFD status objective element	RNAGs / Mea RNAG/measure ID	Assures scoped in as potentially at risk from Proposed Scheme Relevant WFD quality element/RNAG(s) Title/details		Piccadilly approach viaduct (GB112069061152-MW-01-VD-01)	River Medlock (High) New Fairfield Street offline overbridge Daylighting of existing culvert (GB112069061 (GB112069061152-MW-01-OB-01) MW-01-DY-01)		Cumulative effects - effects on RNAG / Measure from scheme component(s) located in other WFD water bodies		Additional mitigation requirements	Residual overall effect at water body scale following consideration of additional mitigation	WFD compliance outcome - potential to prevent future attainment of status objective of quality element.			
Reasons for not achieving good (RNAG)	480131 / 480132	Mitigation Measures Assessment	Physical Modification			Removal of existing culvert helps reduce morphological pressure	N/A	Localised beneficial effect	N/A	N/A	Compliant - no prevention of future attainment of quality element status objective.			
RBMP Programme of measures (PoM)		No POMS affected by scheme proposals					N/A				Compliant - no prevention of future attainment of quality element status objective.			
A/HMWB Mitigation Measures	No specific measures	Mitigation Measures Assessment	No specific HMWB MMs identified at the location on the Medlock or related to culvert removal				N/A				Compliant - no prevention of future attainment of quality element status objective.			

inchester and Cheshire East Permo-Triass	sic Sandstone Aquife	rs (GB120G101100) (Principal aquifer)				E	ffects on attainment of status objectives (1	est B)								Outcome		
WFD status objective element	RNAGs / Meas RNAG/measure ID	sures scoped in as potentially at risk fr Relevant WFD quality element/RNAG(s)	rom Proposed Scheme Title/details	Manchester Tunnel	Palatine Road Vent Shaft	Wilmslow Road Vent Shaft	Birchfields Road Vent Shaft	Manchester Tunnel North Portal	Ardwick South Cutting Retaining Wall	Ardwick Box Structure	Piccadilly Approach Viaduct	Manchester Piccadilly High Speed Station	Ardwick Embankment Retaining Wall	Cumulative effects - effects on RNAGs/Measure from scheme component(s) located in other WFD water bodies	Overall effect at water body scale	Additional mitigation requirements	Residual effect at water body scale following consideration of additional mitigation	WFD compliance outcome - potent prevent future attainment of status o of quality element
easons for Not Achieving Good (RNAG)	490676	Quantitative Saline Intrusion	Saline or other intrusion - Abstraction and flow	No effect when balanced against embedded mitigation.	With construction methodology (diaphragm walls to base) dewatering volumes will be minimal and the risk of upwelling of saline water or draw in poorer quality water from the Collyhurst Formation or Coal Measures is minimised.	groundwater from the ventilation shaft), limited	For a state of the constant of the state of	No effect when balanced against embedded mitigation.	No effect when balanced against embedded mitigation.	balanced against	No effect when balanced against embedded mitigation.	No effect when balanced against embedded mitigation.	No effect when balanced against embedded mitigation.		-ocalised adverse effect anticipated No risk of prevention of future attainment of quality element status objective.	Further ground investigation needed to refine understanding of groundwater flow in the area considering uncertainties with fracturing and faulting. Construction methodology has been refined to restrict the dewatering to internal methods (ejector wells, grouting and consideration of diaphragm walls etc).	Localised adverse effect anticipated. No risk of prevention of future attainment of quality element status objective.	Compliant - no risk of prevention of fut attainment of quality element status of
easons for Not Achieving Good (RNAG)	509546	Quantitative Saline Intrusion	Saline or other intrusion - Chemicals	No effect when balanced against embedded mitigation.	With construction methodology (diaphragm walls to base) dewatering volumes will be minimal and the risk of upwelling of saline water or draw in poorer quality water from the Collyhurst Formation or Coal Measures is minimised.	period of dewatering and the shallow depth	With the construction methodology (the SCL will be installed to the Collyhurst Sandstone Formation (Appleby Group) shortly after construction and will seal off the groundwater from the ventilation shaft), limited period of dewatering and the shallow depth compared to the saline boundary, dewatering volumes will be minimal and the risk of upwelling saline water or drawing in poor quality water from the Coal Measures is minimised.	No effect when balanced against embedded mitigation.	No effect when balanced against embedded mitigation.	No effect when balanced against embedded mitigation	No effect when balanced against embedded mitigation.	No effect when balanced against embedded mitigation.	No effect when balanced against embedded mitigation.	N/A	-ocalised adverse effect anticipated No risk of prevention of future attainment of quality element status objective.	Further ground investigation needed to refine understanding of groundwater flow in the area considering uncertainties with fracturing and faulting. Construction methodology has been refined to restrict the dewatering to internal methods (ejector wells, grouting and consideration of diaphragm walls etc).	Localised adverse effect anticipated. No risk of prevention of future attainment of quality element status objective.	Compliant - no risk of prevention of fut attainment of quality element status ob

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