In Parliament – Session 2022 - 2023

High Speed Rail (Crewe – Manchester)

Volume 5: Appendix WR-001-00000 Water resources and flood risk

Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement

Water Framework Directive compliance assessment addendum





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SES2 and AP2 ES Volume 5, Appendix: WR-001-00000 Water resources and flood risk Water Framework Directive compliance assessment addendum

Annex A: Revised detailed impact

Table A.1: Wistaston Brook (GB11	2068055280) detailed impact assessmer	nt - effects on current st	tatus															
Wistaston Brook (GB112068055280)								De	etailed Impact Assess	ment						Detailed Impact Assessment Outcom	ne	
Water body type:	River		Watercours	e (receptor value):	Tributa	ary of Swill Brook 1 (N	Moderate)	Tribut	ary of Gresty Brook 1 (N	Noderate)		Gresty Brook (High)						
Hydromorphological designation:	Not A/HMWB		Scheme comp	onent (Unique ID):	Crewe Tur	nnel (GB11206805528	30-T-01-BT-01)	Crewe Tu	nnel (GB112068055280)-T-02-BT-01)	Crewe Tunn	el (GB112068055280-N	MW-01-BT-01)	Cumulative effects - effects on				
Overall Status (2015):	Bad		Description of sc	heme component:	A 6.2km long x 8.	8m internal diameter i	bored tunnel up to a	A 6.2km long x &	8.8m internal diameter bo	ored tunnel up to a	A 6.2km long x 8.	8m internal diameter bo	ored tunnel up to a	quality element from scheme	Overall effect on quality element at	F	Residual effect on quality element	WFD compliance outcome - potential
Overall Status Objective:	Good by 2027		Impact type from sc	heme component:										component(s) located in other WED	water body scale	Additional mitigation requirements	s at water body scale	for deterioration of current status of
Overall Status (2019)	Bad				Impacts from	n hored tunnel are s	coned out of detail	led impact assessm	ont at Proliminary As	sessment stage un	less flagged as a ris	k in Groundwater WE	ED assessment	water bodies	water body scale		at 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						Jessment Stage, un				water bounes				
	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 quality 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 quality 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 quality 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 quality 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 quality 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 quality 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 quality 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 quality 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 quality element status anticipated
	Quantity and dynamics of water flow	V			-	_	_	_	_	_	_	-	_	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				-	_	_	-	_	_	_	-	_	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River continuity	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 quality element status anticipated
liyuromorphologicar	River depth and width variation				-	-	-	-	-	-	-	-	-	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				-	-	-	-	-	-	-	-	_	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure of the riparian zone				_	_	_	-	_	_	_	-	_	None	Impacts on element screened out at preliminary assessment stage.	ent screened out at ssessment stage.	N/A	Compliant - no deterioration in quality 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 quality element status anticipated

Valley Brook (Englesea Brook to Weave	r) (GB112068055310)					Detailed Impact Assessment				Detailed Impact Assessment Outcome		
Water body type:	River		Wate	ercourse (receptor value)	;	Valley Brook (High)						
Hydromorphological designation:	HMWB		Scheme	e component (Unique ID)		Crewe Tunnel (GB112068055310-MW-01-B	T-01)			Additional mitigation requirements Residual effect on quality element water body scale N/A None		
Overall Status (2015):	Moderate		Descriptio	on of scheme component	A 6.2km long x 8.8r	m internal diameter bored tunnel up to a max. depth	of 42.7m below ground level.	Cumulative effects - effects on	Overall effect on quality element at	Detailed Impact Assessment Outcome Additional mitigation requirements Residual effect on quality element at water body scale WFD compliance outco for deterioration of cur quality element at water body scale N/A None Compliant - no deterior. element status an compliant - no deterior. N/A None Compliant - no deterior. element status an compliant - no deterior element status ar complia	WFD compliance outcome - potential	
Overall Status Objective:	Good by 2027		Impact type f	from scheme component				component(s) located in other WED	water body scale	Additional mitigation requirements	water body scale	for deterioration of current status of
Overall Status (2019):	Moderate				Impacts from bored tunnel a	re scoped out of detailed impact assessment at	t Preliminary Assessment stage, unless	water bodies	water bouy scale		water bouy state	quality element at water body scale
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	2019 Status		flagged as a risk in Groundwater WFD asses	sment					
	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 20		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
	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				_	_	_	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

Table A.2: Valley Brook (Englesea Brook to Weaver) (GB112068055310) detailed impact assessment - effects on current status

Table A.3: Weaver (Marbury Weaver (Marbury Brook to Dan	Brook to Dane) (GB112068060460) detail e) (GB112068060460)	led impact assessment - effect	ts on current status								Detailed Im	npact Assessment									Detailed Impact Assessment Outcom	2	
Water body type:	River		Watercourse (receptor value):								Tributary of Rive	er Weaver 2 (Moderate)											
Hydromorphological designation	n: Not A/HMWB		Scheme component (Unique ID):		Pa	ark Hall Culvert (GB112068060460-T-01-CV)	X-01)	Access trac	ck culvert (un-named) (GB112068060460-	-T-01-CVA-01)	River Weaver Tributary Realigr	nment (GB112068060460-T-01-RE-01) gh two culverts (A530 Nantwich Road Offline	A530 Nantwi	vich Road Offline East Culvert GB11206806	0460-T-01-CVH-01	A530 Nantwi	h Road Offline West Culvert GB11206806	0460-T-01-CVH-02	_				
Overall Status (2015):	Poor		Description of scheme component:		Culvert (over 100m in lengt	th) - extension or rebuild of an existing culver	ert under West Coast Mainline	Sho	ort culvert for access track to attenuation p	pond	East and West Culverts) under highway	ny realignment. Approx. length of realignment	t Culvert un	nder A530 Nantwich Road overbridge, appro	x 25m in length	Culvert un	ler A530 Nantwich Road overbridge, appro	25m in length	Cumulative effects - effects on				WFD compliance outcome -
Overall Status Objectives	Good by 2027		Impact type from scheme component:						[260m inc	cluding culverts.							quality element from scheme	Overall effect on quality element a	Additional mitigation requirements	Residual effect on quality eleme	nt potential for deterioration of
Overall Status (2019):	Poor						Changes to water body			Changes to water body		Changes to water body			Changes to water body			Changes to water body	water bodies	water body scale		at water body scale	water body scale
					Footprint	Shading	changes in river processes and	Footprint	Shading	changes in river processes and	Footprint	changes in river processes and	Footprint	Shading	changes in river processes and	Footprint	Shading	changes in river processes and					
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	2019 Status			habitats upstream and downstream	n		habitats upstream and downstrear	m	habitats upstream and downstream	n		habitats upstream and downstrean	n		habitats upstream and downstream	n				
					Localised adverse effect anticipated	Localised adverse effect anticipated		Localised adverse effect anticipated	Localised adverse effect anticipated				Localised adverse effect anticipated	d Localised adverse effect anticipated		Localised adverse effect anticipated	Localised adverse effect anticipated			Localised adverse effect anticipated			
					when balanced against embedded	when balanced against embedded	Negligible effect anticipated when balanced against embedded	when balanced against embedded	when balanced against embedded	Negligible effect anticipated when balanced against embedded	Localised beneficial effect anticipate	ed. Negligible effect anticipated when balanced against embedded	when balanced against embedded	d when balanced against embedded	Negligible effect anticipated when balanced against embedded	when balanced against embedded	when balanced against embedded	Negligible effect anticipated when balanced against embedded		when scheme component effects			
	Fish	Poor	Good by 2027	Poor	mitigation. However, no deterioration	n mitigation. However, no deterioration	mitigation. No measurable change in	mitigation. However, no deterioration	mitigation. However, no deterioration	mitigation. No measurable change in	However, no increase in quality	mitigation. No measurable change in	mitigation. However, no deterioratio	on mitigation. However, no deterioratio	mitigation. No measurable change in	mitigation. However, no deterioratio	mitigation. However, no deterioration	mitigation. No measurable change in	None	no deterioration in status of quality	N/a	N/A	Compliant - no deterioration in quality
					at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additional	at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additiona	body scale.	quality element anticipated. Additiona	at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additiona	at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additional	al	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.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.		scale. Additional mitigation not required.			
					Localised adverse effect anticipated	Localised adverse effect anticipated		Localised adverse effect anticipated	Localised adverse effect anticipated				Localised adverse effect anticipated	d Localised adverse effect anticipated		Localised adverse effect anticipated	Localised adverse effect anticipated			Localised adverse effect anticipated			
					when balanced against embedded	when balanced against embedded	Negligible effect anticipated when balanced against embedded	when balanced against embedded	when balanced against embedded	Negligible effect anticipated when balanced against embedded	Localised beneficial effect anticipate	ed. Negligible effect anticipated when balanced against embedded	when balanced against embedded	when balanced against embedded	Negligible effect anticipated when balanced against embedded	when balanced against embedded	when balanced against embedded	Negligible effect anticipated when balanced against embedded		when scheme component effects			
Biological	Macroinvertebrates	Poor	Good by 2027	Poor	mitigation. However, no deterioration	n mitigation. However, no deterioration	mitigation. No measurable change in	mitigation. However, no deterioration	mitigation. However, no deterioration	mitigation. No measurable change in	However, no increase in quality	mitigation. No measurable change in	mitigation. However, no deterioratio	on mitigation. However, no deterioratio	mitigation. No measurable change in	mitigation. However, no deterioratio	mitigation. However, no deterioration	mitigation. No measurable change in	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality
					at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additional	at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additiona	body scale.	quality element anticipated. Additiona	at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additiona	at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additional	al	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.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.		scale. Additional mitigation not required.			
					Localised adverse effect anticipated	Localised adverse effect anticipated		Localised adverse effect anticipated	Localised adverse effect anticipated				Localised adverse effect anticipated	d Localised adverse effect anticipated		Localised adverse effect anticipated	Localised adverse effect anticipated			Localised adverse effect anticipated			
					when balanced against embedded	when balanced against embedded	Negligible effect anticipated when balanced against embedded	when balanced against embedded	when balanced against embedded	Negligible effect anticipated when balanced against embedded	Localised beneficial effect anticipate	ed. Negligible effect anticipated when balanced against embedded	when balanced against embedded	d when balanced against embedded	Negligible effect anticipated when balanced against embedded	when balanced against embedded	when balanced against embedded	Negligible effect anticipated when balanced against embedded		when scheme component effects			
	Macrophytes and Phytobenthos -	Poor	Good by 2027	Poor	mitigation. However, no deterioration	n mitigation. However, no deterioration	mitigation. No measurable change in	mitigation. However, no deterioration	mitigation. However, no deterioration	mitigation. No measurable change in	However, no increase in quality	mitigation. No measurable change in	mitigation. However, no deterioratio	on mitigation. However, no deterioratio	mitigation. No measurable change in	mitigation. However, no deterioratio	mitigation. However, no deterioration	mitigation. No measurable change in	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality
	combined				at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additional	at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additiona	al body scale.	quality element anticipated. Additiona	at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additiona	at the water body scale. Additional	at the water body scale. Additional	quality element anticipated. Additional	al	element anticipated at water body			
					mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.		mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.	mitigation not required.		required.			
						Nogligible offect extistents by t	Nogligible offect estisize to be		Nogligible offect activity to be	Negligible offect extistent of	Nogligible offect antisiants by the	Nogligible offect extistent of		Nogligible offect extisting to be	Nogligible offect extistent of		Nogligible offect extistent of	Nogligible offect activity to be		Localised adverse effect anticipated			
						balanced against embedded	balanced against embedded		balanced against embedded	balanced against embedded	balanced against embedded	balanced against embedded		balanced against embedded	balanced against embedded		balanced against embedded	balanced against embedded		considered in combination. However			
	Dissolved oxygen	High	Good by 2015	Good	impacts on element screened out at preliminary assessment stage	mitigation. No measurable change in	mitigation. No measurable change in	preliminary assessment stage	mitigation. No measurable change in	mitigation. No measurable change in	n mitigation. No measurable change i	in mitigation. No measurable change in	impacts on element screened out a preliminary assessment stage	mitigation. No measurable change i	mitigation. No measurable change in	impacts on element screened out a preliminary assessment stage	mitigation. No measurable change in	mitigation. No measurable change in	None	no deterioration in status of quality	N/A	N/A	compliant - no deterioration in quality element status anticipated
					premimary assessment stage.	quality element anticipated. Additional	quality element anticipated. Additional		quality element anticipated. Additional	Il quality element anticipated. Additiona	al quality element anticipated. Addition	nal quality element anticipated. Additiona		quality element anticipated. Addition	al quality element anticipated. Additiona		quality element anticipated. Additiona	l quality element anticipated. Additional	al	element anticipated at water body			
						initigation not required.	initigation not required.		initigation not required.	initigation not required.	initigation not required.	initigation not required.		initigation not required.	initigation not required.		mitigation not required.	initigation not required.		required.			
		High	Good by 2015	High	Impacts on element screened out at	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	Element is insensitive to impact. No	o Element is insensitive to impact. No	Impacts on element screened out a	at Element is insensitive to impact. No	Element is insensitive to impact. No	Impacts on element screened out a	Element is insensitive to impact. No	Element is insensitive to impact. No	None	Element is insensitive to impact. No	N//A	N1/A	Compliant - no deterioration in quality
	hu	пкп		пуп	preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.	. preliminary assessment stage.	measurable change to quality element.	t. measurable change to quality elemen	nt. measurable change to quality element	ent. measurable change to quality element	t. preliminary assessment stage.	measurable change to quality element	t. measurable change to quality element	. preliminary assessment stage.	measurable change to quality elemen	. measurable change to quality element	t. None	measurable change to quality element		IN/A	element status anticipated
											Negligible effect anticipated when	1								Negligible effect anticipated when			
					Impacts on element screened out at	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	balanced against embedded	Element is insensitive to impact. No	Impacts on element screened out a	at Element is insensitive to impact. No	Element is insensitive to impact. No	Impacts on element screened out a	Element is insensitive to impact. No	Element is insensitive to impact. No		when scheme component effects			Compliant - no deterioration in quality
Physicochemical	Phosphate	Poor	Good by 2027	Poor	preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.	. preliminary assessment stage.	measurable change to quality element.	t. measurable change to quality element	mitigation. No measurable change i	in measurable change to quality element	preliminary assessment stage.	measurable change to quality element	it. measurable change to quality element	preliminary assessment stage.	measurable change to quality elemen	. measurable change to quality element	t. None	measurable change in quality elemen	N/A	N/A	element status anticipated
riyscochemical											mitigation not required.	nai								anticipated. Additional mitigation not			
																				required. Negligible effect anticipated when			
											Negligible effect anticipated when balanced against embedded	1								when scheme component effects			
	Ammonia	Good	Good by 2015	Moderate	Impacts on element screened out at	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	mitigation. No measurable change i	Element is insensitive to impact. No	Impacts on element screened out a	at Element is insensitive to impact. No	Element is insensitive to impact. No	Impacts on element screened out a	Element is insensitive to impact. No	Element is insensitive to impact. No	, None	considered in combination. No	N/A	N/A	Compliant - no deterioration in quality
					preiminary assessment stage.	measurable change to quality element.	Theasurable change to quality element.	preliminary assessment stage.	Theasurable change to quality element.	t. Theasurable change to quality element	quality element anticipated. Addition	nal measurable change to quality element	. prenimilary assessment stage.	Theasurable change to quality element		. premining assessment stage.	Theasurable change to quality element			anticipated. Additional mitigation not			element status anticipateu
											mitigation not required.				10-10-					reauired.			
						Negligible effect anticipated when			Negligible effect anticipated when					Negligible effect anticipated when			Negligible effect anticipated when			Negligible effect anticipated when when scheme component effects			
	Temperature	High	Good by 2015	High	Impacts on element screened out at	balanced against embedded	Element is insensitive to impact. No	Impacts on element screened out at	balanced against embedded mitigation. No measurable change in	Element is insensitive to impact. No	Element is insensitive to impact. No	o Element is insensitive to impact. No	Impacts on element screened out a	balanced against embedded	Element is insensitive to impact. No	Impacts on element screened out a	balanced against embedded	Element is insensitive to impact. No	None	considered in combination. No	N/A	N/A	Compliant - no deterioration in quality
					preliminary assessment stage.	quality element anticipated. Additional	measurable change to quality element.	. preliminary assessment stage.	quality element anticipated. Additional	measurable change to quality element	nt. measurable change to quality element	ent. measurable change to quality element	t. preliminary assessment stage.	quality element anticipated. Addition	heasurable change to quality element	. preliminary assessment stage.	quality element anticipated. Additiona	measurable change to quality element	t.	measurable change in quality element			element status anticipated
						mitigation not required.			mitigation not required.					mitigation not required.			mitigation not required.			required.			
																				Localised adverse effect anticipated			
																				when scheme component effects considered in combination. However			
Specific Pollutants	Copper, Triclosan, Zinc	N/A (high)	N/A	-	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	t Impacts on element screened out a	at Impacts on element screened out at	Impacts on element screened out a	at Impacts on element screened out a	Impacts on element screened out at	Impacts on element screened out a	Impacts on element screened out at	Impacts on element screened out at	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality
					preminiary assessment stage.	preminary assessment stage.	premining assessment stage.	preminary assessment stage.	prenimitary assessment stage.	preminary assessment stage.	prenninary assessment stage.	preminary assessment stage.	premining assessment stage.	premining assessment stage.	preminary assessment stage.	preminary assessment stage.	premining assessment stage.	preminiary assessment stage.		element anticipated at water body			
																				scale. Additional mitigation not required.			
					Localised adverse effect anticipated		New Hothers (Contraction to the last	Localised adverse effect anticipated		No all'alle la 66 an ambietra territoria			Localised adverse effect anticipated	ed and a second s		Localised adverse effect anticipated				Localised adverse effect anticipated			
					when balanced against embedded		balanced against embedded	when balanced against embedded		balanced against embedded		balanced against embedded	when balanced against embedded		balanced against embedded	when balanced against embedded		balanced against embedded		considered in combination. However,			
	Quantity and dynamics of water flow				mitigation. However, no deterioration	Impacts on element screened out at preliminary assessment stage.	mitigation. No measurable change in	in status of guality element anticipated	Impacts on element screened out at preliminary assessment stage.	mitigation. No measurable change in	Element is insensitive to impact. No measurable change to quality element	o mitigation. No measurable change in	in status of quality element anticipat	on Impacts on element screened out a ted preliminary assessment stage.	mitigation. No measurable change in	in status of quality element anticipate	Impacts on element screened out at preliminary assessment stage.	mitigation. No measurable change in	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality element status anticipated
					at the water body scale. Additional		quality element anticipated. Additional	at the water body scale. Additional		quality element anticipated. Additiona	al	quality element anticipated. Additiona	at the water body scale. Additional	ll promining second sugar	quality element anticipated. Additiona	at the water body scale. Additional		quality element anticipated. Additional		element anticipated at the water body			
					mitigation not required.		initigation not required.	mitigation not required.		initigation not required.		initigation not required.	mitigation not required.		initigation not required.	mitigation not required.		initigation not required.		reauired.			
					Localised adverse effect anticipated			Localised adverse effect anticipated					Localised adverse effect anticipated	ed a state of the		Localised adverse effect anticipated				Localised adverse effect anticipated			
					when balanced against embedded			when balanced against embedded					when balanced against embedded			when balanced against embedded				considered in combination. However,			
	Connection to groundwater bodies				mitigation. However, no deterioration	n Impacts on element screened out at	Element is insensitive to impact. No	mitigation. However, no deterioration	Impacts on element screened out at preliminary assessment stage.	Element is insensitive to impact. No	Element is insensitive to impact. No	 Element is insensitive to impact. No measurable change to quality element 	mitigation. However, no deterioratio	on Impacts on element screened out a ted preliminary assessment stage	Element is insensitive to impact. No measurable change to quality element	mitigation. However, no deterioratio	Impacts on element screened out at	Element is insensitive to impact. No measurable change to quality element	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality element status anticipated
					at the water body scale. Additional			at the water body scale. Additional	preminary assessment stager				at the water body scale. Additional			at the water body scale. Additional				element anticipated at the water body			
					mitigation not required.			mitigation not required.					mitigation not required.			mitigation not required.				required.			
					Localised adverse effect anticipated			Localised adverse effect anticipated					Localised adverse effect anticipated	ed a state of the		Localised adverse effect anticipated				Localised adverse effect anticipated			
					when balanced against embedded		balanced against embedded	when balanced against embedded			Localised beneficial effect anticipate	ed. balanced against embedded	when balanced against embedded		balanced against embedded	when balanced against embedded		balanced against embedded		when scheme component effects considered in combination. However			
	River continuity				mitigation. However, no deterioration	n Impacts on element screened out at	mitigation. No measurable change in	mitigation. However, no deterioration	Impacts on element screened out at	Element is insensitive to impact. No	However, no increase in quality	mitigation. No measurable change in	mitigation. However, no deterioratio	on Impacts on element screened out a	mitigation. No measurable change in	mitigation. However, no deterioratio	Impacts on element screened out at	mitigation. No measurable change in	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality
					at the water body scale. Additional	premining assessment stage.	quality element anticipated. Additional	at the water body scale. Additional	preniminary assessment stage.	incusar asie change to quality element	body scale.	quality element anticipated. Additiona	at the water body scale. Additional		quality element anticipated. Additiona	at the water body scale. Additional	prenimitery assessment stage.	quality element anticipated. Additional		element anticipated at the water body			
Hydromorphological		Supports Good	Supports Good by 2015	Supports Good	mitigation not required.		mugation not required.	mitigation not required.					mitigation not required.			mitigation not required.		mugation not required.		required.			
Hydromorphological		Supports Good	Supports Good by 2015	Supports Good	Localised adverse effect anticipated			Localised adverse effect anticipated					Localised adverse effect anticipated	.d		Localised adverse effect anticipated				Localised adverse effect anticipated			
					when balanced against embedded		Negligible effect anticipated when balanced against embedded	when balanced against embedded		Negligible effect anticipated when balanced against embedded	Localised beneficial effect anticipate	ed. Negligible effect anticipated when balanced against embedded	when balanced against embedded		Negligible effect anticipated when balanced against embedded	when balanced against embedded		Negligible effect anticipated when balanced against embedded		when scheme component effects considered in combination. However.			
	River depth and width variation				mitigation. However, no deterioration	n Impacts on element screened out at	mitigation. No measurable change in	mitigation. However, no deterioration	Impacts on element screened out at	mitigation. No measurable change in	However, no increase in quality	mitigation. No measurable change in	mitigation. However, no deterioratio	on Impacts on element screened out a	mitigation. No measurable change in	mitigation. However, no deterioratio	Impacts on element screened out at	mitigation. No measurable change in	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality element status anticipated
					at the water body scale. Additional		quality element anticipated. Additional	at the water body scale. Additional	- and a second control course.	quality element anticipated. Additiona	al body scale.	quality element anticipated. Additiona	at the water body scale. Additional	l	quality element anticipated. Additiona	at the water body scale. Additional	provide the stage.	quality element anticipated. Additional		element anticipated at the water body			
					mitigation not required.		initigation not required.	mitigation not required.		initigation not required.		integation not required.	mitigation not required.			mitigation not required.		initigation not required.		required.			
					Localised adverse effect anticipated			Localised adverse effect anticipated					Localised adverse effect anticipated	d		Localised adverse effect anticipated		Ne-li-ible ofference in the		Localised adverse effect anticipated			
					when balanced against embedded		balanced against embedded	when balanced against embedded		balanced against embedded	Localised beneficial effect anticipate	ed. balanced against embedded	when balanced against embedded		balanced against embedded	when balanced against embedded		balanced against embedded		when scheme component effects considered in combination. However			
	Structure and substrate of the river bed				mitigation. However, no deterioration	preliminary assessment stage	mitigation. No measurable change in	mitigation. However, no deterioration in status of quality element anticipated	Impacts on element screened out at preliminary assessment stage	mitigation. No measurable change in	n element status anticipated at the wat	mitigation. No measurable change in	in status of quality element anticipat	on Impacts on element screened out a ted preliminary assessment stage	mitigation. No measurable change in	in status of quality element anticipate	Impacts on element screened out at preliminary assessment stage	mitigation. No measurable change in	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality element status anticipated
					at the water body scale. Additional	p. mining assessment stage.	quality element anticipated. Additional	at the water body scale. Additional		quality element anticipated. Additiona	al body scale.	quality element anticipated. Additiona	at the water body scale. Additional		quality element anticipated. Additiona	at the water body scale. Additional		quality element anticipated. Additional		element anticipated at the water body			
					mitigation not required.			mitigation not required.		initigation not required.		integation not required.	mitigation not required.		initigation not required.	mitigation not required.		magador not required.		reauired.			
					Localised adverse effect anticipated			Localised adverse effect anticipated					Localised adverse effect anticipated	d		Localised adverse effect anticipated				Localised adverse effect anticipated			
					when balanced against embedded			when balanced against embedded					when balanced against embedded			when balanced against embedded				considered in combination. However			Concellar to the test of the
	Structure of the riparian zone				in status of quality element anticipated	preliminary assessment stage	Element is insensitive to impact. No measurable change to quality element	in status of quality element anticipated	preliminary assessment stage	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No nt. measurable change to quality element	ent. measurable change to quality element	in status of quality element anticipat	ted preliminary assessment stage	Element is insensitive to impact. No measurable change to quality element	mitigation. However, no deterioratio	d preliminary assessment stage	Element is insensitive to impact. No measurable change to quality element	t. None	no deterioration in status of quality	N/A	N/A	compliant - no deterioration in quality element status anticipated
					at the water body scale. Additional			at the water body scale. Additional	,	and the second control of the second control	Be to quilty cleftlet		at the water body scale. Additional			at the water body scale. Additional		Be to quality element		element anticipated at the water body scale. Additional mitigation pot			
					mitigation not required.			mitigation not required.					mitigation not required.			mitigation not required.				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	Impacts on element screened out at	Impacts on element screened out at	Impacts on element screened out at	t Impacts on element screened out a	at Impacts on element screened out at	Impacts on element screened out a	at Impacts on element screened out a	Impacts on element screened out at	Impacts on element screened out a	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
L			I		preliminary assessment stage.	preliminary assessment stage.	premininary assessment stage.	premininary assessment stage.	premininary assessment stage.	premininary assessment stage.	prenimitary assessment stage.	preniminary assessment stage.	preiminary assessment stage.	preliminary assessment stage.	prenninary assessment stage.	premininary assessment stage.	preinning assessment stage.	premininary assessment stage.		premininary assessment stage.			element status anticipated

Shropshire Union Canal, Market Dray	ton to Ellesmere Port (GB71210133)	
Water body type:	Canal	
Hydromorphological designation:	Artificial	
Overall Status (2015):	Moderate	
Overall Status Objective:	Good by 2021	
Overall Status (2019):	Moderate	
WFD Status Element	WFD Quality Element	RBMP Cycl Stat
	Fish	N/#
Biological	Macroinvertebrates	N/A
	Macrophytes and Phytobenthos - combined	N/A
	Dissolved oxygen	Hig
	рН	Hig
Physicochemical	Biological dissolved oxygen demand (BOD)	Hig
	Ammonia	Hig
	Temperature	Hig
Specific Pollutants	Copper, Triclosan, Zinc	N//
	Quantity and dynamics of water flow	
	Connection to groundwater bodies	
Hydromorphological	River continuity	N/#
	River depth and width variation	
	Structure and substrate of the river bed	
	Structure of the riparian zone	
Chemical	Priority substances	Goo

Table A.4: Shropshire Union Canal,	Market Drayton to Ellesmere Port (GB71210133) detaile	d impact assessment - effects on cu	rrent status										
Shropshire Union Canal, Market Drayto	on to Ellesmere Port (GB/1210133)		W/21	torcourse (receptor value)	•	Detailed Imp	act Assessment				Detailed Impact Assessment Outcome	e	
Water body type: Hydromorphological designation:	Artificial		Schem	ne component (Unique ID):	Shropshire Union Canal Offline Overbridge	Shropshire Union Canal Viaduct No.2	Shropshire Union Canal Viaduct No.1	Shropshire Union Canal Viaduct No.3					
Overall Status (2015):	Moderate		Descript	ion of scheme component	(GB71210133-MW-01-OB-01) 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.	<i>r</i> <i>A 14.0m wide x 84.5m long RC box girder</i> <i>viaduct, up to 7.6m in height above</i> <i>existing ground level.</i>	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 water body scale	at WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
Overall Status Objective:	Good by 2021		Impact type	from scheme component	:				water boules				
Overall Status (2019):	Moderate		1	1	Shading	Shading	Shading	Shading					
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015	RBMP Cycle 2 Status	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 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
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.	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 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
	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 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 t. 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 t. 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 t. 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 n. 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
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	Impacts on element screened out at	None	Impacts on element screened out at	ΝΙ/Δ	ΝΙ/Δ	Compliant - no deterioration in quality
	Quantity and dynamics of water flow				preliminary assessment stage. Impacts on element screened out at	preliminary assessment stage.Impacts on element screened out atpreliminary assessment stage.	preliminary assessment stage. Impacts on element screened out at	preliminary assessment stage.Impacts on element screened out atpreliminary assessment stage.	None	preliminary assessment stage. Impacts on element screened out at	N/A	N/A	element status anticipated Compliant - no deterioration in quality
	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	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			Compliant - no deterioration in quality
Hydromorphological	River depth and width variation	N/A	N/A	N/A	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	None	preliminary assessment stage. Impacts on element screened out at			element status anticipated Compliant - no deterioration in quality
	River depth and width variation				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	INONE	preliminary assessment stage.	IN/A	IN/A	element status anticipated
	Structure and substrate of the river bed				preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	None	preliminary assessment stage.	N/A	N/A	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.	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
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

Mathemation Statisticati Statisti Statistication Statistication Statistication Statisti	Table A.5: Dane (Wheelock to Weave Dane (Wheelock to Weaver) (GB11206806)	r) (GB112068060470) detailed impa 0470)	act assessment - effects	on current status		Detailed Impa	act Assessment		
Sun bias into into into into into into into into	Water body type: Hydromorphological designation:	River Not A/HMWB		Wat Schen	tercourse (receptor value): ne component (Unique ID):	River Dane Viaduct (GB11)	e (Very high) 2068060470-MW-01-VD-01)	-	
Charton de la cal Indexe Index Indexe Indexe <t< th=""><th>Overall Status (2015): Overall Status Objective:</th><th>Bad Moderate by 2027</th><th></th><th>Descript Impact type</th><th>ion of scheme component: from scheme component:</th><th>A 14.0m wide x 1.13km RC box girder viadu</th><th>uct comprising 26 spans up to a max. height</th><th>Cumulative effects - effects on quality</th><th>Overall effect on quality el</th></t<>	Overall Status (2015): Overall Status Objective:	Bad Moderate by 2027		Descript Impact type	ion of scheme component: from scheme component:	A 14.0m wide x 1.13km RC box girder viadu	uct comprising 26 spans up to a max. height	Cumulative effects - effects on quality	Overall effect on quality el
Name	Overall Status (2019):	Moderate				Shading	Changes to water body hydromorphology leading to changes	element from scheme component(s) located in other WFD water bodies	water body scale
Fig. Cost Cost (Cost (2)) Har as (Cost (2)) Aggest Associated of (1), Cost (2)) Agg	WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019		in river processes and habitats upstream and downstream		
Maximum Same		Fish	Good	Good 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.	None	Negligible effect anticipated w scheme component effects c in combination. No measural in quality element anticip Additional mitigation not re
Image: Section (Section (Biological	Macroinvertebrates	Bad	Good by 2027	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.	None	Negligible effect anticipated w scheme component effects c in combination. No measurat in quality element anticip Additional mitigation not re
Processes Particle state Particle s		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.	None	Negligible effect anticipated w scheme component effects c in combination. No measurat in quality element anticip Additional mitigation not re
Image: Second		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.	None	Negligible effect anticipated w scheme component effects c in combination. No measurat in quality element anticip Additional mitigation not m
Prisidenerical Fasce Acrity 201 Face Email is consistentiation in the accordination in the accordin the accordination in the accordination in the acc		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.	None	Negligible effect anticipated w scheme component effects c in combination. No measurat in quality element anticip Additional mitigation not re
Ameria Ingle Contry XC Ingle Learners services in merch Index on conductance in merch In	Physicochemical	Phosphate	Poor	Poor by 2015	Poor	Element is insensitive to impact. No measurable change to quality element.	Impacts on element screened out at preliminary assessment stage.	None	Negligible effect anticipated w scheme component effects c in combination. No measurat in quality element anticip Additional mitigation not re
Image: second		Ammonia	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.	None	Negligible effect anticipated w scheme component effects c in combination. No measurat in quality element anticip Additional mitigation not re
Specific Pollutarity Gapper, Teldoan, Zinc High High by 2015 High High IndexConcentral Specific do of all present docs of present		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.	None	Negligible effect anticipated w scheme component effects c in combination. No measurat in quality element anticip Additional mitigation not re
Number in the second	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.	None	Negligible effect anticipated w scheme component effects c in combination. No measurat in quality element anticip Additional mitigation not re
Impacts on element screened outst Element is insensitive to impact. No none Results insensitive to impact. No none structure and substrate of the river struct		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 w scheme component effects c in combination. No measurat in quality element anticip Additional mitigation not re
Hydromorphological River continuity Supports Good		Connection to groundwater bodies				Impacts on element screened out at	Element is insensitive to impact. No	None	Element is insensitive to im
Hydromorphological River depth and width variation Supports Good Supports Good Supports Good Supports Good Impacts on element screened out at preliminary assessment stage. Negligible effect anticipated scheme screened out at preliminary assessment stage. Negligible effect anticipated scheme screened out at preliminary assessment stage. None Negligible effect anticipated scheme screened out at preliminary assessment stage. None Negligible effect anticipated scheme screened out at preliminary assessment stage. None Negligible effect anticipated scheme screened out at preliminary assessment stage. None None Negligible effect anticipated scheme screened out at preliminary assessment stage. None Negligible effect anticipated scheme screened out at preliminary assessment stage. None Negligible effect anticipated scheme screened out at preliminary assessment stage. Negligible effect anticipated scheme component effects in combination. No measure in quality element anticipated scheme component effects in combination. No measure in quality element anticipated scheme component effects in combination. No measure in quality element anticipated scheme component effects in combination. No measure in quality element anticipated scheme component effects in combination. No measure in quality element anticipated scheme component effects in combination. No measure in quality element anticipated scheme component effects in combination. No measure in quality element anticipated scheme component effects in combination. No measure in quality element anticipated scheme component effects in combination. No measure in quality element anticipated s		River continuity				Impacts on element screened out at preliminary assessment stage.	Element is insensitive to quality element. No measurable change to quality element.	None	Element is insensitive to quality measurable change to quality
Image: structure and substrate of the river bed Structure and substrate of the river bed Negligible effect anticipated when preliminary assessment stage. Negligible effect anticipated when preliminary assessment stage. None Negligible effect anticipated when preliminary assessment stage. None None Negligible effect anticipated when preliminary assessment stage. Impacts on element screened out at preliminary assessment stage. Impacts on element screened out at preliminary assessment stage. None None Impacts on element screened out at preliminary assessment stage. None None Impacts on element screened out at preliminary assessment stage. None Impacts on element screened out at preliminary assessment stage. None Impacts on element screened out at preliminary assessment stage. None Impacts on element screened out at preliminary assessment stage. None Impacts on element screened out at preliminary assessment stage. None Impacts on element screened out at preliminary assessment stage. None Impacts on element screened out at preliminary assessment stage. None Impacts on element screened out at preliminary assessment stage. None Impacts on element screened out at preliminary assessment stage. None Impacts on element screened out at preliminary assessment stage. None Impacts on element screened out at preliminary assessment stage. None Impacts o	Hydromorphological	River depth and width variation	Supports Good	Supports Good by 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 w scheme component effects co in combination. No measurat in quality element anticip Additional mitigation not re
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 scheme component considered in combination. deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated when scheme component considered in combination. deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated attos of quality element anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated attos of quality element anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated attos of quality element anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated attos of quality element anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated attos of quality element anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated at the water body scale. Additional mitigation not required.Localised adverse effect anticipated at the water body scale. Additional mitigation at prel		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 w scheme component effects co in combination. No measurat in quality element anticip Additional mitigation not re
ChemicalGood by 2015FailImpacts on element screened out at preliminary assessment stage.Impacts on element screened out at preliminary assessment stage.		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 and when scheme component considered in combination. H deterioration in status of qual anticipated at water body Additional mitigation not re
	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 screene preliminary assessment s

l			
ement at	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
hen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
nen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
nen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
nen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
nen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
hen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
hen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
hen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
hen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
hen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
oact. No element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
oact. No element.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
hen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
hen when insidered le change ated. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
cipated effects owever no ty element scale. quired.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
d out at	N/A	N/A	Compliant - no deterioration in quality

Table A.6: Trent and Mersey Canal, summi	t to Preston Brook Tunnel (GB71	1210247) detailed imp	act assessment - effects	on current status								
Trent and Mersey Canal, summit to Preston B	rook Tunnel (GB71210247)		Watorco	ourse (receptor value):		Detailed Impact Assessment				Detailed Impact Assessment Outcom	2	
Water body type: Hydromorphological designation:	Artificial		Scheme co	omponent (Unique ID):	River Dane Viaduct (GB71210247-MW-01-VD-01)	Puddinglake Brook Viaduct (GB71210247-MW-01-VD-02)	Trent and Mersey Canal Viaduct (GB71210247-MW-01-VD-03)					
Overall Status (2015):	Moderate		Description o	of scheme component:	A 14.0m wide x 1.13km RC box girder viaduct comprising 26 spans up to a max height of 28.9m.	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	 An approx 14.0m wide x 283m long RC box girder viaduct comprising 4x19.4m span,2x28.0 span,2x27.3m span and 1x39 span up to a max. height of approx 12.6m. 	Cumulative effects - effects on quality element from scheme x 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	t WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
Overall Status Objective:	Moderate by 2015		Impact type from	m scheme component:								
Overall Status (2019): WFD Status Element	Moderate WFD Quality Element	RBMP Cycle 2 2015	RBMP Cycle 2 Status	2019 Status	Shading	Shading	Shading					
	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. 	n. None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	e 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. 	n. None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	e 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. 	n. None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	d e N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Dissolved oxygen	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 b. balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when n. balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	n. None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	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 t. measurable change to quality element	t.	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)	N/A	N/A	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 t. measurable change to quality element	t. 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	N/A	N/A	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 t. measurable change to quality element	t. 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	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. 	n. None	Negligible effect anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	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	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				Impacts on element screened out at preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	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	element status anticipatedCompliant - 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.	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.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
πγαι υποι μποιοgical	River depth and width variation	N/A	N/A	IN/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.	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 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
	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
Chemical	Priority substances	Fail	Fail 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
	I		1	1	prominiary assessment stage.				preminary assessment stage.		1	

Table A.7: Puddinglake Brook (GB112068060220) detailed impact assessme Puddinglake Brook (GB112068060220)	ent - effects on current status				Detailed Imp	act Assessment			Detailed Impact Assessment Outcome		
Water body type:	River	W	Vatercourse (receptor valu	e):	Puddinglake Brook Viaduct	e Brook (High) Puddinglake Brook Overbridge	-				
Overall Status (2015):	Poor	Dese	cription of scheme compo	nent:	(GB112068060220-MW-01-VD-01) A 14.0m wide x 160m long RC box girder viaduct comprising 4 x 40.0m spans up to	(GB112068060220-MW-01-OB-01) Whatcroft Hall Lane temporary road realignment	Cumulative effects - effects on 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
Overall Status Objective:	Good by 2027	Impac	ct type from scheme comp	onent:			- water bodies	water body scale		water body state	quality element at water body scale
Overall Status (2019): WFD Status Element	Poor WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	2019 Status	Shading	Shading					
	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.	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 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 ir 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 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
	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.	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
	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
Chemical	Priority substances	Good	Good by 2015	Fail	preliminary assessment stage.	preliminary assessment stage.	None	preliminary assessment stage.	N/A	N/A	element status anticipated

	Table A.8: Wade Brook (GB112068	3060370) detailed impact assessm	ent - effects on current status
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<table-container> Additional bias Carbon bia Carbon bias Carbon bias</table-container>	Wade Brook (GB112068060370)								Deta	iled Impact Assessment							Detailed Impact Assess
Additional participants Additional participants	Water body type:	River		w	atercourse (receptor value)	e): Gad Brook (Moderate)	Tributary of Gad Brook 3 (Moderate)				Wade Brook (High)						
Image: state Image: state	Hydromorphological designation:	Not A/HMWB		Sche	eme component (Unique ID)): Gad Brook Viaduct (GB112068060370-T	- Gad Brook Viaduct (GB112068060370-T	- Wade Brook Viaduct (GB11206806037	0- Extension	of existing culvert (GB112068060370-MV	V-04-CVX-01)	A556 Shurlach Road Realignment - Highway Drainage	Wade Bro	ok Overbridge			
Marcine	Overall Status (2015):	Poor		Descrip	otion of scheme component	01-VD-01) A 14.0m wide x 980.0m RC box girder viaduct comprising 28 x 35.0m spans up to a max. height of 17.6m.	02-VD-02) A 14.0m wide x 980.0m RC box girder viaduct comprising 28 x 35.0m spans up to a max. height of 17.6m.	MW-04-VD-03) A 14.0m wide x 285.0m long RC box girde viaduct comprising 2 x 30.0m spans, 4 x 35.0m spans, 50.0m and 35.0m span up to a max. height of 17.5m.	er _X Access road follows route of existing roo case preca	d and crosses watercourse. No culvert in de itionary basis this will require extension of e	esign drawings, but assumed that in worst- xisting culvert.	Outfall (GB112068060370-MW-04-HD-01) Road drainage outfalls from A556 Shurlach Road Realignment. Drains to Wade Brook. Failed HEWRAT assessment due to existing high background concentrations above EQS in the watercourse, but passed further metal bioavailability assessment	Offline Overbridge for A556 Shurlach Ro in	ad over Wade Brook, approximately 105.0m length.	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
Alt of the state Alt of the state </th <th>Overall Status Objective:</th> <th>Good by 2027</th> <th></th> <th>Impact typ</th> <th>be from scheme component</th> <th>t:</th> <th></th> <th></th> <th></th> <th></th> <th>Changes to water body</th> <th>Drainage (changes in water quantity or quality due to</th> <th>,</th> <th>Changes to water body</th> <th></th> <th></th> <th></th>	Overall Status Objective:	Good by 2027		Impact typ	be from scheme component	t:					Changes to water body	Drainage (changes in water quantity or quality due to	,	Changes to water body			
Vertication	Overall Status (2019):	Poor	RBMP Cycle 2 2015	RBMP Cycle 2 Status		Shading	Shading	Shading	Footprint	Shading	in river processes and habitats	discharge of surface water runoff to surface water	Shading	in river processes and habitats			
Image: state	WFD Status Element	WFD Quality Element	Status	Objective	2019 Status						upstream and downstream	body);		upstream and downstream			
Act Act <td></td> <td>Fish</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.</td> <td>Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.</td> <td>Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.</td> <td>n. b. Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration i status of quality element anticipated a the water body scale. Additional mitigation not required.</td> <td>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.</td> <td>Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.</td> <td>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.</td> <td>Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration i status of quality element anticipated a the water body scale. Additional mitigation not required.</td> <td>Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.</td> <td>None</td> <td>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.</td> <td>N/A</td>		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.	n. b. Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration i status of quality element anticipated a 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 i status of quality element anticipated a 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
Image: state Image: state<	Biological	Macroinvertebrates	Poor	Good by 2027	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.	Negligible effect anticipated when balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	n. Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration i status of quality element anticipated a 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 i status of quality element anticipated a 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
Answer		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.	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.	n. bits 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 i status of quality element anticipated a 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
And And And And And And And And And And		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.	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.	n. 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.	. 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
Alton <!--</td--><td></td><td>рН</td><td>High</td><td>Good by 2015</td><td>High</td><td>Element is insensitive to impact. No measurable change to quality element.</td><td>Element is insensitive to impact. No measurable change to quality element.</td><td>Element is insensitive to impact. No measurable change to quality element</td><td>t. Impacts on element screened out at preliminary assessment stage.</td><td>Element is insensitive to impact. No measurable change to quality element.</td><td>Element is insensitive to impact. No measurable change to quality element.</td><td>Element is insensitive to impact. No measurable change t quality element.</td><td>Element is insensitive to impact. No measurable change to quality element</td><td>Impacts on element screened out at . preliminary assessment stage.</td><td>None</td><td>Element is insensitive to impact. No measurable change to quality element.</td><td>N/A</td>		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	t. 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 t 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.	N/A
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<table-container> A prime A prim A prime A prime</table-container>		Ammonia	Moderate	Good by 2027	Bad	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	t. 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 t 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.	N/A
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$ \begin{tiabular}{l l l l l l l l l l l l l l l l l l l $	Hydromornhological	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 i status of quality element anticipated a 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.	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.	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
Image: base base base base base base base base	nyuromorphological	River depth and width variation	Supports Good	Supports Good by 2015	s supports dood	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 i status of quality element anticipated a 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.	I. 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.	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
Image: Description of the second description of		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 i status of quality element anticipated a 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.	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.	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
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	Chemical	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 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

				Detailed Impact Assessment Outcome		
ook 037 Dac Ier	Overbridge '0-MW-04-OB-01) I over Wade Brook, approximately 105.0m ogth. Changes to water body hydromorphology leading to changes	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
in at	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	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.	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
in at	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Additional mitigation not required. 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
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t.	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
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t.	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
n.	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
	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	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
	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	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
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	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	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
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	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
	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.9: Peover Eye (GB112068060390) det Peover Eye (GB112068060390)	cailed impact assessment - effects on currer	nt status					Detailed Imp	act Assessment							Detailed Impact Assessment Outcome	2	
Water body type:	River		Water	rcourse (receptor value):		Tributary of Peo	ver Eye (Moderate)			Peover	Eye (High)						
Hydromorphological designation:	Not A/HMWB		Scheme	e component (Unique ID):	Smoker Brook Viaduct (G	B112068060390-T-01-VD-01)	Tributary of Peover Eye - watercours	e realignment (GB112068060390-T-01-RE	Smoker B	rook Viaduct	Peover Eye - watercourse realig	nment (GB112068060390-MW-02-RE-01)	Cumulative effects - effects on				WED compliance outcome motorial
Overall Status (2015): Overall Status Objective:	Good by 2027		Impact type fr	rom scheme component:	An approx 14.0m wide x 805.5m long RC	Changes to water body	Two realignments of Tributary of Peover L	Changes to water body	An approx 14.0m wide x 805.5m long RC	Changes to water body	Realignment of Peover E	Changes to water body	quality element from scheme	Overall effect on quality element at	Additional mitigation requirements	Residual effect on quality element at	for deterioration of current status of
Overall Status (2019):	Bad				Chading	hydromorphology leading to changes	Eastprint	hydromorphology leading to changes	Shading	hydromorphology leading to changes	5 Footprint	hydromorphology leading to changes	component(s) located in other WFD	water body scale		water body scale	quality element at water body scale
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015	RBMP Cycle 2 Status	Status 2019	Shaung	in river processes and habitats	Footprint	in river processes and habitats	Shaung	in river processes and habitats	Footprint	in river processes and habitats	water boules				
	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.	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.	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 n deterioration in status of quality element anticipated at water body scale. Additional mitigation not	o N/A	N/A	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	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. 	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.	None	required. Localised adverse effect anticipated when scheme component effects considered in combination. However n deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	o N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Macrophytes and Phytobenthos - combined	Moderate	Good by 2027	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.	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.	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 n deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	o 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.	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.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigatio No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when bn. balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	Negligible effect anticipated when whe scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	n J 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.	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.	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.	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.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigatio No measurable change in quality element anticipated. Additional mitigation not required.	n. Element is insensitive to impact. No measurable change to quality element.	None	Negligible effect anticipated when whe scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	n d e 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.	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.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigatio 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 whe scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	n d 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.	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.	Element is insensitive to impact. No measurable change to quality elemen	Element is insensitive to impact. No nt. measurable change to quality element.	None	Negligible effect anticipated when whe scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	n d 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	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 a	t 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				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.	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. 	None	Negligible effect anticipated when whe scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	n d e 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.	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.	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.	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 is insensitive to impact. No measurable change to quality element.	Negligible effect anticipated when balanced against embedded mitigatio No measurable change in quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when on. balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	None	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	N/A	Compliant - no deterioration in quality element status anticipated
Hydromorphological	River depth and width variation	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.	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.	Negligible effect anticipated when on. 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 n deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	o N/A	N/A	Compliant - no deterioration in quality element status anticipated
	Structure and substrate of the river bec	3			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.	 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.	None	Negligible effect anticipated when whe scheme component effects considered in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	n d e 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.	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 nt. measurable change to quality element.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However n deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	o 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.	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.	None	Impacts on element screened out at preliminary assessment stage.	N/A	N/A	Compliant - no deterioration in quality element status anticipated

Table A.10: Smoker Brook (Gale Brook to Smoker Brook (Gale Brook to Wincham Brook)	Wincham Brook) (GB112068060410) detail (GB112068060410)	led impact assessment - o	effects on current statu	IS				Detailed Impact Assessment						Detailed Impact Assessment Outcome		
Water body type:	River	w	atercourse (receptor value	e):	Smoker B	rook (High)	Waterless Brook / Arley Brook (High)	Tabley Brook		Tributary of Tabley Brook 9						
Hydromorphological designation:	Not A/HMWB	Sch	neme component (Unique l	D):	Smoker B (GB1120680604	rook Viaduct 10-MW-01-VD-01)	Arley Brook Viaduct (GB112068060410-MW-03-VD-02)	Site access clear span bridge over Table Brook (GB112068060410-T-01-OB-01)	ey 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	Desc	cription of scheme compon	ient:	An approx 14.0m wide x 805.5m long RC spans up to a mo	box girder viaduct comprising 18 x 44.8m x. 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	d 297m long box 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 glacial till and the Mercia Mudstone Group.	Hoo Green north cutting is approx. 2.7km in length, with a maximum of 17.3m cutting depth. Hoo Green nouth cutting retaining wall is approx. 500m in length, with a maximum of 10.2m cutting depth.	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 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	Impac	t type from scheme compo	onent:					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	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	S 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	5				
	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.	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 ir 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 ne deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	nt 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 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.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However ne deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	o N/A ht	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 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.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However ne deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	o N/A ht	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 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	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	None	Element is insensitive to impact. No	N/A	N/A	Compliant - no deterioration in quality
Physicochemical	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.	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/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.	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	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 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 e N/A	N/A	Compliant - no deterioration in quality element status anticipated
Specific 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.	preliminary assessment stage.	preliminary assessment stage.	None	preliminary assessment stage.	N/A	N/A	element status anticipated
	Quantity and dynamics of water flow				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.	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 ne 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
	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.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration ir 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 ir 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 elemen anticipated at water body scale. Additional mitigation not required.	o N/A nt	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.	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	Localised adverse effect anticipated when scheme component effects considered in combination. However ne deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	nt N/A	N/A	Compliant - no deterioration in quality element status anticipated
Ηγατοποτρησιοgical	River depth and width variation	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.	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.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However ne deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	nt 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.	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.	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 ne deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	nt 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.	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.	None	Localised adverse effect anticipated when scheme component effects considered in combination. However ne deterioration in status of quality elemen anticipated at water body scale. Additional mitigation not required.	nt 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.	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 Ship Canal) (GB112069061382) detailed impact assessment - effects on current status

Bollin (Ashley Mill to Manchester Ship Canal) (G	(B112069061382)	a impact assessment "ene						Detailed Impact Assessment						Detailed Impact Assessment Outcome		
Water body type:	River		Wa	atercourse (receptor value	e): Millington	n Clough (High)	Agden Bro	ok (Moderate)	Tributary of River Bollin 10 (Moderate)	Tributary of Rive	r Bollin 11 (Moderate)					
Hydromorphological designation:	HMWB		Sche	me component (Unique ID	Millington Clough Underbridge (GB112069061382-MW-05-UB-01)	Millington Clough Oflline Underbridge (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)	Rostherne Cutting Retaining Wall West (GB112069061382-T-08-CU-02)					
Overall Status (2015):	Moderate		Descrip	tion of scheme componen	Millington Clough Underbridge approx. 58m in length and max. 5.6m above existing ground level (Confirm component naming and height)	Offline Overbridge for Peacock Lane t Access Track over Millington Clough	A 119.0m long concrete box girder viaduct 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	t WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
Overall Status Objective:	Moderate by 2015		Impact typ	e from scheme componen	it:			Changes in flow velocity and volume	/ 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 change in river processes and habitats upstream and downstream	Changes to water body hydromorphology leading to change in river processes and habitats upstream and downstream	Changes to water body hydromorphology leading to change 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 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 elemen 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	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 h. 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.	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 elemen anticipated at water body scale. Additional mitigation not required.	N/A t	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	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 t. 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 is insensitive to impact. No t. 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	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	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	None	Impacts on element screened out at	N/A	N/A	Compliant - no deterioration in quality
	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.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration i status of quality element anticipated a the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration in t status of quality element anticipated a 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 and 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 elemen 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 i status of quality element anticipated a 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 a 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 a 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 elemen 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 be	ed			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.	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

Birkin Brook - Mobberley Brook to River Bolli Water body type:	n (including Rostherne Brook) (GB112069061370) River	W	/atercourse (receptor value):		Blackburn's Brook (Moderate)	Birkin Brook (High)		Detailed Imp	act Assessment				Tributary of Birkin Brook 1 (M	/iddle House Brook) (Moderate)						
Hydromorphological designation:	Not A/HMWB	Sch	neme component (Unique ID):		Blackburn's Brook Viaduct (GB112069061370-MW-01-VD-01)	Blackburn's Brook Viaduct (GB112069061370-MW-02-VD-02)	Tributary of Birkir	Brook 1 Offline East Culvert (GB112	0691370-T-04-CV-03)	Mid Cheshire L	ine Offline South Culvert (GB1120690	061370-T-04-CV-04_	Ashley Railhead O	Offline Temporary Culvert South (GB11	2069061370-T-04-05)	Tributary of Birkin Brook 1 Overflo	ow Channel (GB112069061370-T-04-RE-)2a)	Mobberley	Road Offline Culvert (GB112069061370	-T-04-CV-07)
Overall Status (2015):	Bad	Desc	cription of scheme componen	t:	An approx 384.0m long concrete box girder viaduct, up to 10.4m max. height, comprising 1 x 32.5m spans, 1 x 32.0m spans, 7 x 40.0m spans and 1x 39.5m	An approx 384.0m long concrete box girder viaduct, up to 10.4m max. height, comprising 1 x 32.5m spans, 1 x 32.0m spans, 7 x 40.0m spans and 1x 39.5m	Currently indicated as a culvert to prov	ide access to Lower House Farm field. Ma approx 34m	ıy be replaced by an overbridge. Length	Permanent structure following remova	al of Ashley Railhead Culvert (construction) Cheshire railine = 26.5m	to convey flood flows - length under Mid	Temporary culvert: approx length = 10	65m to be replaced by an open channel afte	er decommission of the Ashley Railhead	Overflow channel for flood flow. Includ overflow	les an overspill weir to pass water into the w channel.	Culvert carrying j	lood overflow channel under Mobberley Ro	ad length = 45m
Overall Status Objective: Overall Status (2019): WFD Status Element	Moderate by 2027 Bad WFD Quality Element	Impac RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	ent: Status 2019	span Shading	span Shading	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	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	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream
	Fish	Bad	Good 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.	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 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. Additiona 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 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	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.	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 deterioratior 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. Additiona 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 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	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.	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 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. Additiona 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 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.
	Dissolved oxygen	Poor	Good by 2027	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. Additiona 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 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. Additiona mitigation not required.	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 mitigation. 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 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.	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 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.
	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 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 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. Additiona mitigation not required.	Element is insensitive to impact. No measurable change to quality l 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 al 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.	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.
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.	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. 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.	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.	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.
	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 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.	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 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.	Element is insensitive to impact. No measurable change to quality element.
	River depth and width variation			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 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.	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 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 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.
	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 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.	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 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 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.
	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 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.	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.
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.	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 to River Bollin (including Rostherne Brook) (GB112069061370) detailed impact assessment - effects on current status

Table A.12: Birkin Brook - Mobberley Brool Birkin Brook - Mobberley Brook to River Bollin Water body type:	k to River Bollin (including Rostherne Brook (including Rostherne Brook) (GB112069061370	() (GB112069061370) de))	9061370) detailed impact assessment - effects on current status Watercourse (receptor value): Scheme component (Unique ID): Tributary of Birkin Brook 1 Of																
Hydromorphological designation:	Not A/HMWB	9	Scheme component (Uniqu	e ID):	Tributary of Birkin	Brook 1 Offline West Culvert (GB1120	069061370-T-04-CV-07)	Real (GB11206900 (required due	lignment 61370-T-06-RE-03) to Ashley Bailhoad)	Mobberley Road Offline Overbridge (GB112069061370-T-06-OB-02)	Extension	n of existing culvert (GB112069061370)-T-06-CVX-03)	Ashley Road	d Offline East Culvert (GB1120690613	70-T-06-CVH-04)	Mid Cheshire	Line Offline North Culvert (GB1120690	J61370-T-04-CV-08)
Overall Status (2015):	Bad	D	escription of scheme comp	onent:		Length = 7.5m		Approx. length of realignment 680m Ashley Railhead be	- permanent realignment proposed due to eing in place for c.5years	Bridge over realigned channel	Tributary crosses track at location of	f existing culvert. No additional culvert sho existing culvert	wn in gigi, so assumed to be extension of	Ashl	ey Road Offline East Culvert approx. 22m i	in length		Length approx 21m to replace existing culv	
Overall Status Objective: Overall Status (2019): WFD Status Element	Moderate by 2027 Bad WFD Quality Element	RBMP Cycle 2 2015	RBMP Cycle 2 Status	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 downstrean	Shading	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstrean	Footprint	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
	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.	Localised beneficial effect anticipated However, no increase in quality element status anticipated at the water body scale.	ed. 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.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratio 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 deterioratio 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 ir quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratio in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded m mitigation. However, no deterioratior 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.
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 deterioratior 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.	ed. 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 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 deterioratio 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 deterioratio 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 ir quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratio in status of quality element anticipated at the water body scale. Additional mitigation not required.	Localised adverse effect anticipated when balanced against embedded n mitigation. However, no deterioratior 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	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.	ed. 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.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratio 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 deterioratio 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 ir quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratio 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.
	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 measurable change ir quality element anticipated. Additiona mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in al quality element anticipated. Additional mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change ir quality element anticipated. Addition mitigation not required.	Negligible effect anticipated when balanced against embedded in mitigation. No measurable change in nal quality element anticipated. Additiona mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in Il 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 i quality element anticipated. Additior mitigation not required.	Negligible effect anticipated when balanced against embedded n 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. Addition mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change ir 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. Additiona mitigation not required.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in al quality element anticipated. Additiona 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.	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.
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.	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. Addition mitigation not required.	Element is insensitive to impact. No measurable change to quality nal 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.
	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.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change ir quality element anticipated. Addition mitigation not required.	Element is insensitive to impact. No measurable change to quality nal 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.
	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 ir quality element anticipated. Additiona mitigation not required.	Element is insensitive to impact. No measurable change to quality al element.	Element is insensitive to impact. No measurable change to quality element.	o 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.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change i quality element anticipated. Additior mitigation not required.	Element is insensitive to impact. No n measurable change to quality al element.	Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change ir quality element anticipated. Addition mitigation not required.	Element is insensitive to impact. No measurable change to quality al element.	Impacts on element screened out al 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 al 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 al preliminary assessment stage.	It 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 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.
	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. Additiona 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.	n Impacts on element screened out a 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 ir quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratio in status of quality element anticipated at the water body scale. Additional mitigation not required.	n 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.
	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.	Element is insensitive to impact. No measurable change to quality element.	DELEE ELEMENT IS INSENSITIVE TO IMPACT. NO MEASURABLE CHANGE TO QUALITY ELEMENT.	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 Impacts on element screened out a preliminary assessment stage.	t 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 deterioratio in status of quality element anticipated at the water body scale. Additional mitigation not required.	n 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	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.	ed. 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.	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 Impacts on element screened out a 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.	n 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 deterioratio in status of quality element anticipated at the water body scale. Additional mitigation not required.	n 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.	ed. 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.	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 Impacts on element screened out a 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.	n Impacts on element screened out at preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change ir quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratio in status of quality element anticipated at the water body scale. Additional mitigation not required.	n 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.
	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.	ed. 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.	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 Impacts on element screened out a 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 al preliminary assessment stage.	Negligible effect anticipated when balanced against embedded mitigation. No measurable change ir quality element anticipated. Additiona mitigation not required.	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioratio in status of quality element anticipated at the water body scale. Additional mitigation not required.	n 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.
	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.	Element is insensitive to impact. No measurable change to quality element.	D Element is insensitive to impact. No measurable change to quality element.	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 Impacts on element screened out a preliminary assessment stage.	t 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 deterioratio in status of quality element anticipated at the water body scale. Additional mitigation not required.	n 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 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.

Birkin Brook - Mobberley Brook to River Bollin (i Water body type:	ncluding Rostherne Brook) (GB112069061370) River	w	atercourse (receptor value):							Detailed Impact Assessment Outcome		
Hydromorphological designation:	Not A/HMWB	Sch	neme component (Unique ID):	:	Ashley Railhead Of	fline Temporary Culvert North (GB1120	69061370-T-04-CV-09)	-				
Overall Status (2015):	Bad	Desc	cription of scheme componen	ıt:	Temporary culvert for construction railh	ead. 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	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): WFD Status Element	Moderate by 2027 Bad WFD Quality Element	Impac RBMP Cycle 2 2015 Status	t type from scheme compone RBMP Cycle 2 Status Objective	ent: Status 2019	Footprint	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	water bodies				
	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. 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	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 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	Poor	Good by 2027	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	Moderate by 2015	Good	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 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	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	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.	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	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				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
	Connection to groundwater bodies	_			Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration ir 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
Hudromornhologigal	River continuity	Supports Cood	Supports Good by 2015	Supports Cood	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration ir 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 depth and width variation	- Supports Good	Supports Good by 2015	Supports Good	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration ir 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 ir 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
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

Table A.12: Birkin Brook - Mobberley Brook to River Bollin (including Rostherne Brook) (GB112069061370) detailed impact assessment - effects on current status

Table A.13: Rostherne Mere (GB31232650) detailed impact assessment - effects on current status

Rostherne Mere (GB31232650)							Detailed Imp	act Assessment					Detailed Impact Assessment Outcome		
Water body type:	Lake		Wat	tercourse (receptor value)):		Rostherne M	ere (Very high)	1						
Hydromorphological designation:	Not A/HMWB		Schen	ne component (Unique ID)): Millington Cutting (GB31232)	650-LAKE-01-CU-01) including:	Rostherne Cutting (GB31232	2650-LAKE-01-CU-02) including:	Hoo Green North Cutting (GB31)	232650-LAKE-01-CU-03) including:	Cumulative effects - effects on				WED compliance outcome - notential
Overall Status (2015): Overall Status Objective:	Moderate by 2027		Impact type	from scheme component	t:						quality element from scheme	Overall effect on quality element at	Additional mitigation requirements	idual effect on quality element at	for deterioration of current status of
Overall Status (2019):	Bad			· · ·	Changes in lake hydrological regime / Changes to water body	Changes in water quality due to discharge of groundwater to surface	Changes in lake hydrological regime	Changes in water quality due to discharge of groundwater to surface	Changes in lake hydrological regime	Changes in water quality due to discharge of groundwater to surface	component(s) located in other WFD water bodies	water body scale		water body scale	quality element at water body scale
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015	RBMP Cycle 2 Status	Status 2019	hydromorphology	water	hydromorphology	water	hydromorphology	water	Water Sources				
	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 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.	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 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.	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 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.	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 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.	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	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 change in quality element anticipated. Additional mitigation not required.	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 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 change in quality element anticipated. Additional mitigation not required.	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 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
	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 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
	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 change in quality element anticipated. Additional mitigation not required.	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 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 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 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	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 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 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
	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 change in quality element anticipated. Additional mitigation not required.	N/A	N/A	Compliant - no deterioration in quality element status anticipated
Chamical		C 1		F - :1	Impacts on element screened out at		Impacts on element screened out at	N1/A	N17A	Compliant - no deterioration in quality					
Chemical	Priority substances	G000	Good by 2015	Fall	preliminary assessment stage.	None	preliminary assessment stage.	N/A	N/A	element status anticipated					

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

Sugar Brook (GB112069061350)	_									Detailed Impact Assessment Outcom	•	
Water body type:	River		Wat	tercourse (receptor value)	•	Tributary of Sugar Brook (Moderate)						
Hydromorphological designation:	Not A/HMWB		Schem	ne component (Unique ID)	Extension	n of existing culvert (GB112069061350-T-(02-CVX-01)					
Overall Status (2015):	Moderate		Descripti	ion of scheme component	Tributary crosses	Ashley Railhead footprint adjacent to existi	ing railway culvert.	Cumulative effects - effects on				WFD compliance outcome - potential
Overall Status Objective:	Good by 2027		Impact type	from scheme component			Changes to water body	quality element from scheme	Overall effect on quality element at	Additional mitigation requirements	Residual effect on quality element at	for deterioration of current status of
Overall Status (2019):	Moderate				- Footprint	Shading	hydromorphology leading to changes	component(s) located in other WFD	water body scale		water body scale	quality element at water body scale
WED Status Element	WED Quality Element	RBMP Cycle 2 2015	RBMP Cycle 2 Status	Status 2019	rootprint	Shaung	in river processes and habitats	water boules				
Wid Status Element	Wib Quality Element	Status	Objective	Status 2015			upstream and downstream					
									Localised adverse effect anticipated			
					Localised adverse effect anticipated	Localised adverse effect anticipated	Negligible effect anticipated when		when scheme component effects			
					when balanced against embedded	when balanced against embedded	balanced against embedded mitigation.		considered in combination. However			Compliant no deterioration in quality
	Fish	N/A	N/A	N/A	mitigation. However, no deterioration	mitigation. However, no deterioration	No measurable change in quality	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality
					at the water body scale. Additional	at the water body scale. Additional	element anticipated. Additional		element anticipated at water body			element status anticipated
					mitigation not required	mitigation not required	mitigation not required.		scale. Additional mitigation not			
									required.			
					Localised adverse effect anticipated	Localised adverse effect anticipated	Negligible effect anticipated when		Localised adverse effect anticipated			
					when balanced against embedded	when balanced against embedded	balanced against embedded mitigation		considered in combination. However			
Biological	Macroinvertebrates	Good	Good by 2015	High	mitigation. However, no deterioration	mitigation. However, no deterioration	No measurable change in quality	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality
	Macromvertebrates	0000	2000 Sy 2015		in status of quality element anticipated	in status of quality element anticipated	element anticipated. Additional	None	element anticipated at water body			element status anticipated
					at the water body scale. Additional	at the water body scale. Additional	mitigation not required.		scale. Additional mitigation not			
					mitigation not required.	mitigation not required.			required.			
					Localized advarge offect anticipated	Localized advarge offect apticipated			Localised adverse effect anticipated			
					Localised adverse effect anticipated	when balanced against embedded	Negligible effect anticipated when		when scheme component effects			
	Macrophytes and Phytobenthos -				mitigation However no deterioration	mitigation However no deterioration	balanced against embedded mitigation.		considered in combination. However			Compliant - no deterioration in quality
	combined	Moderate	Good by 2027	Moderate	in status of quality element anticipated	in status of quality element anticipated	No measurable change in quality	None	no deterioration in status of quality	N/A	N/A	element status anticipated
					at the water body scale. Additional	at the water body scale. Additional	element anticipated. Additional		element anticipated at water body			
					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 when	n		
					Impacts on element screened out at	balanced against embedded mitigation.	balanced against embedded mitigation.		scheme component effects considered	L		Compliant - no deterioration in quality
	Dissolved oxygen	High	Good by 2015	High	preliminary assessment stage	No measurable change in quality	No measurable change in quality	None	in combination. No measurable change	e N/A	N/A	element status anticipated
					preminary assessment stage.	element anticipated. Additional	element anticipated. Additional		in quality element anticipated.			
						mitigation not required.	mitigation not required.		Additional mitigation not required.			
					Imposts on element sevened out at							Compliant, no deterioration in quality
	рН	High	Good by 2015	High	proliminany assossment stage	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
					preiminary assessment stage.		measurable change to quality element.					
					Impacts on element screened out at	Element is insensitive to impact. No	Element is insensitive to impact. No		Element is insensitive to impact. No			Compliant - no deterioration in quality
Physicochemical	Phosphate	Moderate	Good by 2027	Moderate	preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.	None	measurable change to quality element	N/A	N/A	element status anticipated
	Ammonia	High	Good by 2015	High	Impacts on element screened out at	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
	Ammonia	півіі	G000 by 2015	rigii	preliminary assessment stage.	measurable change to quality element.	measurable change to quality element.	None	measurable change to quality element		N/A	element status anticipated
						Negligible effect anticipated when			Negligible effect anticipated when when	n		
					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
	Temperature	High	Good by2015	High	preliminary assessment stage.	No measurable change in quality	measurable change to quality element.	None	in combination. No measurable change	e N/A	N/A	element status anticipated
						element anticipated. Additional			in quality element anticipated.			
						mitigation not required.			Additional mitigation not required.			
Specific Pollutants	Conner 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
specific Politicants					preliminary assessment stage.	preliminary assessment stage.	preliminary assessment stage.	None	preliminary assessment stage.	10/2		element status anticipated
					Localised adverse effect anticipated				Localised adverse effect anticipated			
					when balanced against embedded		Negligible effect anticipated when		when scheme component effects			
	Quantity and dynamics of water				mitigation. However, no deterioration	Impacts on element screened out at	balanced against embedded mitigation.		considered in combination. However			Compliant - no deterioration in quality
	flow				in status of quality element anticipated	preliminary assessment stage.	No measurable change in quality	None	no deterioration in status of quality	N/A	N/A	element status anticipated
					at the water body scale. Additional		mitigation not required		scale Additional mitigation not			
					mitigation not required.		mitigation not required.		required			
									Localised adverse effect anticipated			
					Localised adverse effect anticipated				when scheme component effects			
					when balanced against embedded				considered in combination. However			
	Connection to groundwater				mitigation. However, no deterioration	Impacts on element screened out at	Element is insensitive to impact. No	None	no deterioration in status of quality	N/A	N/A	Compliant - no deterioration in quality
	bodies				In status of quality element anticipated	preliminary assessment stage.	measurable change to quality element.		element anticipated at water body			element status anticipated
					mitigation not required				scale. Additional mitigation not			
									required.			
					Localised adverse effect anticipated				Localised adverse effect anticipated			
					when balanced against embedded		Negligible effect anticipated when		when scheme component effects			
	Pivor continuity				mitigation. However, no deterioration	Impacts on element screened out at	balanced against embedded mitigation.	None	considered in combination. However	N//A	N/A	Compliant - no deterioration in quality
	River continuity				in status of quality element anticipated	preliminary assessment stage.	element anticipated Additional	None	alement anticipated at water body	N/A	N/A	element status anticipated
					at the water body scale. Additional		mitigation not required		scale Additional mitigation not			
					mitigation not required.		mitgation not required.		required			
Hydromorphological		Supports Good	Supports Good by 2015	Supports Good					Localised adverse effect anticipated			
					Localised adverse effect anticipated		Negligible effect anticipated when		when scheme component effects			
					when balanced against embedded	Impacts on element series and out at	balanced against embedded mitigation.		considered in combination. However			Compliant no deterioration in quality
	River depth and width variation				in status of quality element antisipated	proliminant accessment stage	No measurable change in quality	None	no deterioration in status of quality	N/A	N/A	compliant - no deterioration in quality
					at the water body scale. Additional	premininary assessment stage.	element anticipated. Additional		element anticipated at water body			element status anticipateu
					mitigation not required.		mitigation not required.		scale. Additional mitigation not			
									required.			
					Localised adverse effect anticipated		Norlichtenford		Localised adverse effect anticipated			
					when balanced against embedded		helenced against ombodded mitigation		considered in combination. However			
	Structure and substrate of the				mitigation. However, no deterioration	Impacts on element screened out at	No measurable change in quality	Nono	no deterioration in status of quality	NI/A	NI/A	Compliant - no deterioration in quality
	river bed				in status of quality element anticipated	preliminary assessment stage.	element anticipated. Additional	NOTE	element anticipated at water body			element status anticipated
					at the water body scale. Additional		mitigation not required		scale. Additional mitigation not			
					mitigation not required.				required.			
		1			Localized advance offers with the				Localised adverse effect anticipated			
					Localised adverse effect anticipated				when scheme component effects			
					mitigation. However, no deterioration	Impacts on element screened out at	Element is insensitive to impact. No		considered in combination. However			Compliant - no deterioration in quality
	Structure of the riparian zone				in status of quality element anticipated	preliminary assessment stage	measurable change to quality element	None	no deterioration in status of quality	N/A	N/A	element status anticinated
					at the water body scale. Additional				element anticipated at water body			
					mitigation not required.				scale. Additional mitigation not			
					Impacts on element screened out at	Impacts on element screened out at	Impacts on element screeped out at		Impacts on element screened out at			Compliant - no deterioration in quality
Chemical	Priority substances	Good	Good by 2015	Fail	preliminary assessment stage	preliminary assessment stage	preliminary assessment stage	None	preliminary assessment stage	N/A	N/A	element status anticipated
L	1	1	1	1	prominary assessment stage.				promining assessment stage.		1	

Table A.15: Bollin (River Dean to Ashley Mill) (GB112069061381) detailed impact assessment - effects on current status Bollin (River Dean to Ashley Mill) (GB112069061381)

Bollin (River Dean to Ashley Mill) (GB112069061 Water body type:	River		Water	course (receptor value):	Detailed Impact Assessment	River Bollin (Very High)				Tributary of	River Bollin 2			Tributary of	River Bollin 3
Hydromorphological designation:	Not A/HMWB		Scheme	component (Unique ID):	River Bollin Offline Bridge Widening	Highway Drainage Outfalls M56 (GB112069061381-MW-01-HD-01)	River Bollin East Viaduct (GB112069061381-MW-01-VD-01)	Tributary of River Bollin 2 Realign	ment (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		Description	of scheme component:	River Bollin Offline Bridge Widening North River Bollin Offline Bridge Widening South	Road drainage outfalls from M56. Three drainage outfalls from M56 junction changes fail HEWRAT assessment, but passed further metal bioavailability assessment resulting in minor localised	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.	Approx 64	4m 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): WFD Status Element	Moderate by 2015 Moderate WFD Quality Element	RBMP Cycle 2 2015 Status	Impact type fro RBMP Cycle 2 Status Objective	om scheme component: Status 2019	Shading	Drainage (changes in water quantity or quality due to discharge of surface water runoff to surface water body);	Shading	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	Changes in flow velocity and volume / 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	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.	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.
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 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	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.	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.	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	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.	balanced against embedded mitigation. No measurable change in quality element anticipated. Additional	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.	balanced against embedded mitigation. No measurable change in quality element anticipated. Additional	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 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 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.
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.	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.	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.	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.	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.	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.	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.	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.	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 M Bollin (River Dean to Ashley Mill) (GB11206906	/ill) (GB112069061381) detailed impact assess 1381)	sment - effects on curre	ent status										
Water body type: Hydromorphological designation:	River Not A/HMWB		Water	rcourse (receptor value) component (Unique ID)	: Tributary of River Bo	llin 3 M56 Drain Offline Culvert (GB112	2069061381-T-03-CV-02)	Tributary of River	r Bollin 3 M56 Offline Culvert (GB11206	9061381-T-03-CV-03)	M56 East Tunnel (GB112069061381-T-	Tributary of Tributary of River Bollin 5 Realigr	River Bollin 5 ment (GB112069061381-T-03-RE-04)
Overall Status (2015):	Moderate		Description	n of scheme component	:	Approx length = 8m			approx length = 298m		03-BT-01) 133m long box structure	Approx 2	05m length
Overall Status Objective: Overall Status (2019):	Moderate by 2015 Moderate		Impact type fr	rom scheme component	:						Up to a maximum depth of 11m Changes in flow velocity and volume		
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019	Footprint	Shading	Changes to water body hydromorphology leading to change in river processes and habitats upstream and downstream	s Footprint	Shading	Changes to water body hydromorphology leading to change 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	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. 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. 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.
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. 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. 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. Additiona 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. 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. 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. Additiona 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. Additiona mitigation not required.	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.	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 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.	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. Additiona 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	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. 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. Additiona 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
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.	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. 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. 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.	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				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.	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 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	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. Additiona 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.	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. 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. Additiona 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. 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. Additiona 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. Additiona 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	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.

Bollin (River Dean to Ashley Mill) (GB11206 Water body type:	9061381) River	nent - enects on currer	Wat	tercourse (receptor value)	•		Tributary of	f River Bollin 6			Detailed Imp	act Assessment Out
Hydromorphological designation:	Not A/HMWB		Schem	ne component (Unique ID)	: Tributary of Riv	ver Bollin 6 Offline Culvert (GB11206900	61381-T-05-CV-06)	Tributary of River Bollin 6 Realigr	nment (GB112069061381-T-05-RE-05)	Thorns Green Cutting (GB112069061381-T-05-CU-01)	1	
Overall Status (2015):	Moderate		Descripti	ion of scheme component	:	Approx length = 75m		Appro	ox 22m	1km in length, with a maximum cutting depth of 11m and width of 76m.	Cumulative effects - effects on	
Overall Status Objective: Overall Status (2019):	Moderate by 2015 Moderate		Impact type	from scheme component	:		Changes to we too he do		Changes to we to the du	Changes in flow velocity and volume	quality element from scheme component(s) located in other WFD water bodies	Overall effect o
WFD Status Element	WFD Quality Element	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	s Footprint	changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	⁵ / 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 ir 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 adv scheme comp combination. The deterioration in th at a water body so additional mit
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 ir 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 adv scheme comp combination. The deterioration in th at a water body so additional mit
	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 ir 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 ir 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 adv scheme comp combination. The deterioration in th at a water body so additional mit
	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 adve scheme comp combination. How of quality eleme scale. Addition
	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 insensi change
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 insensi change
	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.	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 insensi change
	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 component effect No measurable anticipated. Addit
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 adve scheme comp combination. How of quality eleme scale. Addition
	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 adve scheme comp combination. How of quality eleme scale. Additior
	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.	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.	None	Localised adve scheme comp combination. How of quality eleme scale. Additior
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 adv scheme comp combination. The deterioration in th at a water body so additional mit
	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 adv scheme comp combination. The deterioration in th at a water body so additional mit
	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.	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 adve scheme comp combination. How of quality eleme scale. Addition
	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.	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	Widespread adv scheme comp combination. The deterioration in th at a water body so additional mit
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 eleme ass

t on quality element at water body scale

verse effect anticipated when onent effects considered in ere is a risk that there could be the status of the quality element cale. Requires consideration of igation and residual effect.

verse effect anticipated when oonent effects considered in ere is a risk that there could be ne status of the quality element scale. Requires consideration of tigation and residual effect.

verse effect anticipated when oonent effects considered in ere is a risk that there could be ne status of the quality element scale. Requires consideration of tigation and residual effect.

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erse effect anticipated when conent effects considered in wever no deterioration in status ent anticipated at water body onal mitigation not required.

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verse effect anticipated when oonent effects considered in ere is a risk that there could be ne status of the quality element scale. Requires consideration of tigation and residual effect.

ent screened out at preliminary sessment stage.

Bollin (River Dean to Ashley Mill) (GB1120690613 Water body type:	381) River		
Hydromorphological designation:			
Hydromorphological designation:			
Overall Status (2015): Overall Status Objective:	Moderate Moderate by 2015		
Overall Status (2019):	Moderate		
WFD Status Element	WFD Quality Element	RBMP Cycle 2 2015 Status	RBMF
	Fish	Moderate	G
Biological	Macroinvertebrates	N/A	
	Macrophytes and Phytobenthos - combined	N/A	
	Dissolved oxygen	High	G
Physicochemical	рН	High	G
	Phosphate	Poor	Мо
	Ammonia	Poor	G
	Temperature	High	G
Specific Pollutants	Copper, Triclosan, Zinc	N/A	
	Quantity and dynamics of water flow		
	Connection to groundwater bodies		
Hydromorphological	River continuity	Supports Good	Suppo
	River depth and width variation		
	Structure and substrate of the river bed		
	Structure of the riparian zone		
Chemical	Priority substances	Good	G

	Wat	ercourse (receptor value):			
	Schem	e component (Unique ID):			
	Descripti	on of scheme component:			WED compliance outcome - notential
	Impact type	from scheme component:	Additional mitigation requirements	Residual effect on quality element at water body scale	for deterioration of current status of
e 2 2015 Status	RBMP Cycle 2 Status Objective	Status 2019			quanty element at water body scale
oderate	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
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/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
High	Good by 2015	High	N/A	N/A	Compliant - no deterioration in quality element status anticipated
High	Good by 2015	High	N/A	N/A	Compliant - no deterioration in quality
Poor	Moderate by 2027	Poor	N/A	N/A	Compliant - no deterioration in quality
Poor	Good by 2027	Moderate	N/A	N/A	Compliant - no deterioration in quality
High	Good by 2015	High	N/A	N/A	Compliant - no deterioration in quality
N/A	N/A	N/A	N/A	N/A	Compliant - no deterioration in quality
					element status anticipated
			N/A	N/A	Compliant - no deterioration in quality element status anticipated
			N/A	N/A	Compliant - no deterioration in quality element status anticipated
orts 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
			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
			N/A	N/A	Compliant - no deterioration in quality element status anticipated
			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
Good	Good by 2015	Fail	N/A	N/A	Compliant - no deterioration in quality
		I			

Water body type:	River		Natercourse (receptor value)):				Tributary of Timperlo	ey Brook 1 (Moderate)		Detailed Impact Assessm											
Hydromorphological designation:	НМШВ	So	cheme component (Unique II):	Offlir	ne Culvert North (GB112069061260-T-01-	CV-01)	Offlin	e Culvert South (GB112069061260-T-01	-CV-02)	Realignment 1 (GB112069061260-T-01-RE-01)											
Overall Status (2015):	Moderate	De	scription of scheme compone	ent:		Approx length = 82m			Approx length = 8m		Approx 128m length. WFD mitigation for airport station , includes daylig	r loss of open channel under Manchester hting /removing existing culvert										
Overall Status Objective:	Good by 2027	Impa	act type from scheme compo	nent:																		
Overall Status (2019): WFD Status Element	Moderate WFD Quality Element	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	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	5 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 ir 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 ir 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 ir 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.										
	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	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	Element is insensitive to impact. No	Element is insensitive to impact. No										
Physicochemical	Phosphate	Moderate	Good by 2027	Moderate	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.	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.	 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 ir 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				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration ir status of quality element anticipated at the water body scale. Additional mitigation not required.	n 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 ir status of quality element anticipated at the water body scale. Additional mitigation not required.	n 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	rer bed													Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration ir status of quality element anticipated at the water body scale. Additional mitigation not required.	n 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 ir status of quality element anticipated at the water body scale. Additional mitigation not required.	n 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	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	Impacts on element screened out at										

Water body type:	River		Watercourse (receptor valu	e):		Tributary of	e)			
Hydromorphological designation:	HMWB	S	Scheme 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	(GB112069061260-T-01-RE-03)
Overall Status (2015):	Moderate	De	escription 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.	Approx 122m length. Wi Manchester airport station	FD mitigation for loss of open channel under includes daylighting /removing existing culvert	Approx 91m length WFD mitiga	tion for loss of open channel under Manchester airport station
Overall Status Objective:	Good by 2027 Moderate	Imp	oact type from scheme comp	oonent:	_					
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 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.	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 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.	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 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.	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 beneficial effect anticipated. However, no increase in quality element status anticipated at the water body scale.
	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.	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 effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	PH 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 is insensitive to impact. No measurable change to quality element.	
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 is insensitive to impact. No measurable change to quality element.
	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.	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 is insensitive to impact. No measurable change to quality element.
	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.	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.
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 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.	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 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.	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.
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 effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
Hydromorphological	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 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				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 effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.
	Structure of the riparian zone	ian 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 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.

Timperley Brook (GB112069061260) Water body type:	River		Watercourse (receptor value):	:					Detailed Impact A Timperley Bro				
Hydromorphological designation:	HMWB		Scheme component (Unique ID)):	Brooks	Drive Offline Culvert (GB112069061260	0-MW-01-CV-03)	Realignment West (G	B112069061260-MW-01-RE-04)	B112069061260-MW-01-RE-05)	Field Access Culvert South (GB112069061260-MW		
Overall Status (2015):	Moderate	D	escription of scheme compone	nt:	Ap	oprox length = 20m replacing assumed exist	ing culvert	Approx 136m length. WFD mitigation for	r loss of open channel under Manchester airport station	rt Approx. 193m length. WFD mitigation for loss of open channel under Manchester airpo station		Approx length = 5m 2x Existing culverts to be moved to maintain	
Overall Status Objective:	Good by 2027	Imp	pact type from scheme compon	ent:									
Overall Status (2019): WFD Status Element	WFD Quality Element	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	Ch Shading lei
	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 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 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 mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.
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 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 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 mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.
	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 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 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 mitigation. However, no deterioration in status of quality element anticipated at the water body scale. Additional mitigation not required.
	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.	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.	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.
	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.	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.
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 water 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.
	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.	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 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.
	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.	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.
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.
	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.	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 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.	Ne Impacts on element screened out at preliminary assessment stage.
	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.	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.	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.
	River continuity				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.	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 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.
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 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 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 aga preliminary assessment stage.
	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.	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 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 aga preliminary assessment stage.
	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 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 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.
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.

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Impacts on element screened out at preliminary assessment stage.

Timperley Brook (GB112069061260) Water body type:	River		Watercourse (receptor value):	Detailed Impact Assessment Outcome Timperley Brook (Moderate)								
Hydromorphological designation:	НМШВ	s	Scheme component (Unique I):	Field	Access Culvert North (GB112069061260	-MW-01-CV-05)		Timperley Brook Inverted Sipho (GB112069061260-MW-01-IS-01)	n	Timperley (GB1120690	3rook Realignment 61260-MW-01-RE-01)	
Overall Status (2015):	Moderate	De	escription of scheme compon	ent:		Approx length = 5m 2x Existing culverts to be moved to maintai	in access	Timperley Brook Culvert would be const station. Siphon expected to	ructed as an inverted siphon under the stati b be approximately 170m in length, plus add	on, rejoining the existing watercourse west of the ditional realignment of up to 120m.	Timperley Brook realigned (approx leng mitigation for impact of inverted siphon.	th 330m) downstream of Brooks Drive as offsite This will also provide a flood compensation area.	
Overall Status Objective:	Good by 2027	Imp	act type from scheme compo	nent:	_								
Overall Status (2019): WFD Status Element	WFD Quality Element	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	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.	Widespread adverse effect anticipated despite embedded mitigation. There is a risk that there could be deterioration in the status of the quality element at the water body scale. Requires consideration of additional mitigation and residual effect.	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.	Widespread adverse effect anticipated despite embedded mitigation. There is a risk that there could be deterioration in the status of the quality element at the water body scale. Requires consideration of additional mitigation and residual effect.	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.	Widespread adverse effect anticipated despite embedded mitigation. There is a risk that there could be deterioration in the status of the quality element at the water body scale. Requires consideration of additional mitigation and residual effect.	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.	
	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.	
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.	Widespread adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could be deterioration ir the status of the quality element at a water body scale. Requires consideration of additional mitigation and residual effect.	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.	
	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.	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	Impacts on element screened out at	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.	

Water bedy types						
Water body type: River Hydromorphological designation: HMWB Scheme component (Unique ID):	Manchester Airport High Speed Station Cutting Retaining Wall (GB112069061260-MW-01-CU-01) (GB112069061260-MW-	and West Link ester Aiport High Realignment 01-HD-01)				
Overall Status (2015): Moderate Description of scheme component:	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 MerciaRoad drainage outfall from M56 is Realignment/ Access to Manchester Station/ Runger Lane Realignment: siphon. Fails HEWRAT assessment, but bioavailability assessment resulting effects.Manchester Airport High Speed cutting retaining wall north is 1.8km in length, all of which will be below ground level.Bood drainage outfall from M56 is Realignment/ Access to Manchester Station/ Runger Lane Realignment: siphon. Fails HEWRAT assessment, but bioavailability assessment resulting effects.	Tast and West Link Aiport High Speed Drains to timperley passed further metal g in minor localised Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	n • 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: Good by 2027 Impact type from scheme component:						
Overall Status (2019): Moderate WFD Status Element WFD Quality Element RBMP Cycle 2 2015 Status RBMP Cycle 2 Status Objective Status	Changes in flow velocity and volume / Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream body);	ity or quality due to ff to surface water				
Fish N/A N/A 1	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 against embedded mitigation. How in status of quality element anticipated scale. Additional mitigation	ed when balanced ever, no deterioration ted at the water body not required.	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 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.	ed when balanced ever, no deterioration ted at the water body not required.	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 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.	ed when balanced ever, no deterioration ted at the water body not required.	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 N/A	Compliant - no deterioration in quality element status anticipated
Dissolved oxygen Good by 2015 G	Negligible effect anticipated when balanced against embedded mitigation. No measurable change in quality element anticipated. Additional mitigation not required.	ed when balanced ever, no deterioration ted at the water body not required.	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.	r N/A	N/A	Compliant - no deterioration in quality element status anticipated
pH High Good by 2015 H	Element is insensitive to impact. No measurable change to guality element.	nt.	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 guality element.	nt. 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 Mod	Element is insensitive to impact. No measurable change to quality element. Element is insensitive to impact. No to quality element.	nt. 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 H	Element is insensitive to impact. No measurable change to quality element.	neasurable change nt.	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 H	Impacts on element screened out at preliminary assessment stage. Localised adverse effect anticipation. How in status of quality element anticipation scale. Additional mitigation	ed when balanced ever, no deterioration ted at the water body not required.	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 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.	ut at preliminary e.	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.	r 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.	ut at preliminary e.	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.	r N/A	N/A	Compliant - no deterioration in quality element status anticipated
River continuity	Element is insensitive to impact. No measurable change to quality element. Impacts on element screened of assessment stag	ut at preliminary e.	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 N/A	Compliant - no deterioration in quality element status anticipated
River depth and width variation Supports Good 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.	ut at preliminary e.	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.	r 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 Impacts on element screened of quality element. assessment stage	ut at preliminary e.	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.	r 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 Impacts on element screened of quality element. assessment stage	ut at preliminary e.	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.	r N/A	N/A	Compliant - no deterioration in quality element status anticipated
Chemical Priority substances Good Good by 2015	Impacts on element screened out at preliminary assessment Impacts on element screened of assessment stage.	ut at preliminary e.	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 (Fair Sinderland Brook (Fairwell Brook an	ywell Brook and Baguley Brook) (GB11206 d Baguley Brook) (GB112069061270)	9061270) detailed impa	ct assessment - effects o	n current status	S						
Water body type:	River		Wate	ercourse (receptor value)	Baguley Brook (Moderate)	Mill Brook (Moderate)					
Hydromorphological designation:	HMWB		Scheme	e component (Unique ID)	Manchester Tunnel GB112069061270- MW-03-BT-01 Altrincham Road Vent Shaft	Manchester Tunnel GB112069061270-T 02-BT-01	-				
Overall Status (2015):	Moderate		Descriptio	on of scheme component	Consists of twin bored tunnels 12.0km mlength, 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 max. 43.0m deep. There are 37 cross max. 43.0m deep. There are 37 cross passages.Consists of twin bored tunnels 12.8km in length, 7.55m internal diameter, and max. 43.0m deep. There are 37 cross passages.CuAltrincham Road Vent Shaft has a 24.0m internal diameter and is up to 48.6mbglpassages.comp		Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	Overall effect on quality element a water body scale	t Additional mitigation requirements	Residual effect on quality element a water body scale	at WFD compliance outcome - potential for deterioration of current status of quality element at water body scale
Overall Status Objective:	Good by 2027		Impact type f	rom scheme component	<u> </u>	Impacts from bored tunnel are					
Overall Status (2019): WFD Status Element	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					
	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 n deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	o N/A	N/A	Compliant - no deterioration in quality element status anticipated
Biological	Macroinvertebrates	N/A	N/A	Poor	Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration ir 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 n deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	o 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 ir status of quality element anticipated at the water body scale. Additional mitigation not required.	n Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However n deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	o 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 chang in quality element anticipated. Additional mitigation not required.	d e N/A	N/A	Compliant - no deterioration in quality element status anticipated
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
i nysicochemical	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
	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
	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	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
	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.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However n deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	o 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 ir status of quality element anticipated at the water body scale. Additional mitigation not required.	n Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However n deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	o 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
	River depth and width variation				Localised adverse effect anticipated when balanced against embedded mitigation. However, no deterioration ir status of quality element anticipated at the water body scale. Additional mitigation not required.	n Impacts on element screened out at preliminary assessment stage.	N/A	Localised adverse effect anticipated when scheme component effects considered in combination. However n deterioration in status of quality element anticipated at water body scale. Additional mitigation not required.	o 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.	Impacts on element screened out at preliminary assessment stage.	N/A	Element is insensitive to impact. No measurable change to quality element	t. 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.	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.	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.18: Mersey (upstream of M	anchester Ship Canal) (GB112069061030)) detailed impact assess	sment - effects on curre	nt status				Detailed Impact Accordment Outcome					
Mersey (upstream of Manchester Ship (Water body type:	Canal) (GB112069061030) River		Wat	tercourse (receptor value): River Mersey (Very high)	Detailed Impact Assessment Tributary of River	Mersey 2 (Moderate)			Detailed Impact Assessment Outcome			
Hydromorphological designation:	НМШВ		Schen	ne component (Unique ID	Manchester Tunnel GB112069061030-	Manchester Tunnel GB1	112069061030-T-02-BT-01						
Overall Status (2015):	Moderate		Descript	ion of scheme componen	MW-01-BT-01 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 43.0m deep. There are 37 cross passages. internal diameter a	length, 7.55m internal diameter, and max. Palatine Road Vent Shaft is 41.5m by 51.0m and depth of 36.6mbgl	Cumulative effects - effects on quality element from scheme	Overall effect on quality element at		Residual effect on quality element at	WFD compliance outcome - potential	
Overall Status Objective:	Moderate by 2015		Impact type	from scheme componen	t:			component(s) located in other WFD	water body scale	Additional mitigation requirements	ts water body scale	for deterioration of current status quality element at water body sca	
Overall Status (2019): WFD Status Element	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	Changes in flow velocity and volume / Changes to water body hydromorphology leading to changes in river processes and habitats t upstream and downstream	Changes in water quality due to discharge of groundwater to surface water body	water bodies					
	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.	0 N/A 2.	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.	0 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.	0 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.	I 2 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 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.	0 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.	n 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.	0 N/A e.	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	
R	River continuity				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 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				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	
	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 (CB112060061410) detailed impact assessment offects on current status

Table A.19: Fallowfield Brook (GB11206906141	IU) détailed impact assessment - effects	s on current status											
Fallowfield Brook (GB112069061410)										Detailed Impact Assessment Outcome			
Water body type:	River		Wat	ercourse (receptor value):		Cringle Brook (Moderate)							
Hydromorphological designation:	HMWB		Schem	e component (Unique ID):	Ν	/lanchester Tunnel GB112069061410-MW-	01-BT-01	Cumulativo offocts offocts on					
Overall Status (2015):	Moderate		Description	on of scheme component:	Consists of twin bored tunnels 12.8k	m in length, 7.55m internal diameter, and ma	x. 43.0m deep. There are 37 cross passages.	quality alament from schome	Overall effect on quality element at		osidual offect on quality element	WFD compliance outcome - potential	
Overall Status Objective:	Good by 2027		Impact type	from scheme component:				component(s) located in other WED	water body scale	Additional mitigation requirements	water body scale	for deterioration of current status of	
Overall Status (2019):	Moderate				Impacts from bored tunnel ar	e scoped out of detailed impact assessm	ent at Preliminary Assessment stage,	water bodies	water bouy state		water bouy state	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 flagged as a risk in Groundwater WFD assessment			water boures					
	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	
	Ammonia	Good	Good by 2015	High	_			None	None	N/A	None	Compliant - no deterioration in quality	
	Temperature	High	Good by 2015	High	_		-	None	None	N/A	None	Compliant - no deterioration in quality	
Specific Pollutants	Copper, Triclosan, Zinc	High	High by 2015	High	_		-	None	None	N/A	None	Compliant - no deterioration in quality	
	Quantity and dynamics of water flow				_		_	None	None	N/A	None	Compliant - no deterioration in quality	
	Connection to groundwater bodies				_			None	None	N/A	None	Compliant - no deterioration in quality	
	River continuity				_		_	None	None	N/A	None	Compliant - no deterioration in quality	
Hydromorphological	River depth and width variation	– Supports Good	Supports Good by 2015	Supports Good	_			None	None	N/A	None	Compliant - no deterioration in quality	
	variation Structure and substrate of the				_			None	None	N/A	None	Compliant - no deterioration in quality	
	Structure of the riparian zone						_		-	None	None	N/A	None
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 Bro	ook) (GB112069061060)											Detailed Impact Assessment Outcom	е						
Water body type:	River		Wate	rcourse (receptor value):		Fallowfield Brook (Moderate)			Gore Brook (Moderate)										
Hydromorphological designation:	HMWB		Scheme	component (Unique ID):		Manchester Tunnel GB112069061060-MW-	01-BT-01	Mar	chester Tunnel GB112069061060-MW-03-BT-01	Cumulative effects - effects on									
Overall Status (2015):	Moderate		Descriptio	n of scheme component:	Consists of twin bored tunne	els 12.8km in length, 7.55m internal diameter, and ma	ax. 43.0m deep. There are 37 cross passages.	Consists of twin bored tunnels 12.8km ir	n length, 7.55m internal diameter, and max. 43.0m deep. There are 37 cross passage	S. auality element from scheme	Overall effect on quality element at		Residual effect on quality element a	+ WFD compliance outcome - potential					
Overall Status Objective:	Good by 2027		Impact type fi	rom scheme component:						component(s) located in other WFD	water body scale	Additional mitigation requirements	water body scale	for deterioration of current status of					
Overall Status (2019):	Moderate					Impacts from bored tunnel are scoped or	ut of detailed impact assessment at Prelin	ninary Assessment stage junless flagg	ed as a risk in Groundwater WFD assessment	water bodies	Water body start		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															
	Fish	N/A	N/A	N/A	-	_	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated					
Biological	Macroinvertebrates	Bad	Good by 2027	Bad	-	_	-	-	-	None	None	N/A	None	Compliant - no deterioration in quality element status anticipated					
	Macrophytes and Phytobenthos - combined	Good	Good by 2015	Good	-	-	-	-		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 Moderate Good by 2027	Poor	-	_	_	_		None	None	N/A	None	Compliant - no deterioration in quality element status anticipated						
	Ammonia		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	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 by 2015	Supports Good by 2015	Supports Good by 2015	Good Supports Good by 2015	ts 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					
	bed 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.20: Platt Brook (Source to Fallowfield Brook) (GB112069061060) detailed impact assessment - effects on current status

Medlock (Lumb Brook to Irwell) (GB1120	069061152)	assessment - effects on	current status				Detailed Impac	ct Assessment					Detailed Impact Assessment Outcom	e	
Water body type: Hydromorphological designation:	River HMWB		Wate	ercourse (receptor value) e component (Unique ID)	Piccadilly Approach Viaduct	Fairfield Street Offline Overbridge	River Medl	ock (High) Daylighting of existing culvert	: (GB112069061152-MW-01-DY-01)		_				
Overall Status (2015):	Moderate		Descriptio	on of scheme component	(GB112069061152-MW-01-VD-01) 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.	(GB112069061152-MW-01-OB-01) Offline overbridge (clear span bridge) for realigned Fairfield Street. Approx 30m in length and 16m wide.	Deculverting of approx. 100m of R	iver Medlock beneath the Piccadilly Approa	ch Viaduct, in conjunction with creating flood	d compensation areas adjacent to the	Cumulative effects - effects on quality element from scheme component(s) located in other WFD	Overall effect on quality element a water body scale	t Additional mitigation requirements	Residual effect on quality eleme water body scale	WFD compliance outcome - potentia for deterioration of current status o
Overall Status Objective: Overall Status (2019): WFD Status Element	Moderate by 2015 Moderate WFD Quality Element	RBMP Cycle 2 2015 Status	Impact type f RBMP Cycle 2 Status Objective	from scheme component Status 2019	: Shading	Shading	Changes to water body hydromorphology leading to changes in river processes and habitats upstream and downstream	Shading	Footprint	Creation of new habitats	water bodies				quality element at water body scale
	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.	d 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. 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.	Localised beneficial effect anticipated However, no increase in quality r 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 elemen anticipated. Additional mitigation no required.	NA 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.	d 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. 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.	Localised beneficial effect anticipated However, no increase in quality r element status anticipated at the wate body scale.	l. er	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality elemen anticipated. Additional mitigation no required.	NA 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.	d 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 mitigatior No measurable change in quality element anticipated. Additional mitigation not required.	n. 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.	Localised beneficial effect anticipated However, no increase in quality r 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 elemen anticipated. Additional mitigation no required.	NA t	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.	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 n. balanced against embedded mitigation No measurable change in quality element anticipated. Additional mitigation not required.	n. 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 considere in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	d ge 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	Element is insensitive to impact. No measurable change to quality elemen	t. preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality element	t. 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.	Element is insensitive to impact. No measurable change to quality element	Element is insensitive to impact. No measurable change to quality elemen	Impacts on element screened out at t. preliminary assessment stage.	Impacts on element screened out at preliminary assessment stage.	None	Element is insensitive to impact. No measurable change to quality elemen	t. 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	Element is insensitive to impact. No	Element is insensitive to impact. No	Impacts on element screened out at	Impacts on element screened out at	None	Element is insensitive to impact. No	t. NA	N/A	Compliant - no deterioration in quality
	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.	d 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.	n. 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 considere in combination. No measurable chang in quality element anticipated. Additional mitigation not required.	d ge NA	N/A	Compliant - no deterioration in quality element status anticipated
Specific Pollutants	Copper, Triclosan, Zinc	Hlgh	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.	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.	n. 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.	Localised beneficial effect anticipated However, no increase in quality r 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 elemen anticipated. Additional mitigation no required.	NA 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.	Element is insensitive to impact. No . measurable change to quality elemen	t. None	Element is insensitive to impact. No measurable change to quality element	t. 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 wate 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 water body scale.	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 elemen anticipated. Additional mitigation no required.	NA 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.	n. 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.	Localised beneficial effect anticipated However, no increase in quality r element status anticipated at the wate body scale.	n. None	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality elemen anticipated. Additional mitigation no required.	NA 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.	n. 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.	Localised beneficial effect anticipated However, no increase in quality r 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 elemen anticipated. Additional mitigation no required.	NA 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.	n. 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.	Localised beneficial effect anticipated However, no increase in quality r element status anticipated at the wate body scale.	l. Pr	Localised beneficial effect anticipated when scheme component effects considered in combination. No measurable change in quality elemen anticipated. Additional mitigation no required.	NA 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	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 preliminary assessment stage.	NA	N/A	Compliant - no deterioration in quality

Table A22: Weaver and Dane Weaver and Dane Quaternar (GB1202G991700) (Secondary	Quaternary Sand and y Sand and Gravel Aqu aquifer (undifferentia	d Gravel Aquifers (G quifers iated))	(GB1202G991700) detailed impact assessment - effects on Detailed Impact Assessment	current status Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Assessment	Detailed Impact Asses	sment Detailed Im Assessme	npact Detailed Impact ent Assessment	Detailed Impact Assess	sment Detailed Impact Assessment	ct Detailed Impact Assess	ment Detailed Impact De Assessment A	tailed Impact Issessment Detailed Imp	Detailed Dact Assessment Impact Assessmer GB41202G99	Detailed Impact It Assessment	Detailed Impact /	ssessment	Detailed Impact Assessment Det	tailed Impact Assessment	Detailed Impact Assessment	Detailed Impact I Assessment	Petailed Impact Detailed Imp Assessment Assessmen 41202G991700-OE- GB41202G99170	act Detailed Impact Detailed Im t Assessment Assessme	pact Detailed Impact nt Assessment
Catchment: North West	GW Scheme	ne component (ID): e component type:	: GB41202G991700-TP-01 : Tunnel Portal	GB41202G991700-BT-02 Bored Tunnel	GB41202G991700-VT-03 Vent shaft	GB41202G991700-VT-04 Vent shaft	GB41202G991700-TP-05 Tunnel Portal	GB41202G991700-CR-06 Cutting with retaining structure	GB41202G991700-C	-08 GB41202G9917C Overbridge Four	00-OF-09 GB41202G991700-VF-14 ndations Viaduct Foundations	GB41202G991700-RT-	F-15 VF-16 Viaduct Foundations	GB41202G991700-RT- Retaining Wall	18 19 Viaduct Foundations Viadu	VF-22 GB412020	ig91700-RT-26 00-VF-27 Ning Wall Foundation Warmingha	00-OF-30 Overbridge s Foundations m Footpath	GB41202G9917 Station/D	pot	OF-33 Overbridge Foundations	GB41202G991700-BP-34 Borrow Pit	GB41202G991700-BP-35 Borrow Pit	OF-36 Overbridge Foundations	37 38a and 38l Overbridge Highways Drain Foundations discharge Highways drain	GB41202G991700-VF-41 GB41202G99170 lage Viaduct Foundations Viaduct Foundations	00-VF-42 GB41202G991700-VF-43 ations Viaduct Foundations
(2015): Poor	Scheme c	component name:	Crewe Tunnel South porous portal	Crewe Tunnel	Cowley Way vent shaft	Middlewich Street vent shaft	Crewe Tunnel North porous portal	Crewe North portal (retained cutting	;) Coppenhall Moss cut	ting Footpath Crew overbridg	ve 29/1 ge Warmingham Moss southbound approach viaduct No.1	Warmingham Moss southbound No.1	d box structure Warmingham Mo southbound connecting viadu	OSS Warmingham Moss southbo structure No.2	bund box Warmingham Moss War southbound r approach viaduct app No.2	mingham Moss northbound Warmingham M proach viaduct sti No.1	oss northbound box ucture approach viaduct No.	Minshull d Vernon 8/1 accommodatio 2 n overbridge	Crewe North rolling st	ock depot (RSD)	A530 Nantwich Road overbridge	A02 Cohesive Borrow Pit A	MA02 Cohesive Borrow Pit B	Clive Green Lane S overbridge	hropshire Union Canal offline overbridge discharge fro realigned Clive C Lane into Tribut. River Weaver 4 River Wheeloo	m Shropshire Union Canal Shropshire Union Canal Shropshire Union Canal Shropshire Union ary of viaduct No.3 viaduct No.3 viaduct No.4 k 4	n Canal Shropshire Union Canal .1 viaduct No.2
Overall Status Good by 20 Objective: WFD Status WFD Status WFD Quali Element Element	27 Impact t 2015 RBMP Cycle 2 Status Obje	type from scheme component: IS MP Cle 2 Status jective	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/perman ent groundwater control	f ow in s s b c contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permane nt groundwater control contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permane nt groundwater control	Lowering of groundwater levels and potential reduction in f groundwater contributions to surface water bodies, GWDTE or groundwater s abstractions by temporary dewatering/perman ent groundwater control	Lowering of groundwater levels and potential reduction in of groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/perman ent groundwater control	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/perman ent groundwater control	Lowering of groundwater levels and potential reduction in groundwater "Dan contributions to surface water fl bodies, GWDTE or groundwater abstractions by temporary dewatering/perman ent groundwater control	nming" of undwater ow and uction in undwater tributions	g" of "Damming" of flow and groundwater flow and n in reduction in ater groundwater ions contributions	Lowering of groundwater levels and potential reduction in groundwater difference contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	amming" of "Damming" of indwater flow groundwater flo reduction in oundwater groundwater ntributions contributions	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/perma nent groundwater control	ming" of ndwater w and iction in ndwater ibutions ("Damming" of groundwater flow and reduction in groundwater contributions (contributions) (contributions)	Pamming" of andwater flow I reduction in roundwater ontributions trebuctions I reduction in roundwater ontributions trebuction in roundwater ontributions trebuction in roundwater ontributions temporary dewatering/per ent groundwa control	vels I "Damming" of "Damming" to groundwater groundwat r flow and flow and or reduction in reduction i groundwater groundwat contributions contributio man ter	of "Damming" of and pot er groundwater groundwa flow and surface wa n reduction in groundwater er groundwater ns contributions dewat groun	f groundwater levels ential reduction in ter contributions to ter bodies, GWDTE or ater abstractions by temporary ering/permanent adwater control	nming" of groundwater flow and reduction in groundwater contributions	Lor ground and "Damming" of gro groundwater contri- flow and surf reduction in bodie groundwater gro contributions abst te dewat nent g	wering of dwater levels d potential duction in bundwater ributions to face water es, GWDTE or tractions by emporary tering/perma groundwater control	Lowering of groundwater levels and potential reduction in f groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/perman ent groundwater control	of er groundwater flow and reduction in groundwater contributions	"Damming" of oundwater flow nd reduction in groundwater contributions	"Damming" of groundwater flow and reduction in groundwater contributions"Damming groundwater flow and groundwater flow and contribution groundwater contributionsThere is a history ofThere is a history	' of ow and in ter ons"Damming" of groundwater flow and reduction in groundwater contributionsofThere is a history of
Quantitati Saline Intr	ve Good 20	ood by 2015 Good	No likely saline or other intrusion of poor quality water as no sources of poor quality water identified in the vicinity. Vicinity.	No dewatering along the tunnel itself as TBM in use - see embedded in groundwater levels is anticipated. He tunnel itself as TBM in use - see embedded tunnel will have r measurable change in groundwater levels is anticipated. He tunnel will be for the tunnel will be for tu	no of saline intrusions due to scale of works relative to water body scale.	e No measurable impact of saline intrusions due to scale of works relative to water body scale. No measurable impact of salin intrusions due to scale of works relative to water body scale.	le No dewatering along the tunnel itself as TBM in use - see embedded mitigation. Thus, no lowering of groundwater levels anticipated.	II No measurable impact of saline intrusions due to scale of works on relative to water body scale.	pact No measurable impa s due impact of saline intru intrusions due to scale to sca of works relative to work water body scale.	neasurable ct of saline sions due ale of s relative ater body	impact of s due to elative to e. Scale of works relative to water body scale.	No measurable impact of saline intrusions due to scale of works relative to water body scale.	No measurable impact of saline intrusions due to scale of works relative to body scale.	No measurable impact of saline intrusions due to scale of works relative to water body scale.	easurable t of saline ions due e of relative er body No measurable No m impact of saline impa intrusions due to intru scale of works scale relative to water relati body scale. body	No measurable to f saline sions due to of works ve to water scale. No measurable impact of saline intrusions due to of works relative t water body scale.	No measurable impact of saline intrusions due to scale of o works relative to water body scale. No measurab impact of sali intrusions du to scale of works relative scale.	e intrusions due intrusions due to scale of saline vortes relative relative to water body scale.	ble impact of saline No m ue to scale of works intrus ater body scale. to wa	easurable impact of saline ons due to scale of works relative er body scale.	No measurable No mea impact of saline impact intrusions due to intrusio scale of works scale of relative to water relative body scale. body so	No measurable impact of of saline saline ons due to intrusions due f works to scale of e to water works relative cale. to water body scale.	No measurable impact of saline saline intrusions due to intrusions constructions of scale of works to scale of works relative to water body scale.	ble No measurable impact of saline intrusions due to scale of works relative to water ly body scale.	measurable act of saline usions due to e of works relative vater body scale.	localised subsidence duelocalised subsidence duelocalised subsidenceto dissolution within theto dissolution within theto dissolution within thefields adjacent to thefields adjacent toarea of this schemearea of this schecomponent. However,component. Howpiling will be of limitedpiling will be of lispatial extent and willspatial extent andnot lead to damming. Iflead to dammingadditional excavation,additional excavation,grouting andgrouting andreinforcement arereinforcement areexpected to occur inexpected to occurwater bearing strata.water bearing strThese are unlikely toThese are unlikelimpact water bodyimpact water body	nce duelocalised subsidence duehin theto dissolution within thethefields adjacent to thenearea of this schemeever,component. However,piling will be of limiteddwill notspatial extent and will. Ifnot lead to damming. Iftiton,additional excavation,grouting andre notrequired, these are notr inforcement arerequired, these are notr by the bearing strata.y toThese are unlikely tolyimpact water bodystatus.
Quantitati Water Bala	ve Good Goo Ince Good 20	ood by 2015 Good	The cutting may intersect the saturated zone of the aquifer and some dewatering may be required during construction. Dewatering radius of influence has been assessed as a maximum of 470m, however a retaining structure will be used so dewatering requirements will be smaller. There may be local impacts on water balance but water which may be removed from the aquifer during construction would, where reasonably practicable, be discharged back to the catchment. Dewatering and discharge arrangements would be designed in detail following site investigation in consultation with, and ensuring appropriate permits are in place, with the Environment Agency.	No dewatering along the tunnel itself as TBM in use - see embedded mitigation. Thus, no measurable change is anticipated. TBM in use - see embedded tunnel will have r measurable change is anticipated. The tunnel will be 43m bgl. The presence of the tunnel will have r measurable change on water issues are associated with long-term abstractions.	no f No measurable change to quantitative water balance due to scale of works relative to water body scale.	e No measurable change to quantitative water balance due to scale of works relative to water body scale. No measurable change to quantitative water balance due to scale of works relative to works relative to scale.	le No measurable altering the local wa change to guantitative water of water body scale. No water body scale. No measurable altering the local wa balance. Dewatering drainage and discha arrangements would be following site investigation in consultation with, ar ensuring appropriat permits are in place, with the Environmer Agency, to reduce ar damming effect.	r a cuts services and the portal to creat damming effect if through the thickr of the aquifer and prevents groundw flow across the portal to creat damming effect if through the thickr of the aquifer and prevents groundw flow across the portal to creat damming effect if through the thickr of the aquifer and prevents groundw flow across the portal to creat dame and disclarate to the balance due to scale of works relative to water body scale. In the ensuring appropring the function with the Environm Agency, to reduce damming effect.	for e a it cuts ess ater rtal, arater g, arge ild be balance due to scale of works relative to water body scale. and ate ent any	shallow ng is likely ve no surable No measurable c ge on to quantitative w balance due to so vo scale of s relative ster body	change No measurable change to vater quantitative water balance scale of due to scale of works o water relative to water body scale.	No measurable change e to quantitative water balance due to scale of works relative to water body scale.	No measurable change to quantitative balance due to of works relative er body scale.	er No measurable chang change to quanti quantitative water water balance due to scale due to of works relative to works water body scale. to wat scale.	easurable e to No measurable No m itative change to chan balance quantitative water quan scale of balance due to scale balar relative of works relative to of wo er body water body scale. wate	Reasurable ge to titative water nce due to scale orks relative to r body scale.	ative e to ative e to ative le. No measurable quantitative water balance due to scale of works relative to water body scale. No measurable quantitative water balance due to scale of works relative scale.	e No measurable change to quantitative No measura e water balance quantitative of due to scale of scale of works to works relative to water body scale.	ble change to water balance due to ks relative to water relativ	easurable change to quantitative balance due to scale of works e to water body scale.	No measurable change to quantitative water balance due to scale of works relative to water body scale.	Asurable change to e to quantitative tative water water balance e due to scale due to scale of ks relative to works relative pody scale. to water body scale.	No measurable No measurable change to quantitative water balance due to scale of works relative to water body scale. No measura quantitative water balan due to scale to works relati to water bo	ble No measurable No change to cha quantitative water qua of balance due to scale bal re of works relative to of v ly water body scale. wat	measurable nge to ntitative water ance due to scale vorks relative to er body scale.	There is a history of localised 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 required, these are not expected to occur in water bearing strata. These are unlikely to status.	of There is a history of nce due localised subsidence due hin the to dissolution within the fields adjacent to the ne area of this scheme ever, component. However, mited piling will be of limited d will not spatial extent and will . If not lead to damming. If tion, additional excavation, grouting and e reinforcement are re not required, these are not r in expected to occur in ata. water bearing strata. y to These are unlikely to ly impact water body status.
Quantitative Groundwa Dependen Terrestrial Ecosystem (GWDTE) Te	ter Good 20	ood by 2027 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 gradier of ROI.	e None present within or in vithin or in close proximity down-hydraulic gradient of ROI. 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 in close proximity hydraulic gradient o ROI.	Moss Bridge Marsh LWS and Spring Plantation Grassland LWS are located just within the ROI of the Crewe North portal (retained) cutting. There is potential pown- that the catchment in close proximity hydraulic gradient ROI. to be lowered due to permanent drawdown caused by the cutting. This could lead to a minor localised reduction in groundwater levels.	Moss Bridge Marsh LWS and Spring Plantation Grassland LWS are located just within the ROI of the Coppenhall Moss cutting. There is cutting. There is cutting that the down- catchment area for groundwater levels in lowered due to permanent drawdown caused by the cutting. This could lead to a minor localised reduction in groundwater levels.	Piling may obstru flow of groundwa the superficial de and an upper sec the bedrock in th immediate vicinit foundations for t bridge. Any impa likely to be extren localised. No mea changes expecter Moss Bridge Mar consdering the e and depth of the superficial and br aquifers.	uct the rater in eposits action of he ity of the acts are emely add on rsh LWS extent bedrock in upper section of the bedrock in the immediate vicinity of the foundations for the viaducts. Any impacts are likely to be highly localised and no measurable changes expected on Spring Plantation Grassland LWS consdering the extent and depth of the superficial and bedrock aquifers.	Pewatering due to presence of Warmingham Moss southbound box structure No.1 may in the in reduce groundwater ielevels. Any impacts are likely to be highly localised and no measurable change on Spring Plantation Grassland LWS and Moss anticipated when taking into account the extent and depth of the superficial and bedrock ielevels.	: piling may ct the dwater flow in perficial its and an upper n of the bedrock immediate v of the ations for the ng wall. Any ts are likely too hy localised o measurable e on Spring tion Grassland nd Moss Bridge LWS hated when into account tent and depth superficial and ck aquifers.	e None present within or in close proximity down-hydraulic gradient of ROI.	present or in or or close proximity hydraulic nt of ROI.	e present within close proximity n-hydraulic ent of ROI.	nin ity None present within or in close proximity down-hydraulic gradient of ROI. gradient of R	t None present within or in ty close proximity lic down-hydraulic DI. gradient of ROI.	lewatering during The R has the potential to Tribu dwater levels, but is throu to impact on the Local v Wood SSSI this w SSSI v This i impac	North RSD will include extensive canding and could reduce local I recharge to the glacial till aquifer SD is located in the catchment for ary of River Weaver 3, which flows gh Wimboldsley Wood SSSI. sed changes to groundwater flow atercourse and any features in the hich are dependent it are possible assessed as a minor localised t on the SSSI.	None present within or in close proximity down- hydraulic gradient of ROI.	present within ose proximity nydraulic nt of ROI.	None present within or in close proximity down-hydraulic gradient of ROI. ROI.	It None present within No ity or in close proximity or i ulic down-hydraulic dow gradient of ROI. gra	he present within n close proximity <i>r</i> n-hydraulic dient of ROI.	None present within areas with history of localised subsidence or in close proximity down- hydraulic gradient of ROI.	hin y of nce or y down- it of ROI.
Quantitati Dependen Surface Wa Body	ve Good 20	ood by 2015 Good	None present within or in close proximity down-hydraulic gradient of ROI.	The tunnel is located in the Mercia Mudstone aquifer and therefore is unlikely to impact on groundwater flow pathways in the superficial deposits. The tunnel is located in the aquifer and therefore is unlikely to impact on groundwater flow pathways in the superficial deposits.	Temporarily lowering of groundwater levels to below 43m bgl could result in reduced flow within Gresty Brook during construction, due to drawdown of water within ROI.No measurable changes due to small scale of worksHowever, no measurable change expected due to the use of secant pile walls in the superficial deposits and installation of SCL in the bedrock shortly after construction, which will limit the impact on any groundwater dependent surface receptors.No measurable changes due to small scale of worksScale of body of water and measurable change expected due to the use of secant pile walls installation of SCL in the bedrock shortly after construction, which will limit the expendent surface the perfors.No measurable changes due to small scale of wals in superficial deposits and installation of SCL in bedrock shortly after construction).	e o None present within or in close proximity down-hydraulic gradient of ROI.	y ty ic ic or in close proximity down-hydraulic gradient of ROI. None present within in close proximity hydraulic gradient o ROI.	or None present within None present with pwn- or in close proximity in close proximity f down-hydraulic hydraulic gradient gradient of ROI. ROI.	Moss Bridge Marsh LWS and Spring Plantation Grassland LWS are located just within the ROI of the Coppenhall Moss cutting. There is smal align down- catchment area for groundwater levels in the habitat to be lowered due to permanent drawdown caused by the cutting. This could lead to a minor localised reduction in groundwater levels.	The Tributary of I Brook 1 and Hog Brook are in clos proximity to the overbridge which ge due to l scale and sment of r and edded groundwater flow highly localised. I r and r and edded groundwater flow ation. the watercourses expected due to embedded mitige (bentonite and temporary casing	Fowle ggins se has the potential to obstruct groundwater flow towards the watercourses. However, any groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater intercepted by the viaducts would still discharge to the watercourses via the obstruct groundwater flow into Tributary of Fowle Brook 1 and Hoggins Brook are expected.	The Tributary of Fowle Brook 1 and Hoggins Brook are crossed by the Proposed Scheme so have the potential to obstruct groundwater flow towards the watercourses. However, any groundwater intercepted by the viaducts would still scale an discharge to the watercourses via the scale of drainage system of the Proposed Scheme, upstream of the route s away from the viaducts. As a result, no measurable changes on groundwater flow into Tributary of Fowle Brook 1 and Hoggins Brook are expected.	Aasurable es due to small ind alignment of compared to of body of water nbedded tion. Brok will be diverted for approximately 1 kr of the watercourss including a culver under Warmingham Mos viaducts. There wi be no measurable change to groundwater flow to this watercourss from construction	 below ground structures have the potential to obstruct w groundwater flow towards Hoggins Brook. Hoggins Brook will be Brook will be alignm approximately 1km approximately 1km compa including a culvert scale c under Warmingham water scale c prost viaducts. There measurable change to groundwater flow to this watercourse, from construction. in. 	easurable Below ground Below structures have the struct potential to obstruct poten groundwater flow groun towards Hoggins Broo scale and Brook Will be Broo acade and Brook will be Broo diverted for diver approximately 1km appr ared to of the watercourse, of the of body of including a culvert inclu and under Warmingham unde dided Moss viaducts. There measurable change meas to groundwater flow to gr to this watercourse to th from construction.	v ground tures have the ntial to obstruct ndwater flow rds Hoggins k. Hoggins k. Hoggins k will be ted for sumately 1km e watercourse, ding a culvert r Warmingham • viaducts. e will be no surable change poundwater flow s watercourse construction.	nin iity None present within or in close proximity close proximit down-hydraulic gradient of ROI. gradient of R	 None present within or in close proximity down-hydraulic gradient of ROI. 	south of Wimboldsley d within land required ion of Crewe North rary dewatering during has the potential to dwater levels in the spring. Any ikely to be localised ory. Drainage from the heme will be t the spring. Therefore, lil receive some flow lities drainage network sed Scheme during nstruction. Minor e spring as the timing differ from the natural flow in the area but on pond will act to flow to the spring.	North RSD will include extensive randing and could reduce local I recharge to the glacial till aquifer (100m south of Wimboldsley Hall d within land required for uction of Crewe North RSD. Both g and following construction of the North RSD, there may be reduced dwater baseflow to the spring. e possible springs will be protected established. Drainage from the sed Scheme will be discharged at ring. Therefore, the spring will e some flow from the facilities age network of the Proposed the during and post-construction. impact on the spring as the timing way differ from the natural dwater flow in the area but an tation pond will act to regulate the pothe spring.	None present within or in close proximity down- hydraulic gradient of ROI.	oresent within ose proximity nydraulic nt of ROI.	None present within or in close proximity down-hydraulic gradient of ROI. ROI.	it None present within Noi ity or in close proximity or i down-hydraulic dow gradient of ROI. gra	ne present within n close proximity /n-hydraulic dient of ROI.	None present within areas with history of localised subsidence or in close proximity down- hydraulic gradient of ROI.	hin y of nce or v down- it of ROI.
			Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control Creating or altering o pathways along which existing poor quality groundwater can migrate	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	Disturbing or mobilising existing poor qualityCreating or altering of groundwater by temporarydewatering or depressurisation and permanent groundwater controlquality groundwater can migrate	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	g of ich	Disturbing or mobilising existing poor quality yhich lity dewatering or depressurisation and permanent groundwater control	ting or ing of ways g which ing poor ity ndwater nigrate	ering of Creating or altering of gwhich pathways along which uality existing poor quality an groundwater can migrate	Disturbing or mobilising existing poor quality groundwater by of path temporary dewatering or depressurisation and permanent can mig groundwater control	ng or altering hways along existing poor y groundwater igrate	Disturbing or mobilising existing poor quality alterin groundwater by temporary along dewatering or existin depressurisation qualit and permanent groun groundwater can m control	ing or ng of vays of pathways along which which existing poor quality y groundwater can igrate migrate	ting or mobilising existi ing of poor quality ways along groundwater by h existing poor ity dewatering or ndwater can depressurisation ate permanent groundwater con	ng Creating or altering of altering of pathways pathways along which along which existing poor quality groundwater groundwate can migrate can migrate	Creating or altering of pathways along which rexisting poor quality regroundwater can migrate	or mobilising existing y groundwater by Creat dewatering or which ation and permanent groun er control	ing or altering of pathways alon existing poor quality dwater can migrate	Creating or altering of pathways along which existing poor quality groundwater can migrate	bing or sing existing Creating or altering of altering of dwater by pathways along which ering or existing poor ssurisation quality groundwater dwater can migrate of the stress of the	Disturbing or mobilising existing poor quality altering of groundwater by pathways temporary along whic dewatering or existing po depressurisation quality and permanent groundwater control can migrat	Creating or altering of Creating pathways along of J which existing poor wh quality qua groundwater can car migrate	ating or altering athways along ch existing poor lity groundwater migrate	ring ng poor athways along which existing poor quality nn migrate Creating or alter pathways along which existing poor quality groundwater can migrate	ring of Creating or altering of which pathways along which ality existing poor quality n groundwater can migrate
Chemical S Intrusions	aline Good 20	ood 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/permane nt groundwater control required.	No measurable change due to embedded mitigation (secant pile walls in superficial deposits and installation of SCL in bedrock shortly after construction).	 No measurable change due to embedded mitigation change due to change due to change due to change due to scale of works relative to mater body. control required. 	No measurable change due to embedded mitigation i.e. no or minimal dewatering/permane nt groundwater control required.	No measurable change due to embedded mitigation s - i.e. no or minimal dy. dewatering/permane nt groundwater control required.	No measurable change due to embedded mitigation i.e. no or minimal dewatering/permanen t groundwater control required.	neasurable ge due to edded ation - i.e. r minimal itering/per ent ndwater rol ired.	change No measurable change due to embedded no or mitigation - i.e. no or minimal nanent dewatering/permanent ntrol groundwater control required.	No measurable change due to embedded change mitigation - i.e. no or embedd minimal i.e. no o dewatering/permanent dewater groundwater control t ground required. required	Assurable e due to dded mitigation or minimal ering/permanen ndwater control ed.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permane nan dewatering/permane control required. control required.	easurable e due to dded tion - i.e. minimal ering/per nt dwater ol ed. No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permane nt groundwater control required.	No measurable ge due to edded ation - i.e. no or nal tering/perman roundwater ol required.	tion - anen htrol	ele No measurable change due to embedded e. mitigation - i.e. no or minimal er dewatering/per manent groundwater control required.	ble change due to No m hitigation - i.e. no or mitiga atering/permanent dewa control required. contr	easurable change due to embedde tion - i.e. no or minimal ering/permanent groundwater l required.	No measurable change change due to and sha dembedded of borr mitigation - i.e. no relative or minimal ground dewatering/perma Implem nent groundwater control required. mitigat also ass	asurable e due to scale allow depths ow pits e to dwater body. nentation of lded cion measures sumed.	No measurable change due to scale and shallow depths of borrow pits relative to groundwater body. Implementation of embedded mitigation measures also assumed.	ble to hs ts ble change due to change due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	measurable nge due to bedded mitigation no or minimal vatering/permane roundwater trol required.	Additional stabilisation and mitigation may be required due to unstable ground conditions relating to dissolution related 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. Additional stabili required due to r ground condition related subsidence. The is a possibility that this is a possibility	sation Additional stabilisation and mitigation may be required due to unstable ground conditions relating to dissolution related subsidence. The is a possibility that this cor could mobilise poor ter quality, saline water cale of however due to scale of works and embedded mitigation the effects of this are likely to be minor.
Chemical Drinking W Protected (DrWPAs)	Areas Good Good 20	ood by 2015 Good	None in community area MA01. None in community area MA01.	None in community area MA01. MA01.	None in community area MA01. None in community area MA01.	None in community area MA01.	None in community area MA01. area MA01.	None in community None in communi area MA01. area MA01.	y None in community None community area MA01.	e in nunity MA01. 201 of	nity area None in community area MA01.	None in community area None in AMA01.	n community None in communi IA01. area MA01.	nity None in community area MA01.	in None in community None unity 1A01. area MA01. area	in community None in commun MA01. area MA01.	ty None in None in community a area MA01. MA01.	None in community None in com area MA01.	munity area MA01. None	in community area MA01.	None in community area MA02.	n community A02. None in community area MA02.	None in community area MA02. None in community area MA02.	None in community No area MA02. are	ne in community a MA02.	None in community area None in commun MA02. MA02.	ity area None in community area MA02.
Chemical Groundwa Dependen Terrestrial Ecosystem (GWDTEs)	ter : Poor Goo 20 S Test	pod by 2027 Poor	None present within or in close proximity down-hydraulic gradient of ROI. None present within or in close proximity dow 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 gradier of ROI.	e None present within or in close proximity down-hydraulic gradient of ROI. 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 in close proximity hydraulic gradient o ROI.	or None present within pwn- or in close proximity f down-hydraulic gradient of ROI. ROI.	Moss Bridge Marsh Moss Moss Will be partially removed during construction. For the remaining habitat, the in or temporary works have down- the potential to affect water quality, although this is likely to be localised and temporary. This will be mitigated through the draft CoCP. Mitig the draft CoCP.	eenhall sincludes s Bridge h. There is otential to ndwater surface r quality n may be ated along pathways ed during truction of utting. This e ated jgh the ementation e draft	effects to groundwater quality to spring Plantation ut these solution grassland LWS, 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 Spring Plantation Grassland LWS and Moss Bridge Marsh LWS, although this is likely to be localised and temporary. This will be mitigated through the implementation of the draft CoCP.	mporary works he potential to groundwater r to Spring tion Grassland nd Moss Bridge LWS, although likely to be ed and rary. This will igated through plementation of aft CoCP.	e None present within or in close proximity down-hydraulic gradient of ROI.	present or in proximity hydraulic nt of ROI.	e present within close proximity n-hydraulic ent of ROI. gradient of ROI.	nin iity close proximity down-hydraulic gradient of ROI.	t None present within or in close proximity down-hydraulic DI. gradient of ROI.	ble change due to nitigation and orks for Crewe North ely above ground.	easurable change due to embedde tion and proposed works for Crev RSD are largely above ground.	None present within or in close proximity down- hydraulic gradient of ROI.	oresent within ose proximity hydraulic nt of ROI.	None present within or in close proximity down-hydraulic gradient of ROI. ROI.	It None present within No ity or in close proximity or i down-hydraulic gradient of ROI. gra	ne present within n close proximity /n-hydraulic dient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	hin or in own- it of ROI. ROI.
Chemical Dependen Surface Wa Body	e Poor Goo ater 20	pod by 2027 Poor	None present within or in close proximity down-hydraulic gradient of ROI. None present within or in close proximity dow hydraulic gradient of ROI.	The Proposed Scheme intersects Gresty Brook and Valley Brook at the surface in two locations in Crewe, however, the Proposed Works occur at depth below ground level therefore no measurable changes are expected. The Proposed Valley Brook at th surface in two locations in Crewe, however, the Proposed Works occur at depth below ground level therefore no measurable changes are expected.	tts d he ve, None present within or in close proximity down-hydraulic gradient of ROI. gradient of ROI. 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. NOI.	o or None present within None present with pwn- or in close proximity in close proximity f down-hydraulic hydraulic gradient gradient of ROI. ROI.	in or in or be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	borary s intersect tary of e Brook 1. lised loorary cts from ion of raue to rorary ctions in ndwater ributions. will be ated ugh the ementation e draft	effects to le Brook irook ted but ly to dy status ed Brook 1 and Hoggins Brook may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects to Some localised effects to Tributary of Fowle Brook 1 and Hoggins Brook may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation. to embe mitigatio	localised effects utary of Fowle 1 and Hoggins may be hated but these likely to impact bedded tion.	rks of works compared works ie to scale and alignment alignm vater and scale of body of compared water mitigation. embed	easurable e due to scale and hent of ared to of body of and dded tion.	easurable ge due to small and alignment orks compared ale of body of r and edded ation.	nin None present None present within or in within or in close proximity close proximit down-hydraulic down-hydrau gradient of ROI. gradient of R	t None present within or in close proximity down-hydraulic DI. gradient of ROI.	ary works have the The ta affect groundwater to aff ugh this is likely to be this is temporary. temp	mporary works have the potential ect groundwater quality although likely to be localised and orary.	None present within or in close proximity down- hydraulic gradient of ROI.	oresent within ose proximity hydraulic nt of ROI.	None present within or in close proximity down-hydraulic gradient of ROI. ROI.	It None present within No ity or in close proximity or i down-hydraulic dow gradient of ROI. gra	ne present within n close proximity /n-hydraulic dient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	hin or in own- it of ROI. ROI.
General Chemical 1	est Poor Goo 20	pod 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.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permane nt groundwater control required.	Some localised effects may be anticipated but these are unlikely to impact waterbody er embedded mitigation. Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	d 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.	d No measurable tchange due to embedded mitigation i.e. no or minimal dewatering/permane nt groundwater control required.	nge No measurable No measurable ch change due to due to embedded r embedded mitigation mitigation - i.e. no - i.e. no or minimal minimal dewatering/permane dewatering/perma l nt groundwater groundwater cont control required. required.	ange No measurable change due to or embedded mitigation i.e. no or minimal dewatering/permanen rol t groundwater control required.	e localised ts may be ipated but e are ely to ct rbody s due to edded ation.	change No measurable change ed due to embedded no or mitigation - i.e. no or minimal nanent dewatering/permanent ntrol groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	Assurable e due to Ided mitigation- or minimal ering/permanen ndwater control ed.	No measurable chang change due to embed embedded mitiga no mitigation - i.e. no or n minimal dewater nt groundwater groun . control required. contro requir	easurable e due to dded tion - i.e. minimal ering/per nt dwater ol ed.	No measurable change due to change due to change due to change due to embedded mitiga i.e. no or minimal dewatering/perma t groundwater co required.	No measurable No measurable change due to change due to embedded embedded mitigation - i.e. mitigation - i. no or minimal no or minima dewatering/per dewatering/per manent groundwater groundwater control control required.	ele No measurable change due to embedded e. mitigation - i.e. No measura il no or minimal embedded r dewatering/per manent groundwater control required.	ble change due to No m nitigation - i.e. no or mitiga vatering/permanent dewa control required. contr	easurable change due to embedde tion - i.e. no or minimal ering/permanent groundwater ll required.	No measurable change change due to and sha d embedded of born mitigation - i.e. no relative or minimal ground dewatering/perma Implem nent groundwater control required. mitigat also as	asurable e due to scale allow depths row pits e to dwater body. nentation of Ided tion measures sumed. No measurable change due to scale and shallow depths of borrow pits relative to groundwater body. Implementation measures also assumed.	No measurable change due to scale and shallow depths of borrow pits relative to groundwater body. Implementation of embedded mitigation measures also assumed.	ble to hs ts change due to change due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	measurable nge due to bedded mitigation no or minimal ratering/permane roundwater trol required.	Some localised effects May be anticipated but may be anticipated but may be anticipated but these are unlikely to these are unlikely impact waterbody impact waterbody status. Embedded Embedded mitig mitigation does not does not accoun account for these these potential construction construction opt options with regards to the foundation foundation component of this of this scheme scheme component set therefore closer closer assessment is required once once construction construction opt options are confirmed.	fectsSome localised effectsed butmay be anticipated butr tothese are unlikely toy status.impact waterbodyationstatus. Embeddedformitigation does notaccount for theseons withpotential constructionoptions with regards toonentthe foundationcomponent of thisationscheme componentationtherefore closerassessment is requiredons areonce constructionoptions are confirmed.

Table A22: Weaver and DaWeaver and Dane Quaterr(GB1202G991700) (SecondEA ManagementCatchment:	ne Quaternary Sand ar hary Sand and Gravel A ary aquifer (undifferen dest GW Scheme	and Gravel Aquifers (G Aquifers entiated)) ne component (ID):	GB1202G991700) detailed impact assessm Detailed Impact Assessment GB41202G991700-C-47	ent - effects on current status Detailed Impact Assess GB41202G991700-RT	-48 GB41202G991700-RT-49	Detailed Impact Assessment GB41202G991700-BP-50	Detailed Impact Assessment GB41202G991700-RT-51	Detailed Impact Assessment Detailed Impact Assessment GB41202G991700-HD-54b GB41202G991700-VF-54	Detailed Impact Assessment GB41202G991700-VF-56	Detailed Impact AssessmentDetailed Impact AssessmentDetailed Impact AssessmentGB41202G9917 00-VF-59GB41202G991700-VF-61 63GB41202G99 63	mpact Detailed Impact Assessment GB41202G991700-HD- 64a	Detailed Impact Detailed Impact Detailed Impact Assessment Assessment Assessment 65 GB41202G991700-VF 66	ailed Impact ssessmentDetailed Impact Assessment02G991700-VF- 68GB41202G991700-VF	Detailed Impact AssessmentDetailed Impa Assessment70GB41202G991700-VF 74GB41202G9917 0-HD-76a	ct Detailed Impact Assessment 70 GB41202G991700- VF-77	Detailed Impact Assessment GB41202G991700-RT-82	Detailed Impac GB41202G99	700-RT-83	Detailed Impact Assessment GB41202G991700-CR-87	Detailed Impact Assessment GB41202G991700- BF-76b	Detailed Impact Assessment GB41202G991700-CR-88	Detailed Impact AssessmentDetailed Impact AssessmentGB41202G99170 0-OF-91GB41202G991700- HD-106a
Overall Status	Scheme	e component type:	Retaining Wall	Retaining Wall	Retaining Wall	Borrow Pit	Retaining Wall	Highways Drainage Discharge Viaduct Foundations	Viaduct Foundations	Viaduct Viaduct Foundations Viaduct Four	ndations Highways Drainage Dve discharge	rbridge Foundation Viaduct Foundations Viadu	ct Foundations Viaduct Foundation	s Viaduct Foundations Drainage discharge	Viaduct Foundations	Retaining Wall	Retainin	g Wall	Cutting with retaining structure	Highways Drainage discharge to ground (offline drain) - construction only	Cutting with retaining structure	Overbridge Highways Drainage Foundations discharge
(2015): Poor	Scheme co	component name:	Clive Green North cutting	Clive Green North embankment	retaining wall Middlewich box structure	MA02 Cohesive Borrow Pit C	Stanthorne South embankment retaining wa	all A54 Middlewich Road viaduct	River Dane viaduct	Puddinglake Trent and Mersey Canal Brook viaduct viaduct Gad Brook v	Highways drainage discharge from viaduct realigned A556 Shurlach Road into Broken Cross Drains	Vade Brook offline overbridge Wade Brook viaduct Lostock	Gralam viaduct Smoker Brook viadu	ct Arley Brook viaduct M6 realignme	nt M6 Mere viaduct Hc	o Green South embankment No.2 retaining wall	Hoo Greer	viaduct	Hoo Green North cutting	A556 (Chapel Lane Drain)	Hoo Green West cutting	A50 overbridge A50 overbridge A50 averbridge A50 averbridge
Overall Status Objective: WFD Status Element Element	2027 Impact ty 2015 RBMP t Cycle 2 Status Ot	type from scheme component: 2015 RBMP Cycle 2 Status Objective	Lowering of roundwater levels and potential reduction in groundwater "Damming" groundwater "Damming" groundwater flor ater bodies, GWDTE or groundwater abstractions by temporary ewatering/permanent groundwater control	Lowering of groundwater levels and potential reduction in of groundwater w and contributions to n surface water bodies, er GWDTE or ns groundwater abstractions by temporary dewatering/permanen t groundwater control	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water flow and in groundwater groundwater abstractions by temporary dewatering/permanent groundwater control	" of ow and undwater bons " of 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	and water water water water water water contributions	"Damming" of groundwater flo and reduction in groundwater contributions	"Damming" of groundwater flow and reduction in groundwater contributions "Damming" of groundwater flow and reduction in groundwater contributions "Damming" of groundwater flow and reduction in groundwater contributions "Damming" of groundwater groundwater contributions	ng" of er flow g tion in a vater tions	"Damming" of "Damming" of "Da roundwater flow groundwater flow groun and reduction in and groundwater groundwater gro contributions contributions cor	amming" of "Damming" of ndwater flow groundwater flow a reduction in reduction in bundwater groundwater ntributions contributions	"Damming" of groundwater flow and reduction in groundwater contributions	groun pote "Damming" of groundwater flow contri and reduction in groundwater contributions a dewa grou	Lowering of dwater levels and ntial reduction in groundwater butions to surface bodies, GWDTE or groundwater ostractions by temporary tering/permanent ndwater 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 "Damming" of and pote groundwater flow and groundwat reduction in surface wat groundwater groundwat contributions temporary de ground	groundwater levels ntial reduction in er contributions to er bodies, GWDTE or er abstractions by watering/permanent lwater control	d ter di	owering of groundwater levels and otential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary ewatering/permanent groundwater control	of "Damming" of groundwater w and flow and r reduction in groundwater is contributions
Quanti Saline I	ative Good G	Good by 2015 Good by 2015 Good by 2015 Good Each Good Each Cut Spi Good Each Cut Spi Good Each Each Each Each Each Each Each Each	ere is a history of calised subsidence due dissolution within the lds adjacent to the area this scheme mponent. However, this titings will be of limited atial extent and will not ad to damming. If ditional excavation, outing and inforcement are quired, these are not pected to occur in water aring strata. These are likely to impact water idy status.	f te due n the he area ponent. I extent I extent I ocalised subsidence due to dissolution within the fields adjacent to the area of this scheme g and not n water se are vater Value	history of subsidence due to n within the fields o the area of this omponent. this retaining be of limited sent and will not ment are these are not to occur in water rata. These are impact water JS.	bof ce due to the fields ea of this nt. ining ited will not If ion, orcement e are not in water ese are water	nges from e to scale of depth of to water body to dissolution within the adjacent to the area o scheme component. However, this retainin, walls will be of limited spatial extent and will lead to damming. If additional excavation, dewatering is ancipated during construction. There is a history of localised subsidence due to dissolution within the fields adjacent to the area of this scheme component. No dewatering is ancipated during construction.	due to fields of this of this ang d f hot inot re not water are ter d d d d d d d d d d d d d d d d d d d	There is a history of localised 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 required, these are not expected to occur in water bearing strata. These are unlikely to impact wate body status.	No measurable changes from saline intrusions due to scale of works relative to to r r	ble to .e. no or /atering de	o measurable ange due to nbedded mitigation e. no or minimal watering required. No measurable change due to embedded mitigation - i.e. no or minimal dewatering required.	Isurable No measurable chang s from saline from saline intrusions due to scale of works s relative to relative to water body ody scale. scale.	es No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permane nt groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	No measurable asurable change change due to embedded embedded al no or minimal ering/permanent dewatering/pern anent ed. groundwater control required	No measurable change due to embedded mitigation - i.e. no or minimal m dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	r dewatering will water levels but will water levels but will urable change on ns. sant piled retaining built along the entire loo Green cuttings cantly reducing the pr dewatering.	ng in	e temporary dewatering will disrupt pundwater levels but will have no easurable change on saline trusions. Trmanent secant piled retaining walls e to be built along the entire length of e Hoo Green cuttings thereby gnificantly reducing the requirement r dewatering. The temporary dew flow paths but will in no measurable cha saline intrusions. Permanent secant i retaining walls are built along the entire length of built along the requirement r dewatering.	vatering water have No measurable or change due to embedded piled mitigation - i.e. to be no or minimal re dewatering/perm anent groundwater ng the control required.
Quantit Water E	ative Good G	Good by 2015 Good I un be un be un be	There is a history of calised subsidence due dissolution within the lds adjacent to the area this scheme mponent. However, this ttings will be of limited atial extent and will not ad to damming. If ditional excavation, outing and inforcement are quired, these are not pected to occur in water alikely to impact water dy status.	f te due n the he area hponent. I extent I extent onal g and not n water Not Not Not Not Not Not Not Not	history of subsidence due to n within the fields o the area of this omponent. this retaining be of limited tent and will not mming. If excavation, and nent are these are not to occur in water rata. These are impact water us.	No measurable changes on quantitative water balance due to scale of works and shallow depth of borrow pit relative to water body scale. No measurable changes on quantitative water balance due to scale of works and shallow depth of borrow pit relative to water body scale.	nges on balance due to shallow depth //e to water due to dissolution within the adjacent to the area of scheme component. Iocalised subsidence due to dissolution within the fields adjacent to the area of this scheme component. No dewatering is ancipated during construction. Horewer, this retainin, walls will be of limited spatial extent and will lead to damming. If additional excavation, grouting and reinforce are required, these are expected to occur in w bearing strata. These a unlikely to impact wat body status.	due to e fields of this of this fields adjacent to the are 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 required, these are not expected to occur in water bearing strata. These are unlikely to impact water body statu	There is a history of localised 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 required, these are not expected to occur in water bearing strata. These are unlikely to impact wate body status.	No measurable changes on quantitative water balance due to scale of works relative to water body scale. r	ble to .e. no or <i>v</i> atering de	o measurable ange due to bedded mitigation e. no or minimal watering required. No measurable change due to mitigation - i.e. no or minimal dewatering required.	Isurable s on ative water e due to scale of elative to water ale. No measurable chang on quantitative water balance due to scale o works relative to water body scale.	 No measurable change due to embedded mitigation i.e. no or minimal dewatering/permane nt groundwater control required. 	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	Asurable change embedded ion - i.e. no or al ering/permanent dwater control ed.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required. I.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	r dewatering will water levels but will urable change on built along the entire oo Green cuttings cantly reducing the or dewatering.	ig io to th s ed d d t d d s i t f d d s i t f d d s i t f d d s i t f d d s i t f d s s s t t f d s s s s t t s s s s s s s s s s s s s	e temporary dewatering will disrupt bundwater levels but will have no easurable change on water balance. Irmanent secant piled retaining walls e to be built along the entire length of e Hoo Green cuttings thereby gnificantly reducing the requirement r dewatering.	vatering water have nge on change due to embedded piled nitigation - i.e. to be no or minimal dewatering/perm areen anent groundwater or control required.
Quantitative Ground Depend Terrest Ecosyst (GWDTE	water ent rial Good G ems) Test	Good by 2027 Good Wit gra	one present within areas th history of localised bsidence or in close oximity down-hydraulic adient of ROI.	n areas lised ose draulic None present within areas with history of localised subsidence or in close proximity down- hydraulic gradient of ROI.	sent within areas ry of localised e or in close down-hydraulic f ROI. None present within areas with history of localised subsidence or in close gradient of ROI. None present with with history of localised subsidence or in close gradient of ROI. gradient of ROI.	nin areas alised None present within or in None present within lose close proximity down- proximity down-hyd ydraulic hydraulic gradient of ROI. of ROI.	n or in close h or in close draulic gradient gradient of ROI. None present within areas with history of localised subsidence or in close proximity down-hydraulic gradient of ROI.	areas ed e areas with history of localised subsidence or i aulic hydraulic gradient of RO	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 ar required to mitigate and stabilise the unstable ground conditions, there is potential to disrupt groundwater flow to these habitats. Embedded mitigation does not account for such components and therefore closer assessment is required once construction options are confirmed. Oak Clump ancient woodland is located upgradient o the Proposed Scheme hence is unlikely to be impacted by permanent below ground structures.	Image: None present within or in close proximityThe permanent below ground features, such as piled foundations of the Trent and Mersey Canal viaduct, have the potential to locally alter groundwater flow in the superficial and bedrock aquifers supporting Whatcroft Lane Wetlands LWS and SBI. Due to the location and minor extent of the piers within the much larger area of the aquifers, no measurable change to groundwater flow pathways to the habitat expected.None present or in close pr down-hydraulic	nt within No roximity or ulic ROI. gra	one present within in close proximity wn-hydraulic adient of ROI.	resent within or proximity ydraulic t of ROI.	The permanent below ground features, such as piled foundations of the Arley Brook viaduct, have the potential to locally alter groundwater flow in the superficial 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 pathways to the Arley and Waterless Brook Corridor LWS are expected.	None present within or in close proximity down- hydraulic gradient of ROI. No me due to mitiga minim dewate ground require	Asurable change embedded ion - i.e. no or al ering/permanent dwater control ed. by a boots al by a boots by a boots al by a boots by a boots by a boots a boot	No measurable change due to embedded mitigation - i.e. no or minimal n dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	nfluence of the cutting tial spring at Dobb Farm, A50 which signated habitat. ccts on this habitat are	n N PI R	one present within or in close oximity down-hydraulic gradient of DI.	n or in within or in close proximity down- of ROI. gradient of ROI.
Quanti Depend Surface Body	ative ent Good G Water	Good by 2015 Good Sul pro gra	one present within areas th history of localised bsidence or in close oximity down-hydraulic adient of ROI.	n areas lised ose draulic ROI.	sent within areas ry of localised e or in close down-hydraulic f ROI. None present within areas with history of localised subsidence or in close proximity down-hydraulic gradient of ROI. None present with subsidence or in close gradient of ROI.	buring dewatering and excavation of the cohesive borrow pit, groundwater levels in proximity to spring at pond 100m east of Beckett Avenue, 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 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.	Imported of alpit Lane will rial excavation. g forms the utary of River th baseflow will to a temporary ever, tion will be ributary of subsidence or in close patream of everhich will gradient of ROI.None present within areas with history of localised subsidence or in close proximity down-hydraulic gradient of ROI.None present within a with history of localised subsidence or in close proximity down-hydraulic gradient of ROI.vewhich will to n the ll material for pe of similar extracted ble the spring ed once work is sed impactsNone present within areas with history of localised subsidence or in close gradient of ROI.	areas ed e aulic aulic aulic	Permanent piled foundations of 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 eac other and overall, there is expected to be no measurable change in the baseflow to the rive	Below ground structures have the potential to obstructBelow ground structures providing and the potential to obstructViaduct inters Gad Brook and the location and the piers within minor extent of the much larger area of the aquifers, no measurable change to the potentialViaduct inters Gad Brook and the location and minor extent of to the location and minor extent of the piers within the much larger area of the aquifers, no measurable change to minimal dew minimal dew watercourse expected.r.Change to groundwater flow pathways to the watercourse expected.pathways to the watercourse expected.	sects nd Gad changes idded .e. no or vatering an ex ma on to	ade Brook offline erbridge crossesWade Brook offline overbridge crossesade Brook and erbridge crossesthe Wade Brook and has the potential to impact baseflow.the Wade Brook and has the potential to impact baseflow.oundwater flow in e superficialGroundwater flow in the superficialGroundwater flow in the superficialposits is likely to low topography d flow towards the ttercourse.Follow topography and flow towards the watercourse.None pri in close down-h groundwater flow is expected to be parallel to the route, and piles are not easurable change groundwater flow to Wade Brook.None pri in close down-h gradien	Below ground structures of Smoker Brook viaduct have th potential to obstruct groundwater flow towards Tributary of Peover Eye and Peove ydraulic Eye. These effects are t of ROI. likely to be highly localised and overal I measurable change to groundwater flow to watercourses are expected.	Below ground structures of Arley Brook viaduct have the potential to obstruct groundwater flow towards rr Waterless/Arley Brook. These effects are likely to be highly localised and overall no measurable change to groundwater flow to the watercourse is expected.	Tributary of Tabley Brook 4 is crossed by the Proposed Scheme and Tributary of Tabley 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 Proposed Scheme and Tributary of Tabley Brook 6 and 8 will receive baseflow from the drainage network.	asurable change embedded ion - i.e. no or al ering/permanent water control ed. The retaining structure has the potential to disrupt groundwater flow to the Tributary of Tabley Brook 9. However, no measurable change anticipated due to scale of works and embedded mitigation - i.e. no or minimal dewatering/perm anent groundwater control required	e No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	The retaining structure has the potential to disrupt groundwater flow to tributaries of Tabley Brook, However, no measurable change anticipated due to scale of works and embedded mitigation.	Influence of the cutting tial spring at DobbTributaries of MillingtonFarm, A50 which signated habitat and utary of MillingtonClough 1 to 4 are crossed by the Proposed Scheme and as such groundwater flow to these watercourse is likely to be interceptedVillington Clough 1 to vithin the radius of e cutting thus will educed baseflow. of Millington Clough f the cutting thereby n a section of the crossing. Localised minor impact on Tributaries of with mitigation Clough 1 to section of the tributaries of Millington Clough thready reducing flow in . section of the tributaries of the cutting thereby n a section of the millington Clough the drainage discharge.	res a a du a	e radius of influence of the cutting ludes potential spring at Dobb Lane, w Tree Farm, A50 which supports designated habitat and feeds into butary of Millington Clough 1. Minor calised impact on surface water flow ikkely. butaries of Millington Clough 1 to 4 e located within the radius of fluence of the cutting thus will likely ceive reduced baseflow. Scheme ainage will discharge to the butaries of Millington Clough butaries of Millington Clough ceive reduced baseflow. Scheme downstream of the cutting thereby iducing flow in a section of the ibutaries of Millington Clough ceiverem of the cutting thereby iducing flow in a section of the ibutaries of Millington Clough ceive and the cutting thereby iducing flow in a section of the ibutaries of Millington Clough postream of the crossing. Localised inor impact on Tributaries of clough 1 to 4 with illington Clough 1 to 4 with illington Clough 1 to 4 with mitigation <i>i</i> th drainage discharge.	inage
		Dis ex gro tei or pe co	sturbing or mobilising isting poor quality oundwater by mporary dewatering depressurisation and rrmanent groundwater ntrol	ng of rhich lity ng of poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	or altering of s along which boor quality ater can migrate	ing of which ality migrate between the substantial state of the substan	ng of pathways ng poor ter can be of pathways ng poor ter can be depressurisation and permanent groundwater control	of 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	Creating or altering of pathway along which existing poor quality groundwater can migrate	Creating or altering of pathways along which existing poor quality groundwater can migrate	altering s along ing poor er can Creating or altering of pathways along which existing poor quality groundwater can migrate	eating or altering pathways along nich existing poor ality oundwater can grate Creating or altering of pathways along which existing poor quality groundwater can grate	g or altering Creating or altering pathways along pathways along whi existing poor quality groundwater can grate migrate	of creating or altering of pathways along which existing poor quality groundwater can migrate	Creating or Distur altering of existin g pathways along groun which existing tempo poor quality or dep groundwater can perma migrate groun	bing or mobilising g poor quality dwater by rrary dewatering ressurisation and ment dwater control	Disturbing or mobilising existing poor quality g groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of Disturbing or pathways along which poor quality existing poor quality groundwater can depressurisal migrate groundwater	mobilising existing groundwater by watering or ion and permanent control	Creating or altering of D pathways along p which existing te poor quality du groundwater can gr migrate	sturbing or mobilising existing Creating or alterir oor quality groundwater by pathways along w imporary dewatering or existing poor qual epressurisation and permanent groundwater can roundwater control migrate	ng of altering or Creating or altering of altering of altering of altering of thich pathways along pathways along which existing poor quality poor quality groundwater can migrate migrate
Chemic Intrusic	al Saline Ins Good G	Good by 2015 Good bi 2015 Good bi 100 Good	Iditional stabilisation d mitigation may be quired due to unstable ound conditions relating dissolution related bsidence. The is a subsidence. The is a subsidence the is possibility that this mobilise poor qua saline water however to scale of works and to scale of works an minor. be minor.	tion and required bund to a could ity, ere due nd on the kely to ito a could ity, ere due to a could ity, ere due to could ity, ere due to could ity, ere due to could ity, ere due to could ity, saline water however due to could ity, ere due to could ity, saline water itis a lossibility to the ere due to saline vater itis a lossibility to the ere due to saline vater itis a lossibility to the ere due to saline vater itis a lossibility to be minor.	stabilisation and may be required stable ground s relating to e. The is a that this could yoor quality, er however due d mitigation the this are likely toAdditional stabilisation and mitigation may be required due to unstable ground conditions relating to dissolution related subsidence. The is a possibility that this could mobilise poor quality, saline water however due to scale of works and effects of this are likely toAdditional stabilis mitigation may be quality, saline water however due effects of this are likely to be minor.Additional stabilis mitigation and mitigation related subsidence. The is a possibility that this could mobilise poor quality, saline water however due of works and embedded mitigation the effects of this are likely to be miAdditional stabilis mitigation related subsidence. The is a possibility that thi mobilise poor quality, saline water however due of works and embedded mitigation the effects of this are likely to be mi	ation and required ound to a s could lity, saline e to scale edded ects of this nor.	Additional stabilisation and mitigation may be required due to unstable ground conditions relating to dissolution related subsidence. The is a possibility that this could mobilise poor quality, s also salso saline water however due to scale of works and embedded mitigation the effects of this are likely to be minor. Additional stabilisation mitigation may be req due to unstable ground conditions relating dissolution related 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.	an and quired and and and and and and and and and an	Additional stabilisation and mitigation may be required due to unstable ground conditions relating to dissolution related subsidence. The is a possibility that this could mobilise poor quality, saline water however due to scale of works and embedded mitigatio the effects of this are likely to be minor.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/per manent groundwater control required.	ble to .e. no or permane tter ired.	o measurable ange due to bedded mitigation e. no or minimal watering/permane groundwater ntrol required. No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permane nt groundwater control required. Hore is works fr conduit groundwiter moverm dewatering/permane nt groundwater control required. Hore is works fr conduit expecte Northw Membe for grou moverm constru leading dissolut expecte Northw Membe for grou moverm constru dewatering/permane nt groundwater control required. Hore is works fr constru aquifer measur deploye to mitig geotech subside	a risk of piling orming aThere is a risk of pilin works forming a cond works forming a cond works forming a cond for groundwaterforworks forming a cond works forming a cond movement during construction, possibly construction, possibly construction, as piles are dissolution, as piles are during construction, active aquifer protect protection measures will be deployed during piling to mitigate the geotechnical risk of subsidence, in addition pplication of to draft CoCP.	 a control required. a control required. a control required. 	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	Asurable change embedded embedded embedded ion - i.e. no or mitigation - i.e. al no or minimal ering/permanent dewatering/permater control anent ed. groundwater control required	The temporary dewatering will disrupt groundwater levels but will have no measurable changet on saline intrusions.	The temporary dewatering will disrupt groundwater flow paths but will have no measurable changet on saline intrusions.	r dewatering will lwater levels but will rrable changet on ns.	IS NO	ie temporary dewatering will disrupt oundwater levels but will have no easurable changet on saline trusions.	No measurable change due to embedded mitigation - i.e. have no or minimal nget dewatering/perm s. anent groundwater control required.
Chemic Drinkin Protect (DrWPA	al g Water ed Areas s)	Good by 2015 Good MA	one in community area None in communit A02. MA02.	y area None in community area None in co MA02. MA02.	ommunity area None in community area None in communi MA02. MA02.	ty area None in community area None in community Area None in community	v area MA02. None in community area None in community ar MA02. MA02.	Irea None in community area MA02.	None in community area MA02.	None in community area MA02.None in community area MA02.None in community area area MA02.	Imunity No	one in community None in community None in area MA02.	a community None in community A02. area MA02.	None in community area MA03.	None in community None area MA03. MA03.	in community area None in community area MA03.	None in community area MA03. Hoo Green viaduct and	None in community area MA03. Hoo Green viaduct and	None in community area MA03. MA03.	N	one in community area MA03. None in community MA03.	y area None in community area MA03.
Chemic Ground Depend Terrest Ecosyst (GWDTE	al water ent Poor rial ems s) Test	Good by 2027 Poor clo hy	one present within or in ose proximity down- draulic gradient of ROI.	n or in vn- of ROI. None present within or in close proximity down- hydraulic gradient of ROI. None present None present None present ROI.	sent within or in None present within or in None present with close proximity down- close proximity down- gradient of ROI. hydraulic gradient of ROI. hydraulic gradient	nin or in None present within or in None present within or in proximity down-proximity down-hyd of ROI. hydraulic gradient of ROI. of ROI.	n or in close None present within or in draulic gradient close proximity down-hydraulic gradient of ROI. None present within o close proximity down-hydraulic gradient of ROI.	or in None present within or i - close proximity down- ROI. hydraulic gradient of RO	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 affect groundwater and surface water quality. Embedded mitigation does not account for such components and therefore closer assessment is required ond construction options are confirmed.	None present within or in close proximity down-hydraulic gradient of ROI. Here and the second secon	nt within No roximity or ulic do ROI. gra	one present within in close proximity wn-hydraulic adient of ROI.	resent within or proximity ydraulic t of ROI.	Arley and Waterless Brook Corridor LWS is intersected by the Proposed Scheme, therefore, 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.	None present hydrau within or in close propo proximity down- hydraulic gradient measu of ROI. anticip scale c embed	bood GWDTE is d 160m down- lic gradient of the sed scheme nent. However, no rable changes ated due to the f works and ided mitigation. Belt Wood GWDTE is locater 160m down- hydraulic gradient of the proposed scheme component. However, no measurable changes anticipated due to the scale of works and embedded mitigation.	ROI are located within the Rostherne Mere Ramsar site/SSSI topographic catchment. There is the potential to alter groundwater and surface water quality during construction. This will be mitigated through the draft CoCP. There is the potential to alter groundwater quality to Belt Wood LWS and SBI during construction. This will be mitigated through the implementation of the draft CoCP.	Rol are located within the Rostherne Mere Ramsar site/SSSI topographic catchment. There is the potential to alter groundwater and surface water quality during construction. This will be mitigated through the draft CoCP. There is the potential to alter groundwater quality to Belt Wood LWS and SBI during construction. This will be mitigated through the implementation of the draft CoCP.	within or in close None present within or ir n-hydraulic gradient of close proximity down- hydraulic gradient of ROI	n N pi Ri	one present within or in close oximity down-hydraulic gradient of DI. None present withi close proximity dow hydraulic gradient of	None present n or in within or in close vn- proximity down- of ROI. hydraulic gradient of ROI.
Chemic Depend Surface Body	al ent Poor G Water	Good by 2027 Poor Clo hy	one present within or in ose proximity down- draulic gradient of ROI. hydraulic gradient	n or in wn- of ROI. None present within or in close proximity down- hydraulic gradient of ROI.	sent within or in None present within or in None present with imity down- close proximity down- close proximity do gradient of ROI. hydraulic gradient of ROI. hydraulic gradient	nin or in wn- of ROI. Borrow pit restoration strategy adverse impacts on Tributary of River Wheelock 5. Wheelock 5.	ion strategy will n adverse y of River hydraulic gradient of ROI. None present within o close proximity down- hydraulic gradient of ROI.	or in None present within or i - close proximity down- ROI. hydraulic gradient of RO	It is likely that the River Dane receives some groundwater flow from the alluvium and river terrac deposits. If additional constructio options are required to mitigate and stabilise the unstable ground conditions there is potential to affect groundwater and surface water quality. Embedded mitigation does not account for such components and therefore closer assessment is required on construction options are confirmed.	Due to the location and minor extent of the piers within the much larger area of the aquifers, no measurable change on groundwater flow pathways to the Puddinglake Brook expected.	osed to d Brook y of Gad ne ects may ed but likely to rbody o min sta o min sta o min sta o min likely to min be the min be likely to min sta o min min be the min be the min be the min be the min be the min be the min be the min be the min be the min be the min be the min be the min be the min be the min be the min be the the the the the the the the the th	borks proposed to ersect Wade book. Some anticipated but pact waterbody intugation. Works proposed to intersect Wade Brook. Some Brook. So	resent within or proximity ydraulic t of ROI. Works proposed to intersect Tributary of Peover Eye and Peove Eye. Some localised effects may be anticipated but these are unlikely to impact waterbody status due embedded mitigation	Waterless/Arley Brook is intersected by the Proposed Scheme. There is the r potential to alter groundwater and surface water quality during construction near to this site. This to will be mitigated through the implementation of the draft CoCP.	Tributary of Tabley Brook 4 is intersected by The te works. However, no measurable affect , changes anticipated quality due to scale of Tabley works and this is embedded and te mitigation - i.e. no be mit or minimal impler dewatering/perman draft C ent groundwater control required.	mporary works ne potential to groundwater to Tributary of Brook 9, although ikely to be localised mporary. This will gated through the nentation of the oCP.	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.	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.	The temporary works have the potential to affect groundwater taries of Millington gh this is likely to be emporary. This will be ugh the n of the draft CoCP. The temporary works have 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 dr CoCP.	/e Th po tc al ar th di	e temporary works have the itential to affect groundwater quality tributaries of Millington Clough, though this is likely to be localised id temporary. This will be mitigated rough the implementation of the raft CoCP.	ks co quality lington is is d and l be the the
Genera Chemic	al Test	Good by 2027 Poor co co co co co co co co co co co co co c	me localised effects ay be anticipated but ese are unlikely to pact waterbody status. heedded mitigation res not account for ese potential nstruction options with gards to the foundation mponent of this scheme mponent therefore pser assessment is quired once nstruction options are nfirmed.	Some localised effects Some local ects may may be anticipated but Some local these may be anticipated but Some local impact waterbody are unlikely be anticipated act impact waterbody are unlikely on does mitigation does not Embedded status. Embedded waterbody accout ion potential construction potential of accou ion potential construction potential of accou ion potential construction potential of accou ion potential construction potions with regards to options with regards to options with reserver assessment ired therefore closer assessment options assessment is required once consider once construction are confirmed. are confirmed.	lised effects may ated but these be anticipated but unlikely to impact unlikely to impact unlikel	Texts may these areNo measurable change due to scale and shallow depths of borrow pits relative to groundwater body. Implementation of embedded mitigation measures also assumed.No measurable charg scale and shallow depths of borrow pits relative to groundwater body. Implementation of embedded mitigation measures also assumed.No measurable charg scale and shallow depths of borrow pits relative groundwater body. Implementation of embedded mitigation measures also assumed.	nge due to epths of to embedded s also s also enticipated but these are unlikely to impact waterbody status. Embedded mitigation does not account for these potential construction options with regards to the foundation component of this scheme component therefore closer assessment is required once construction options are confirmed.	s may ese indoes b does indoes b come localised effects may b e anticipated but b e restricted to the superficial deposits, pending further investigations. ed tions	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 o dewatering/per manent groundwater control required.	ed be but these to rbody bot these are unlikely to impact waterbody status.	me localised fects may be ticipated but these e unlikely to impact terbody status e to embedded tigation.	Isurable change embedded on - i.e. no or l tring/permanent d.	Some localised effects may be scale of works but impact waterbody ed status due to embedded status.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	Asurable change embedded ion - i.e. no or al ering/permanent iwater control ed. d	No measurable change due to embedded mitigation - i.e. no or minimal n dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	e change due to igation - i.e. no or ering/permanent ontrol required. entrol required.	ue Some localised construction effects may be anticipated but these are unlikely to impact waterbody status.	o measurable change due to nbedded mitigation - i.e. no or inimal dewatering/permanent oundwater control required. No measurable cha due to embedded mitigation - i.e. no or minimal dewatering/perma groundwater contr	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/perm anent groundwater control required.

Table A22: Weaver and Dane Quaternary Sand and Gravel Aquifers

Weaver and Dane (GB1202G991700)	Quaternary Sand (Secondary aquife	and Grav r (undiffe	el Aquifers rentiated))		Detailed Impa	ct Assessment
EA Management Catchment:	North West GW	Sche	eme compo	nent (ID):	GB41202G99	91700-CR-115
Overall Status	Poor	Scher	ne compon	ient type:	Cutting with ref	aining structure
(2015):		Schem	e compone	ent name:	Hoo Green South c	utting retaining wall
Overall Status Objective:	Good by 2027	Impa	ct type fron coi	n scheme mponent:	-	
WFD Status Element	WFD Quality Element	2015 RBMP Cycle 2 Status	2015 RBMP Cycle 2 Status Objective	2019 Status	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
	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	Some localised damming effects may be anticipated but not likely to be significant



Ch In	nemical Saline trusions	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.
Ch Dr Pr (D	nemical rinking Water rotected Areas PrWPAs)	Good	Good by 2015	Good	None in community area MA03.	None in community area MA03.
Ch Gr De Ec (G	nemical roundwater ependent errestrial cosystems WDTEs) 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.	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.
Ch De Su Bo	nemical ependent urface Water ody	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.
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Table A22: Weaver and Dane Quaternary Sand a (GB1202G991700) (Secondary aquiferEA Management Catchment:North West GWOverall Status (2015):Poor	nary Sand and Gravel Aqui nd Gravel Aquifers (undifferentiated)) Scheme component (I Scheme component ty Scheme component nar	Jifers (GB1202G991700) detailed impact assessme Detailed Impact Assessment (ID): GB41202G991700-CR-116 ype: Cutting with retaining structure Hoo Green South cutting retaining wa	nt - effects on current status Detailed In GB41202 Ret II	ripact Assessment G991700-RT-117 taining Wall een (box) tunnel	Detailed Imp GB41202G Cutting with r Hoo Green North	npact Assessment G991700-CR-119 retaining structure h cutting retaining wall	Detailed In GB41202 Cutting with Hoo Green Nor	npact Assessment 2G991700-CR-120 n retaining structure th cutting retaining wall	GI	iled Impact Assessment 341202G991700-C-121 Cutting po Green North cutting	Detailed Impact Assessment GB41202G991700-V 123 Viaduct Foundation Peacock Lane viadu	Detailed Impact Assessment F- GB41202G991700-VF-126 s Viaduct Foundations ct Agden Brook viaduct	Detailed Impact Assessment GB41202G991700-C-127 Cutting Millington cutting	Detailed Impact Assessme GB41202G991700-C-128 Cutting Millington North cutting	Detailed Impact Assessment8GB41202G991700-OF- 1290Overbridge FoundationsgMillington Footpath 7/4 accommodation	Detailed Impact Assessment GB41202G991700-OF-130 Overbridge Foundations A5556 Chester Road overbridge	Detailed Impact / GB41202G9917 Cutting with retain Rostherne cutting ret	t Assessment 700-CR-131 ining structure etaining wall west	Detailed Impact Assessment GB41202G991700-C-132 Cutting Rostherne cutting	Detailed Impact Assessment GB41202G991700-C-133 Cutting Rostherne North cutting	t Detailed Impact Assessment GB41202G991700- OF-134 Overbridge Foundations Yarwood Heath Farm accommodation	Detailed Impact / GB41202G9917 Cutting with retain Rostherne cutting ret	Assessment 700-CR-136 ning structure taining wall east	Detailed Imp GB41202G Retai Rostherne Ea	Pact Assessment 991700-RT-137 ning Wall ast box structure	Detailed Impact Assessment E GB41202G991700-VF-139 GB41 Viaduct Foundations Via Blackburn's Brook North viaduct Black	Detailed Impact Assessment Detailed 202G991700-VF-140 G aduct Foundations Ashley	ailed Impact Assessment B41202G991700-RT-143 Retaining Wall
Overall Status Objective: Good by 2027 WFD Status Element WFD Quality Element	Impact type from sche compone 2015 RBMP Cycle 2 Status Objective	eme ent: Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	bundwater ction in tributions tributions bundwater ction in tributions tribut	er er "Damming" of groundwater flow and reduction in groundwater contributions t	vering of groundwater evels and potential uction in groundwater ntributions to surface "Da iter bodies, GWDTE or undwater abstractions by temporary watering/permanent roundwater control	Damming" of groundwater flow an 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	"Damming" of groundwater flow reduction in groundwater contributions	Lowering of groundwater and potential reduction groundwater contributio surface water bodies, GW groundwater abstraction temporary dewatering/per groundwater contro	levels n in ns to "Damming" of groundwater DTE or reduction in groundwa ns by contributions manent I	"Damming" of flow and groundwater flow ater and reduction in groundwater contributions	"Damming" of groundwater flow and reduction in groundwater contributions	Lowering of groundwater levels potential reduction in groundwa contributions to surface wate bodies, GWDTE or groundwate abstractions by temporary dewatering/permanent groundw control	and ater er er er vater vater vater er vater vater and bevels and potential reduct in groundwater contributi to surface water bodies GWDTE or groundwater abstractions by tempora dewatering/permanent groundwater control	er tions tions es, er ary nt	"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 b temporary dewatering/permanent groundwater control	d r "Damming" of groundwate ss, flow and reduction in groundwater contributions	Lowering of groundwater levels and pote reduction in groundwater contributions surface water bodies, GWDTE or groundw abstractions by temporary dewatering/permanent groundwater cor	ntial to ater trol Lowering of groundwater levels potential reduction in groundwater contributions to surface water bo GWDTE or groundwater abstraction temporary dewatering/perman groundwater control	e and ater odies, ons by ient contributions	Lowering of groundwater evels and potential reduction n groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	۲ "Damming" of groundwater flow and reduction in groundwater contributions g	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	"Damming" of groundwater flow and grou reduction in groundwater contributions	"Damming" of groundwater l "Damming" of groundwater l undwater flow and contributions f groundwater groundw contributions abstractio tempora dewatering/pe groundwater	g of evels and uction in "ater "Damming" of to surface groundwater flow and GWDTE or reduction in vater groundwater ons by contributions rary rermanent er control
Quantitative Saline Intrusions	Good Good by 2015 Goo	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.	The temporary dewaterin 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 leng of the Hoo Green cuttings thereby significantly reducing the requirement for dewatering.	g Permanent secant piled mea retaining walls are to be built salir along the entire length of the Perr Hoo Green cuttings and no reta intrusion is expected. of th ther redu	temporary dewatering disrupt groundwater ls but will have no surable change on le intrusions. nanent secant piled ining walls are to be along the entire length is e Hoo Green cuttings eby significantly icing the requirement lewatering.	ermanent secant piled retaining walls re to be built along the entire length c re Hoo Green cuttings and no reasureable change in saline intrusior expected.	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.	Permanent secant piled retaining v are to be built along the entire leng the Hoo Green cuttings and no measureable change in saline intru is expected.	The temporary dewatering wi disrupt groundwater levels bu have no measurable change o th of intrusions. Permanent secant piled retair walls are to be built along the length of the Hoo Green cutti thereby significantly reducing requirement for dewatering.	Il It will on saline are to be built along the entire ning entire ngs is expected. the	ing walls length of intrusion intrusion intrusion intrusion intrusion intrusion intrusion intrusion intrusion intrusion intrusion	ge y, v, ks shallow depth of works and embedded mitigatior	Localised adverse effect when bala against embedded mitigation. Cutti 11m deep and extends for 1462m a intersects Agden Brook. Dewatering may be required due to depth of groundwater and nature of works.	Localised/temporary adverse effect when balanced against ing is embedded mitigation. and Dewatering may be required g to depth of groundwater and nature of works. Therefore lowering in groundwater leve anticipated.	e No measurable change due to scale of works due to scale of works relative to water body, d shallow depth of works and embedded els mitigation.	No measurable change due to scale of works relative to water body, shallow depth of works and embedded mitigation.	No measurable change to saline intrusions due to scale of works relative to water body scale.	s No measurable change due to scale of works relative to water body, shallow depth of works and embedded mitigation.	No measurable change to saline intrusions due scale of works relative to water body scale.	to No measurable change to saline intrus due to scale of works relative to water scale.	No measurable change due to scale sions of works relative to N body water body, shallow ii depth of works and r embedded mitigation.	o measurable change to saline have to scale of works elative to water body scale. abs	e presence of the cutting will ve no measurable change on line intrusions as this issue is sociated with long-term stractions.	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, shallow depth of works and embedded mitigation.	No measurable change due to scale of works relative to water body, shallow depth of works and embedded mitigation.	easurable change o scale of works /e to water body and dded mitigation.	change ad ho or manent introl No measurable change due to scale of works relative to water body an embedded mitigation.
Quantitative Water Balance	Good Good by 2015 Goo	odThe temporary dewatering will disrupt groundwater levels but will have no measurable change on water balance.Some localised data effects may be ant built along the entire length of the Hoo Green cuttings thereby significantly reducing the requirement for dewatering.	nming icipated scale built along the entire leng of the Hoo Green cuttings thereby significantly reducing the requirement for dewatering.	g Some localised damming effects may be anticipated but not likely to be significant on the waterbody scale : :	temporary dewatering disrupt groundwater ls but will have no surable change on er balance. nanent secant piled ining walls are to be along the entire length the Hoo Green cuttings eby significantly tring the requirement lewatering.	ome localised damming effects may b nticipated but not likely to be gnificant 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.	Some localised damming effects m be anticipated but not likely to be significant on the waterbody scale	The temporary dewatering wi disrupt groundwater levels bu have no measurable change of balance. Permanent secant piled retain walls are to be built along the length of the Hoo Green cutti thereby significantly reducing requirement for dewatering.	II ut will on water Some localised damming effect anticipated but not likely to be significant on the waterbody so the significant on the	ts may be some a surable chan due to embedded mitigation - i.e. no or minimal dewatering/permane groundwater control required.	ge No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	Localised/temporary adverse effect when balanced against embedded mitigation. Cutting is 11m deep and extends for 1462m and intersects Agden Brook. Dewatering may be required due to depth of groundwa and nature of works. Therefore lowering in groundwater levels anticipated which could impact wat balance. Cutting drainage will be discharged back into the local watercourses.	t Localised/temporary adverse effect when balanced against embedded mitigation. Dewatering may be required to depth of groundwater and nature of works. Therefore lowering in groundwater leve anticipated which could impa water balance. Cutting draina will be discharged back into ti local watercourses.	e a st a 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, shallow depth of works and embedded mitigation.	Localised and temporary adverse effect on water balance due to dewatering during construction.	n No measurable change due to scale of works relative to water body and embedded mitigation	Localised and temporary adverse effect on wat balance due to dewatering during construction	er Localised and temporary adverse effect water balance due to dewatering durin construction.	No measurable change due to embedded L mitigation - i.e. no or a minimal c dewatering/perman c ent groundwater control required.	ocalised and temporary dverse effect on water balance ue to dewatering during onstruction.	e presence of the cutting will ve no measurable change on ater balance as this issue is sociated with long-term istractions.	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, shallow depth of works and embedded mitigation.	No measurable change due to scale of works relative to water body, shallow depth of works and embedded mitigation.	easurable change o scale of works /e to water body and dded mitigation.	change ed no or manent ntrol No measurable change due to scale of works relative to water body an embedded mitigation.
Quantitative Groundwater Dependent Terrestrial Ecosystems (GWDTE) Test	Good Good by 2027 Good	od 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 dewatering zone of influence. 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.	d SBI is a 60m east, adient, of me ttaining tial to atter flow to bley Brook gh Belt cortion of be II e to this e drainage Scheme into a eam of Belt d me of the Proposed Scheme component. The upper reaches of Tributar of Tabley Brook 9, which runs through Belt Wood, are within the potential dewatering zone of influence. This could impact groundwater level 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	a Tributary of Tabley Brook 9 runs through Belt Wood and the upper reaches of this watercourse are within the ROI. A small proportion of groundwater flow may be intercepted that will otherwise discharge to this watercourse. Some drainage from the Proposed Scheme will be discharged into a watercourse upstream of Belt Wood which should compensate for some of the flow lost through the habitat.	neasurable changes as tats are located outside retaining wall.	oo Green viaduct crosses the zone of fluence upgradient of the Rostherne lere Ramsar site/SSSI topographic atchment. Mitigation includes drainag om cuttings extending across and utside the Rostherne Mere catchment umped to recharge trenches. If any roundwater is intercepted by the Hoo reen viaduct, the recharge from enches should compensate for the eduction in groundwater flow. elt Wood LWS and SBI is located utside of the ROI but downgradient of the Proposed Scheme. Therefore, the ructures may intercept baseflow in the groundwater catchment to the abitat. Localised minor impact as roundwater levels in the habitat may e lowered during construction.	No measurable changes as habitats are located outside of the radius of influence of the retaining wall.	Hoo Green viaduct crosses the zon influence upgradient of the Rosthe Mere Ramsar site/SSSI topographic catchment. Mitigation includes dra from cuttings extending across and outside the Rostherne Mere catchr pumped to recharge trenches. If an groundwater is intercepted by the Green viaduct, the recharge from trenches should compensate for th reduction in groundwater flow. Belt Wood LWS and SBI is located outside of the ROI but downgradie the Proposed Scheme. Therefore, f structures may intercept baseflow the groundwater catchment to the habitat. Localised minor impact as groundwater levels in the habitat r be lowered during construction.	e of rne : inage d nent, No measurable changes as ha are located outside of the rad influence of the retaining wall nt of he in nay	Abitats Abitats Belt Wood LWS and SBI is loca outside of the ROI but downgr the Proposed Scheme. Therefor structures may intercept base groundwater as purple to recharge trenches. groundwater is intercepted by Green viaduct, the recharge fr reduction in groundwater flow Belt Wood LWS and SBI is loca outside of the ROI but downgr the Proposed Scheme. Therefor structures may intercept base groundwater catchment to the Localised minor impact as grou levels in the habitat may be low during construction.	zone of stherne aphic adrainage and ttchment, If any the Hoo or the dom or the ted adient of ore, the low in the habitat. undwater wered	or None present within or in close proximity down- hydraulic gradient of ROI.	The zone of influence of the Milling cutting includes parts of Yarwood Heath Covert and Rostherne Mere. Groundwater could be lowered with the ROI and, hence, would reduce groundwater contribution to the habitats and impact on groundwate spring flows into Rostherne Mere Ramsar site/SSSI. Although the potential impacts on water levels an small, mitigation will include draina being pumped to recharge trenches above Rostherne Mere from an are the cuttings extending a considerate distance outside the Rostherne Mere catchment.	thin The zone of influence of the Millington North cutting incluparts of Rostherne Mere. Groundwater in this sub-catchment area could be intercepted within the zone o influence and, hence, would discharge to the drainage in t cuttings. Impact on groundwaters spring flows into Rostherne M Ramsar site/SSSI. Although th potential impacts on water leare small, mitigation will includrainage being pumped to recharge trenches above Rostherne Mere from an area the cuttings extending a considerable distance outside Rostherne Mere catchment.	udes of the vater Mere evels lude a of de the	The A556 Chester Road overbridge will be constructed a a tangent pile wall which has potential to impact on groundwater flow pathways. No measurable change to groundwater flow as the tangen pile wall is expected to impact a minor extent in comparison to the areal extent of the superficial and bedrock aquifer. The overbridge may intercept some of the groundwater flow to Rostherne Mere. However, giver the main inflow to the habitat is from Rostherne Brook no meaurable change on groundwater flow from the overbridge is expected.	The zone of influence of the retaining wall includes parts of Rostherne Mere. Groundwater in this sub-catchment area co be intercepted within the zone of influence and, hence, would discharge to the drainag the cuttings. Impact on groundwater spring flows into Rostherne Mere Ramsar site/SSS Although the potential impacts on water lev are small, mitigation will include drainage being pumped to recharge trenches above Rostherne Mere from an area of the cutting extending a considerable distance outside to Rostherne Mere catchment. The timing of to recharge may be different to the timing of natural groundwater discharge. However, the additional discharge from the extended are of the cuttings would mean that the total discharge area.	The zone of influence of the retaining wall includes parts of Rostherne Mere. Groundwater this sub-catchment area could be intercepted within the zone influence and, hence, would SI. discharge to the drainage in th cuttings. Impact on groundwat spring flows into Rostherne Me Ramsar site/SSSI. Although the potential impacts on groundwater flow are small, mitigation will include drainage being pumped to recharge the trenches above Rostherne Mer from an area of the cuttings extending a considerable distance outside the Rostherne Mere catchment.	in The zone of influence of the retaining wall inclu- parts of Rostherne Mere. Groundwater in this se catchment area could be intercepted within the of influence and, hence, would discharge to the drainage in the cuttings. Impact on groundwater spring flows into Rostherne Mere Ramsar site/S Although the potential impacts on water levels small, mitigation will include drainage being put to recharge trenches above Rostherne Mere from area of the cuttings extending a considerable do outside the Rostherne Mere catchment. The tilt the recharge may be different to the timing of in groundwater discharge. However, the additional discharge from the extended area of the cutting would mean that the total discharge exceeds the natural groundwater discharge area.	des ub- includes parts of Rostherne Mere. Groundwater in this sub-catchment are be intercepted within the zone of influe and, hence, would discharge to the dra in the cuttings. Impact on groundwater flows into Rostherne Mere Ramsar site Although the potential impacts on wate are small, mitigation will include draina being pumped to recharge trenches at Rostherne Mere from an area of the cu extending a considerable distance outs Rostherne Mere catchment. The timing recharge may be different to the timing natural groundwater discharge. Howev additional discharge from the extende of the cuttings would mean that the to discharge area.	wall rea could ence ainage r spring 2/SSSI. ter levels age bove utings side the g of the ig of ver, the ad area otal water	he zone of influence of the ostherne cutting includes parts f Rostherne Mere. roundwater in this sub- atchment area could be thercepted within the zone of influence and, hence, would ischarge to the drainage in the uttings. Impact on roundwater spring flows into ostherne Mere Ramsar te/SSSI. Although the potential npacts on water levels are mall, mitigation will include rainage being pumped to echarge trenches above ostherne Mere from an area of the cuttings extending a onsiderable distance outside ne Rostherne Mere catchment.	e zone of influence of the istherne cutting includes parts Rostherne Mere. Groundwater this sub-catchment area could intercepted within the zone of fluence and, hence, would scharge to the drainage in the ttings. Impact on groundwater ring flows into Rostherne Mere msar site/SSSI. Although the tential impacts on boundwater flow are small, tigation will include drainage ing pumped to recharge enches above Rostherne Mere om an area of the cuttings tending a considerable stance outside the Rostherne ere catchment.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required. t	Minor localised impact as there potential for piling from Rostherne East box structure and Blackburn's Brook North viaduct o affect the flow path of groundwater to Hancock's Bank South and North due to changes o conditions in superficial deposits and the upper section of he bedrock.	Minor localised impact on Hancock's Bank South as there is potential for piling from Blackburn's Brook North viaduct to affect the supply and flow path of groundwater to Hancock's Bank South.	localised impact on ock's Bank South as is potential for piling Blackburn's Brook viaduct to affect the y and flow path of dwater to Hancock's South.	ithin or in down- ent of ROI. hydraulic gradient of ROI.
Quantitative Dependent Surface Water Body	Good Good by 2015 Good	od No measurable change due to scale of works relative to water body, shallow depth of works and embedded mitigation. Tributary of Tabley and 9. Localised ef anticipated due to works and embedded	ture has rupt to the Brook 8 fects scale of led ture has rupt to the brook 8 fects scale of led to the to the to the the possible due to dewaterin resulting in a slight reduction in baseflow to the northern branch of Tributary of Tabley Brook 9.	n Likely localised impacts on surface water flows in Likely localised impacts on surface water flows in 9 Tributary of Tabley Brook 9 possible due to interception resulting in a slight of Treduction in baseflow to the structures resulting in a slight of Tributary of Tabley Brook 9. of the northern branch of Tributary of Tabley Brook 9. 0.	y localised impacts on ace water flows in Like utary of Tabley Brook 9 wat sible due to dewatering 9 p lting in a slight gro iction in baseflow to bel of the northern branch slig tibutary of Tabley Brook the scharge from cutting Tab nage network will help dra laintain flows in the flow ercourse.	kely localised impacts on surface ater flows in Tributary of Tabley Broo possible due to interception of roundwater flow to the watercourse b elow ground structures resulting in a ight reduction in baseflow to 1km of he northern branch of Tributary of abley Brook 9. Discharge from cutting rainage network will help to maintain ows in the watercourse.	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. Discharge from cutting drainage network will help to maintain flows in the watercourse.	Likely localised impacts on surface water flows in Tributary of Tabley B 9 possible due to interception of groundwater flow to the watercour below ground structures resulting slight reduction in baseflow to 1km the northern branch of Tributary o Tabley Brook 9. Discharge from cu drainage network will help to main flows in the watercourse.	Brook Brook Likely localised impacts on su water flows in Tributary of Ta Brook 9 possible due to dewa resulting in a slight reduction baseflow to 1km of the northe branch of Tributary of Tabley 9. Discharge from cutting drai network will help to maintain the watercourse.	rface bley tering ern Brook nage flows in Brook in age flows in Brook in age flows in flows in Brook in age flows in flows in Brook in age flows in flows in	Below ground structures of Peacock Lane viaduct have th potential to obstruct groundwater flow towards Millington Clough. Groundwate intercepted by the viaduct would be discharged into Tributary of Millington Clough 1, an upstrea n cutting naintain Clough, via the drainage system. Therefore, no measurable change t the baseflow to Millington Clough expected.	Agden Brook is present within the immediate vicinity of the Agden Brook viaduct. There is the potential for adverse impacts on baseflow to parts of Agden Brook. Any below ground structures have the potential to obstruct groundwater flow towards the watercourse. However, any groundwater intercepted by the viaduct would still discharge into Agden Brook via the drainage system of the Proposed Scheme both upstream and downstream of the route. As a result, no measurable change on Agden Brook expected.	Groundwater flow into Agden Broo and Tributary of River Bollin 10 and may be a reduced due to intercepti of baseflow. This would be mitigate the drainage system of the Proposed Scheme which would discharge wat 80m downstream of the Proposed Scheme so there would be a minor tempory reduction in groundwater to this stretch of Agden Brook. Tributary of River Bollin 11 is suppor by a low value land drainage outfal is located within the ROI. Tributary River Bollin 10 is located 50m outsi of the ROI. As water intercepted by Proposed Scheme will be diverted to Blackburn's Brook, the upper reach of these watercourses may receive reduced baseflow resulting in locali impact on flow to Tributary of Bollin Brook 10 and 11.	ok d 111 ion ed by ed ter flow flow flow flow flow flow flow flow	utary y be on of rever he bosed Bollin ue None present within or in close proximity down-hydraulic gradient of ROI. of d by e bk, two hinor eflow.	The A556 Chester Road overbridge will be constructed a a tangent pile wall which has potential to impact on groundwater flow to Tributary o River Bollin 11. The tangent pile wall is expected to impact a minor extent in comparison to the areal extent of the superficial and bedrock aquifers and thus no measurable change is expected.	s Lowering of groundwater levels during construction could reduce groundwater contributions to Tributary of River Bollin 11.	Groundwater flow into Tributa of River Bollin 11 may be a reduced due to interception of baseflow by the cutting howeve this would be mitigated by the drainage system of the Propos Scheme. Tributary of River Boll 11 is supported by a low value land drainage outfall and is located within the ROI. Tributar of River Bollin 10 is located approximately 50m outside of the ROI. As water intercepted b the Proposed Scheme will be diverted to Blackburn's Brook, the upper reaches of these two watercourses may receive reduced baseflow which is considered to be a minor impa on flow.	 Birkin Brook may receive reduced groundwater discharge due to the lowering of groundwater l during dewatering for construction of the Rosth cutting which would otherwise make a minor contribution to the baseflow to Birkin Brook. Groundwater intercepted by the cutting will be diverted to Rostherne Mere and/or Blackburn's via the drainage system of the Proposed Schen therefore, no measurable change on the basefl Birkin Brook and Blackburn's Brook is expected ct 	evels herne None present within or in close proxim down-hydraulic gradient of ROI.	None present within control of ROI.	irkin Brook may receive educed groundwater discharge ue to the lowering of roundwater levels during ewatering for construction of ne Rostherne cutting which rould otherwise make a minor portribution to the baseflow to irkin Brook. Groundwater ditercepted by the cutting will e diverted to Rostherne Mere nd/or Blackburn's Brook via the drainage system of the roposed Scheme and herefore, no measurable mange on the baseflow of irkin Brook and Blackburn's rook is expected.	rkin Brook may receive reduced oundwater discharge due to e lowering of groundwater vels during dewatering for nstruction of the Rostherne tting which would otherwise ake a minor contribution to the seflow to Birkin Brook. oundwater intercepted by the tting will be diverted to ostherne Mere and/or ackburn's Brook via the ainage system of the Proposed heme and therefore, no easurable change on the seflow of Birkin Brook and ackburn's Brook is expected.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	Birkin Brook and Blackburn's Brook may receive reduced paseflow due to the interception of groundwater by the Rostherne East box structure that would otherwise make a minor contribution to the baseflow of hese watercourses. Groundwater ntercepted by the box structure will be diverted into Blackburn's Brook by the drainage system of he Proposed Scheme, thereby mitigating the impact of groundwater interception. Blackburn's Brook is an upstream ributary of Birkin Brook and herefore there will be no measurable change to the paseflow of Birkin Brook and Blackburn's Brook.	There is the potential for minor adverse impacts on baseflow to Blackburn's Brook and Birkin Brook. These watercourses are crossed by the Proposed Scheme and any below ground structures have ground structures have groundwater flow towards groundwater flow towards be intercepted by the be intercep	is the potential for radverse impacts on low to Blackburn's and Birkin Brook. watercourses are ded by the Proposed and any below dot structures have retaining wall. otential to obstruct divater flow towards atercourses. ver, groundwater will ercepted by the age system for the soed Scheme. No urable changes tted as the soed Scheme. burn's Brook will be arged upstream of coposed Scheme. burn's Brook will be arged upstream of coposed Scheme. diversions of the soed Scheme. coposed Scheme. diversions of the soed Scheme. diversions of the soed Scheme. coposed Scheme. diversions of the soed Scheme. diversions of the soeseflow.	I for mpacts on els in utary of uring he the the entribution retaining narge into n tributary, kin Brook 1, e Proposed sult, the particularly kin Brook 4, e reduced by the retaining wall would discharge into the downstream tributary Tributary of Birkin Brook 1, via the drainage system and watercourse els in utary of Birkin Brook 4, 1, via the drainage system and watercourse els in vorticularly kin Brook 4, e reduced by the retaining wall would discharge into the downstream tributary Tributary of Birkin Brook 1, via the drainage system and watercourse els in vorticularly kin Brook 4, e reduced by the proposed Scheme. As a result, the watercourses, particularly Tributary of Birkin Brook 4, may experience reduced baseflow.
		Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	ng of /hich lity migrate // Control // Control // Control // Disturbing or mobilising existing poor quality groundwater by temporary dewatering of depressurisation and permanent groundwate	Creating or altering of pathways along which existing poor quality groundwater can migrate con	urbing or mobilising ting poor quality indwater by Cre porary dewatering or alo ressurisation and gro nanent groundwater trol	reating or altering of pathways ong which existing poor quality roundwater 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 qualit groundwater can migrate	Disturbing or mobilising exi poor quality groundwater b y temporary dewatering or depressurisation and permo groundwater control	isting y Creating or altering of pathy along which existing poor qu anent groundwater can migrate	Creating or altering vays of pathways along ality which existing poor quality groundwate can migrate	Creating or altering of pathways along which existing poor quality r groundwater can migrate	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 t depressurisation and permanent groundwater control	Creating or altering of pathways along which existing poor quality groundwater can migrate	Creating or altering of pathways along which existin; poor quality groundwater can migrate	Disturbing or mobilising existing poor g quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of pathways along which existi poor quality groundwater ca migrate	Disturbing or mobilising existing poor qualit ng groundwater by temporary dewatering or n depressurisation and permanent groundwa control	ry Disturbing or mobilising existing po quality groundwater by temporary ter dewatering or depressurisation and permanent groundwater control	Creating or E altering of e pathways along g which existing c poor quality c groundwater can p migrate c	isturbing or mobilising xisting poor quality roundwater by temporary ewatering or epressurisation and ermanent groundwater ontrol	eating or altering of e thways along which existing for quality groundwater can igrate p c	Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or altering of Dathways along which existing Door quality groundwater can nigrate	Creating or altering of Creat pathways along which pathw existing poor quality existi groundwater can grour migrate migra	Disturbing or n existing poor q ways along which ing poor quality ndwater can ate control	iobilising ualityCreating or altering of pathways along which existing poor quality ation and pundwaterundwatermigrate
Chemical Saline Intrusions	Good Good by 2015 Goo	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	ange due to on - i.e. no nent ol the zone of influence is in place.	Temporary lowering of groundwater levels is unlikely to impact on drawing in of poor quality water. Mitigation to reduce the zone of influence is in place.	porary lowering of indwater levels is kely to impact on ving in of poor quality er. Mitigation to reduce cone of influence is in e.	emporary lowering of groundwater vels is unlikely to impact on drawing i poor quality water. Mitigation to educe the zone of influence is in place	Temporary lowering of groundwater levels is unlikely to impact on drawing in of poor quality water. Mitigation to reduce the zone of influence is in place.	Temporary lowering of groundwate levels is unlikely to impact on draw in of poor quality water. Mitigation reduce the zone of influence is in p	er levels is unlikely to impact on in of poor quality water. Mitig reduce the zone of influence i place.	dwater drawing ation to is in Temporary lowering of ground levels is unlikely to impact on o of poor quality water. Mitigatio reduce the zone of influence is	water drawing in in to in place. No measurable changes due to embedded mitigation i.e. no or minimal dewatering/permane groundwater control required.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	Localised/temporary adverse effect when balanced against embedded mitigation. Cutting is 11m deep and extends for 1462m and intersects Agden Brook. Dewatering may be required due to depth of groundwa and nature of works. Therefore lowering in groundwater levels anticipated.	t groundwater levels within the glacial till and bedrock are at ground level and that groundwater flow within the glacial till may be affected by cutting. Application of the dra CoCP will ensure that materia and fluids used during construction are managed so there is no significant adverse effect on groundwater quality	he t 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.	No measurable change to saline intrusions due to scale of works relative to water body scale.	s No measurable change to salin dy intrusions due to scale of work relative to water body scale.	No measurable change to saline intrusions due scale of works relative to water body scale.	No measurable changes due to embed to mitigation - i.e. no or minimal dewatering/permanent groundwater c required.	No measurable changes due to dded embedded N mitigation - i.e. no or e control minimal r dewatering/perman g ent groundwater control required.	o measurable changes due to No mbedded mitigation - i.e. no or em ninimal dewatering/permanent mir roundwater control required. gro	o measurable changes due to nbedded mitigation - i.e. no or i. nimal dewatering/permanent oundwater control required. re	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	t has been assumed that groundwater levels within the glacial till and bedrock are at ground level and that groundwater flow within the glacial till may be affected by the cutting. Application of the draft CoCP and best practice construction methods will ensure new pathways are not created.	No measurable changes No m due to embedded due to mitigation - i.e. no or mitiga minimal minim dewatering/permanent dewat groundwater control groun required. requir	easurable changes be embedded due to embedded due to embedded ation - i.e. no or mitigation - i.e. r nal minimal tering/permanent dewatering/perr red. required.	changes No measurable changes ed due to embedded no or mitigation - i.e. no or minimal manent dewatering/permanent introl groundwater control required.
Chemical Drinking Water Protected Areas (DrWPAs) Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test Chemical	Good Good by 2015 Good Poor Good by 2015 Poor	odNone in community area MA03.None in communi MA03.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.Belt Wood GWDTE 160m down-hydra gradient of the proposed scheme component. However, no measurable change anticipated due to the scale of works and embedded mitigation.	ty area None in community area MA03. Hoo Green viaduct and Rd are located within the Rostherne Mere Ramsar site/SSSI topographic catchment. There is the potential to alter groundwater and surface water quality during tt. construction. This will be mitigated through the dra CoCP. There is the potential to alter groundwater quality to Belt Wood LWS and SB during construction. This will be mitigated through the implementation of the draft CoCP.	DINone in community area MA03.Nor MA0DIHoo Green viaduct and ROI are located within the Rostherne Mere Ramsar site/SSSI topographic catchment. There is the potential to alter groundwater and surface water quality during construction. This will be mitigated through the draft CoCP.Hoo are Rost groundwater quality to Belt Wood LWS and SBI during construction. This will be mitigated through the implementation of the draft CoCP.Hoo are Rost Rost groundwater quality to alter groundwater quality to Belt wood LWS and SBI during construction. This will be mitigated through the implementation of the draft coCP.	Green viaduct and ROI ocated within the herne Mere Ramsar SSSI topographic hment. There is the witi intial to alter indwater and surface er quality during attruction. This will be struction. This will be gated through the draft p. re is the potential to groundwater quality to Wood LWS and SBI ing construction. This will hitigated through the ementation of the draft p.	lone in community area MA03. oo Green viaduct and ROI are located ithin the Rostherne Mere Ramsar te/SSSI topographic catchment. There the potential to alter groundwater nd surface water quality during onstruction. This will be mitigated irough the draft CoCP. here is the potential to alter roundwater quality to Belt Wood LWS nd SBI during construction. This will b itigated through the implementation ⁵ the draft CoCP.	None in community area MA03.Hoo Green viaduct and ROI are located within the Rostherne Mere Ramsar site/SSSI topographic catchment. There is the potential to alter groundwater and surface water quality during construction. This will be mitigated through the draft CoCP. There is the potential to alter groundwater quality to Belt Wood LWS and SBI during construction. This will be mitigated through the implementation of the draft CoCP.	None in community area MA03. Hoo Green viaduct and ROI are loc within the Rostherne Mere Ramsar site/SSSI topographic catchment. T is the potential to alter groundwate and surface water quality during construction. This will be mitigated through the draft CoCP. There is the potential to alter groundwater quality to Belt Wood and SBI during construction. This v mitigated through the implementa of the draft CoCP.	ated Hoo Green viaduct and ROI at located within the Rostherne Ramsar site/SSSI topographic catchment. There is the poter alter groundwater and surfac quality during construction. T be mitigated through the draft There is the potential to alter groundwater quality to Belt W vill be LWS and SBI during construct through implementation of the draft C	03. None in community area MAC 03. None in community area MAC within the community area MAC within the Rostherne Mere Raisite/SSSI topographic catchme ntial to is the potential to alter ground e water surface water quality during his will construction. This will be mitig 't CoCP. through the draft CoCP. There is the potential to alter yood groundwater quality to Belt We ion. and SBI during construction. T ithe mitigated through the implem coCP. of the draft CoCP.	3. None in community area MA03.	or None in community area MA03.	 ^a None in community area MA06. The ROI of the Millington cutting includes parts of Yarwood Heath Co and Rostherne Mere. There is the potential to alter groundwater and surface water quality during construction near to this site. This v be mitigated through the implementation of the draft CoCP. 	None in community area MAG over The zone of influence of the Millington cutting includes pa of Rostherne Mere. There is t potential to alter groundwate and surface water quality dur construction near to this site. This will be mitigated through implementation of the draft CoCP.	A06. None in community area MA06. None present within or in close proximity down-hydraulic gradient of ROI.	None in community area MA06. The A556 Chester Road overbridge will be constructed a a tangent pile wall which has potential to impact on groundwater flow pathways. 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.	None in community area MA06. The zone of influence of the cutting include parts of Rostherne Mere. There is the poter to alter groundwater and surface water qua during construction near to this site. This w be mitigated through the implementation o the draft CoCP.	None in community area MA06 The zone of influence of the cutting includes parts of Rostherne Mere. There is the potential to alter groundwater and surface water quality durir construction near to this site. This will be mitigated through the implementation of the draf CoCP.	5. None in community area MA06. The zone of influence of the cutting includes pa Rostherne Mere. There is the potential to alter groundwater and surface water quality during construction near to this site. This will be mitigation through the implementation of the draft CoCP.	In the second of the community area MA06. Introduction of the draft CoCP.	cludes rface to this chot his cludes rface cludes rface r to this crime cludes rface r to this crime cludes r to this crime to this crime cludes r to this crime to to this crime to this crime to to this crime to to this crime to to this crime to to to this crime to to this crime to to to this crime to to to to	he zone of influence of the utting includes parts of ostherne Mere. There is the otential to alter groundwater nd surface water quality during onstruction near to this site. his will be mitigated through will he implementation of the draft oCP.	e zone of influence of the tting includes parts of stherne Mere. There is the tential to alter groundwater d surface water quality during nstruction near to this site. This II be mitigated through the plementation of the draft iCP.	None in community area MA06. No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	None in community area MA06. The box structure has potential to mpact on groundwater flow bathways to Hancock's Bank South. There is the potential to alter groundwater and surface vater quality during construction hear to this site. This will be nitigated through the mplementation of the draft CoCP.	None in community area MA06. MA06 There is the potential to alter groundwater and surface water quality during construction near during construction near to Hancock's Bank South. to Hai This will be mitigated This w through the throu, implementation of the draft of draft CoCP. draft of	in community area . None in commu MA06. is the potential to groundwater and te water quality g construction near ncock's Bank South. vill be mitigated gh the mentation of the CoCP.	hity area None in community area MA06. None present within or in down- ent of ROI. None present within or ir close proximity down- hydraulic gradient of ROI.
Chemical Dependent Surface Water Body	Poor Good by Poo	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.	rks have ect ty to Brook 8 s is likely to mporary. ed through n of the The temporary works have the potential to affect groundwater quality to tributaries of Tabley Broo although this is likely to b localised and temporary. This will be mitigated through the implementation of the dra CoCP.	e The temporary works have The the potential to affect the groundwater quality to grou tributaries of Tabley Brook, tribu although this is likely to be alth localised and temporary. This loca will be mitigated through the This implementation of the draft thro CoCP. of the tributaries of Tabley Brook, tribut	temporary works have botential to affect The indwater quality to to a itaries of Tabley Brook, trib bough this is likely to be this lised and temporary. ten will be mitigated thru ugh the implementation Cod re draft CoCP.	ne temporary works have the potenti- o affect groundwater quality to ibutaries of Tabley Brook, although iis is likely to be localised and imporary. This will be mitigated irough the implementation of the dra oCP.	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.	The temporary works have the pot to affect groundwater quality to tributaries of Tabley Brook, althoug this is likely to be localised and temporary. This will be mitigated through the implementation of the draft CoCP.	ential The temporary works have th potential to affect groundwat quality to tributaries of Tabley although this is likely to be loo and temporary. This will be m through the implementation o draft CoCP.	e The temporary works have the er to affect groundwater quality t / Brook, tributaries of Tabley Brook, alt this is likely to be localised and itigated temporary. This will be mitigat of the through the implementation o CoCP.	Potential The temporary works have the potential to affect groundwater quality to tributaries hough Millington Clough, although this is likely be localised and temporary. This will the mitigated through the implementation of the draft CoCP.	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.	The temporary construction works the potential to affect groundwater quality to Tributary of River Bollin 1 and 11. This will be mitigated throu the implementation of the draft Co	The temporary construction have works have the potential to a groundwater quality to Tribut 0 of River Bollin 10 and 11. This ugh be mitigated through the 0CP. implementation of the draft CoCP.	affect utary is will gradient of ROI.	The temporary construction works have the potential to affect groundwater quality to Tributary of River Bollin 6. This will be mitigated through the implementation of the draft CoCP.	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 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 temporary construction works have the po to affect groundwater quality to Birkin Brook. T be mitigated through the implementation of th CoCP.	tential his will e draft down-hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	he temporary construction forks have the potential to ffect groundwater quality to irkin Brook. This will be hitigated through the nplementation of the draft oCP.	e temporary construction N orks have the potential to affect to oundwater quality to Birkin i. ook. This will be mitigated d rough the implementation of g e draft CoCP.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	The temporary construction vorks have the potential to affect groundwater quality to Birkin Brook. This will be mitigated hrough the implementation of he draft CoCP.	The temporary The te construction works have constr the potential to affect the po groundwater quality to groun Blackburn's Brook and Blackl Birkin Brook. This will be Birkin mitigated through the mitiga implementation of the imple draft CoCP. draft	emporary The temporary ruction works have construction wo beential to affect the potential to a dwater quality to groundwater qu burn's Brook and Tributary of Birk Brook. This will be This will be mitig the dthrough the through the mentation of the CoCP. draft CoCP.	rks have affect ality to gated of the of the to f to f the to f the to f to f the to f to f
General Chemical Test	Poor Good by 2027 Poo	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	ange due to on - i.e. no nent ol 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.	neasurable changes due nbedded mitigation - i.e. No r minimal em atering/permanent mir ndwater control gro iired.	o measurable changes due to nbedded mitigation - i.e. no or inimal dewatering/permanent roundwater control 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.	No measurable changes due t embedded mitigation - i.e. no minimal dewatering/permane groundwater control required	to No measurable changes due to or embedded mitigation - i.e. no ent minimal dewatering/permanen l. groundwater control required.	Some localised effect may be anticipated b bor these are unlikely to it impact waterbody status due to embedded mitigation	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 unli to impact waterbody status d to embedded mitigation.	be hikely due 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 by these are unlikely to impact waterbody stat due to embedded mitigation.	but http://www.communication.communications.communi	Some localised effects may be anticipated but to are unlikely to impact waterbody status due to embedded mitigation.	hese Some localised effects may be anticipa these are unlikely to impact waterbody due to embedded mitigation.	Ated but y status No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	ome localised effects may be nticipated but these are nlikely to impact waterbody tatus due to embedded nitigation.	e cutting will remove some perficial deposits along the line the cutting, creating a shorter thway for surface water to scharge into the bedrock. This uld cause a change in oundwater chemistry. However, d nsidering the scale of works lative to water body scale and nbedded mitigation, no easurable changes are pected.	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 o impact waterbody status due o embedded mitigation.	No measurable change No mo due to scale of works due to relative to water body relativ scale. scale.	easurable change o scale of works ve to water body No measurable of due to embedde mitigation - i.e. r minimal dewatering/perr groundwater con required.	changes No measurable changes ed due to embedded no or mitigation - i.e. no or minimal manent dewatering/permanent introl groundwater control required.

Weaver and Dane (GB1202G991700)	e Quaternary Sand an (Secondary aquifer (L	nd Gravel Aquifers undifferentiated))	Detailed In	pact Assessment	Detailed Imp	pact Assessment	Detailed Impact Assessment	Detailed Impact Detailed Impact Assessment Assessment	Detailed Impact Assessment	Detailed Impact Assessme	nt Detailed Impact Assessment	Detailed Impact Assessment Det	tailed Impact Assessment	Detailed Impact D Assessment	Detailed Impact C Assessment	Detailed Impact De Assessment	etailed Impact Assessment	Detailed Impact Detaile Assessment Asses	l Impact Detailed	mpact Assessment	Detailed Imp	pact Assessment	Detailed Imp	act Assessment	Detailed Impa	act Assessment	Detailed Im	pact Assessment	Detailed Impa	ct Assessment	Detailed Impa	act Assessment
EA Management Catchment:	North West GW	Scheme component ((ID): GB41202	G991700-ST-145	GB41202G	991700-ST-146	GB41202G991700-VF-147	GB41202G991700-OF- 148 GB41202G991700-O 150	OF- GB41202G991700-C-151	GB41202G991700-OF-1514	GB41202G991700- 0 OF-152	GB41202G991700-VF- 154	GB41202G991700-C-156	GB41202G991700-OF- 157	GB41202G991700	0-RT-157A GB41	1202G991700-OF- 157B	GB41202G991700-RT-157	C GB4120	2G991700-CR-158	GB41202G99	91700-CCRT-159	GB41202G9	91700-RT-159A	GB41202G99	1700-RT-159B	GB412020	991700-BF-160	GB41202G99	1700-RT-160A	GB41202G99)1700-RT-160B
Overall Status (2015):	Poor	Scheme component ty Scheme component na	ype: Star	ion/Depot aintenance Base - Rail (IMB-R)	Static	on/Depot y railhead	Viaduct Foundations Mid-Cheshire (railway) viaduct and Mobberley	Dverbridge Foundation Mobberley Road Free Action Back Lane accommodation	ons Cutting Thorns Green cutting	Overbridge Foundations	Overbridge Foundations on Castle Mill Lane	Viaduct Foundations River Bollin East	Cutting Ringway cutting	Overbridge Foundations Sunbank Lane M5	Retaining W	vall e Offline Retaining Off	Overbridge Foundations 56 Jct 6 Gyratory fline Overbridge	Retaining Wall M56 J6 Wilmslow Road Link Roa	d Offline M56 cu	th retaining structure	Cut and Cover Tunnel	l with Retaining Structure	Retai M56 Jct 6 Northbound M	ning Wall	Retaini M56 J6 Southbound Dive	ing Wall erge Offline Retaining Wall	A538 Wilmslow R	oundations	Retain M56 Jct 6 Hale Road Link	ng Wall Overbridge Retaining Wall	Retaini M56 J6 THG Attenuatio	ng Wall
Overall Status Objective:	Good by 2027	Impact type from sche compone	eme lent:				Road viaduct	offline overbridge overbridge		Offline Overbridge	overbridge	viaduct		overbridge	Wall		West	Retaining Wall														
			Lowering of groundwater levels an potential reduction in	d	Lowering of groundwater levels and	4			Lowering of groundwater levels	Is		Lo	owering of groundwater	gro	and potential reduction in		ł	groundwater levels and potential reduction in	Lowering groundwater lev potential reduc	of rels and tion in	Lowering of groundwater levels and potential	r	Lowering of groundwate		Lowering of groundwater		Lowering of groundwate	r	Lowering of groundwater		Lowering of groundwater	
WED Status	20	2015 015 RBMP 2010	groundwater contributions to surfac water bodies, GWDTE c	e r r r r r r r r r r r r r r r r r r r	groundwater contributions to surface water bodies, GWDTE or	"Damming" of groundwater flow and r reduction in	"Damming" of groundwater flow and	"Damming" of "Damming" of groundwater flow groundwater flow and reduction in and reduction in	and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by	"Damming" of groundwater f and reduction in groundwa	"Damming" of flow groundwater flow ter and reduction in	"Damming" of groundwater flow and reduction in	Is and potential reduction roundwater contributions o surface water bodies,	"Damming" of groundwater flow and reduction in	groundwater contributions to face water bodies, GWDTE or a	"Damming" of "I roundwater flow gro and reduction in an	'Damming" of oundwater flow nd reduction in	groundwater contributions to surface water bodies, GWDTE or	ater flow contributions to uction in water bodies, GV	"Damming" of groundwater flow and NDTE or	f reduction in groundwater contributions to surface water bodies, GWDTE or	r "Damming" of groundwater flow and	reduction in groundwate contributions to surface water bodies, GWDTE or	"Damming" of groundwater flow and	reduction in groundwater contributions to surface water bodies, GWDTE or	"Damming" of groundwater flow and	reduction in groundwate contributions to surface water bodies, GWDTE of	r "Damming" of groundwater flow and	reduction in groundwater contributions to surface water bodies, GWDTE or	"Damming" of groundwater flow and	reduction in groundwater contributions to surface water bodies, GWDTE or	"Damming" of groundwater flow and
WFD Status Element	Element Cy	atus Objective	groundwater us abstractions by temporary	contributions	groundwater abstractions by temporary	groundwater contributions	contributions	groundwater groundwater contributions contributions	groundwater abstractions by temporary dewatering/permanent groundwater control	contributions	groundwater contributions	groundwater ab contributions d	stractions by temporary dewatering/permanent groundwater control	groundwater contributions a	groundwater abstractions by temporary	groundwater g contributions c	groundwater contributions	groundwater abstractions by temporary	dwater groundwat outions abstraction temporar	er groundwater s by contributions	abstractions by s temporary dewatering/permanent	contributions	groundwater abstraction by temporary dewatering/permanent	contributions	groundwater abstractions by temporary dewatering/permanent	contributions	r groundwater abstraction by temporary dewatering/permanent	s contributions	groundwater abstractions by temporary dewatering/permanent	contributions	groundwater abstractions by temporary dewatering/permanent	contributions
			dewatering/permaner groundwater control	t	dewatering/permanent groundwater control	t								dew n	watering/permane nt groundwater control		d	dewatering/permane nt groundwater control	dewatering/per groundwater c	manent ontrol	groundwater control		groundwater control		groundwater control		groundwater control		groundwater control		groundwater control	
	Quantitative	Good by	No measurable change due to embedded mitigation - i.e. no or	No measurable change due	No measurable change due to embedded mitigation - i.e. no or	No measurable change due to shallow nature of	No measurable change on	No measurable No measurable change on saline change on saline	No measurable change on saline	No measurable change on salin	No measurable M change on saline due to i	No measurable change on saline	neasurable change on saline	No measurable change No r on saline intrusions on s	measurable change No r saline intrusions on s	measurable change No m saline intrusions on sa	neasurable change N aline intrusions o	No measurable change No measur on saline intrusions on saline ir	able change trusions	No measurable ange on change on saline	e No measurable change on	No measurable change on	No measurable change on	No measurable change on	No measurable change on	No measurable change on	No measurable change on	No measurable change on	No measurable change on	No measurable change on	No measurable change on	No measurable change on
	Saline Intrusions	Good 2015 Good	ood minimal dewatering/permanent groundwater control	to scale of works relative to water body and embedded mitigation.	minimal dewatering/permanent groundwater control	works relative to water body and embedded mitigation.	saline intrusions due to scale of works relative to water body scale.	intrusions due to intrusions due to scale of works relative of works relative to water body scale.	ale intrusions due to scale of works relative to water body scale.	intrusions due to scale of works relative to water body scale.	scale of works s relative to water r body scale.	intrusions due to iscale of works elative to water body scale.	isions due to scale of works ive to water body scale.	due to scale of works due relative to water body relat scale. scale	e to scale of works due ative to water body rela le. scale	e to scale of works due to ative to water body relativele. scale.	to scale of works dive to water body researched solutions of the second	due to scale of works due to scale relative to water body scale.	e of works vater body water body scale.	ative to scale of works relative to water body scale.	scale of works relative to water body scale.	scale of works relative to water body scale.	saine intrusions due to scale of works relative to water body scale.	scale of works relative to water body scale.	scale of works relative to water body scale.	saline intrusions due to scale of works relative to water body scale.	scale of works relative to water body scale.	saline intrusions due to scale of works relative to water body scale.	scale of works relative to water body scale.	saline intrusions due to scale of works relative to water body scale.	saline intrusions due to scale of works relative to water body scale.	scale of works relative to water body scale.
			required.		required.																											
																										Potential to reduce						Potential to reduce
			No measurable change due to embedded	No measurable change due	No measurable change due to embedded	No measurable change	No measurable change due to embedded mitigation -	No measurable No measurable change due to change due to		No measurable change due to	No measurable change due to embedded	No measurable hange due to	neasurable change due to	No measurable change No r due to embedded due	measurable change e to embedded	measurable change	neasurable change N to embedded d	No measurable change due to embedded No measur	able change No measurable ch	No measurable			No measurable change due to embedded mitigation -	No measurable change due to embedded mitigation -	No measurable change due to embedded mitigation -	groundwater flow to Spring at Keepers Cottage, Sunbar Lane (south) due to	k No measurable change due to embedded mitigation -	No measurable change due to embedded mitigation -	No measurable change due to embedded mitigation -		No measurable change due to embedded mitigation -	Potential Spring 120m east of Keepers Cottage, Sunbank Lane, which is 2.5r
	Quantitative Water Balance	Good Good by 2015 Good	mitigation - i.e. no or od minimal dewatering/permanent groundwater control	to scale of works relative to water body and embedded mitigation.	mitigation - i.e. no or minimal dewatering/permanent groundwater control	works relative to water body and embedded mitigation.	i.e. no or minimal dewatering/permanent groundwater control	i.e. no or minimal dewatering/permane dewatering/permane t groundwater	en balance likely.	embedded mitigation - i.e. no o minimal dewatering/permanen groundwater control required.	r mitigation - i.e. no t or minimal dewatering/perman	i.e. no or minimal dewatering/permane groundwater	edded mitigation - i.e. no or mal dewatering/permanent ndwater control required.	minimal mini dewatering/permanen dew	nimal vatering/permanen coundwater control	e to embedded minin tigation and scale of rks. t grou	mal m atering/permanen d undwater control t	nitigation - i.e. no or ninimal dewatering/permanen groundwater control	edded due to embedded ind scale of mitigation and sca works.	embedded mitigation and scale of works.	to embedded mitigation and scale of works.	to embedded mitigation and scale of works.	i.e. no or minimal dewatering/permanent groundwater control	i.e. no or minimal dewatering/permanent groundwater control	i.e. no or minimal dewatering/permanent groundwater control	ground structures. This spring is being artificially channelled to the receiving	i.e. no or minimal dewatering/permanent groundwater control	i.e. no or minimal dewatering/permanent groundwater control	i.e. no or minimal dewatering/permanent groundwater control		i.e. no or minimal dewatering/permanent groundwater control	away. Retained cut is parallel to hydraulic gradier which limits the impact the
			required.		required.		required.	control required. required.			ent groundwater control required.	control required.		required. requ	juired.	requi	ired. re	equired.					required.	required.	required.	watercourse due to the roa being built on its natural surface expression.	d required.	required.	required.		required.	structure will have on the spring. Minor impact due to interception of groundwate
																		Sunbank W	ood and													
Quantitative								Piling may obstruct the flow of	Minor localized impact on Mill		ד ק פ ר	There is potential for piling from River Bollin East viaduct to influe	d Near Chapel Lane is ted within the radius of ence and may receive	Piling may obstruct the				Ponds are l downstrea downgradi	ocated n and ent of this	Sunbank Wood and Ponds locate	ed											
								superficial deposits and an upper sectio of the bedrock in the	Wood, Castle Mill and Brickhill Woo which are partially located within ROI and might receive reduced	od	ء f S	low paths to Sunbank Wood and Ponds and Mill	ced groundwater flow due terception by the cutting. ever, groundwater flow can	the superficial deposits and an upper section of the bedrock in the		Piling	g may obstruct the	may receiv groundwat to intercep	e reduced er flow due ion by Sunbank Wood ar	the cutting retaining wall so ad Ponds may receive		Sunbank Wood and Ponds located downgradient of the				Sunbank Wood and Ponds located downgradient of th cutting retaining wall so ma	e					
	Groundwater Dependent	Good by	None present within or in	None present within or in	None present within or in	None present within or in	None present within or in	None present within or in close proximity	f groundwater contribution and lowering of groundwater level. Ecclesfield Wood and Jackson's Bar	nk None present within or in close	None present h within or in close r	Vood, Castle Mill habitats, but no neasurable change	ssumed to follow graphy which is likely llel to the route and thus	immediate vicinity of No r the foundations for due the overbridge. Any mitig	measurable change e to embedded igation - i.e. no or	flow of the su ne present within or and a close provimity	of groundwater in superficial deposits an upper section	No measurable change below grou due to embedded structures. nitigation - i.e. no or structure c	nd located within the This may receive lower overs a groundwater leve	ROI so reduced red groundwater flow in the in the catchment	Sunbank Wood and Ponds located within the ROI so may receive lowered	cutting retaining wall so may receive reduced groundwater flow in the	None present within or in	None present within or in	No measurable change due to embedded mitigation -	receive reduced groundwater flow in the catchment due to	None present within or in	None present within or in	None present within or in	None present within or in	None present within or in	None present within or in
	Terrestrial Ecosystems (GWDTE) Test	Good 2027 Goo	ood close proximity down- hydraulic gradient of RO	close proximity down- hydraulic gradient of ROI.	close proximity down- hydraulic gradient of ROI.	close proximity down- hydraulic gradient of ROI.	close proximity down- hydraulic gradient of ROI.	down-hydraulic gradient of ROI. impacts are likely to be localised. Taking into account the	East are outside of the zone of influence of Thorns Green cutting, so are unlikely to receive lowered	proximity down-hydraulic gradi of ROI.	ient proximity down- e hydraulic gradient h of ROI. s	expected as the nabitats are located lightly upgradient of influe	bank Wood and Ponds is ide of the radius of ence but may receive	impacts are likely to be mini localised. Taking into dew account the extent and t gro	nimal watering/permanen roundwater control	wn-hydraulic imme idient of ROI. the fo	e diate vicinity of oundations for overbridge, Any	ninimal small areal dewatering/permanen the habitat groundwater control to the surfa	extent of potential dewater and flow radius of influence ce However, the reta	ing due to inteceptio e. by below ground ining structures.	on potential dewatering radius of influence. Reatining	s inteception by below ground structures. Considering the effects of the cuttings cover	close proximity down- hydraulic gradient of ROI.	close proximity down- hydraulic gradient of ROI.	dewatering/permanent groundwater control required.	interception by below ground structures. Considering the effects of	close proximity down- hydraulic gradient of ROI.	close proximity down- hydraulic gradient of ROI.	close proximity down- hydraulic gradient of ROI.	close proximity down- hydraulic gradient of ROI.	close proximity down- hydraulic gradient of ROI.	close proximity down- hydraulic gradient of ROI.
								extent and depth of the superficial and bedrock aquifers, no moscurable change	groundwater level during dewatering for construction of the cutting but the upstream	2	t S	he Proposed cheme. A minor ocalised impact on a mail area of the	iced groundwater flow in the nment upgradient of the tat. Considering the effects	depth of the superficial requ and bedrock aquifers, no measurable change	juired.	impa locali:	acts are likely to be re	equired. watercours augmented drainage w	e is being wall should minin by dewatering neede ater	d. effects of the cuttings cover a	need for dewatering.	a small areal extent of the habitat, the impact on this habitat is minor.				the cuttings cover a small areal extent of the habitat, the impact on this habitat is	5					
								expected on Ecclesfield Wood SB and LWS.	within the ROI.	-	۲ ۲ ۴	of the abitat which is ocated within the ROI so may receive	e cuttings cover a small l extent of the habitat, no surable change expected on	Sunbank Wood and Ponds.				elsewhere scheme do of this stru	n the vnstream :ture, so the	of the habitat, the impact on this habitat is minor.	ne											
						Ashley IMB-R may	There is potential for minor		The cutting may lower groundwate	er	r r	educed baseflow.						impact on t is minor.	he habitat													
				Ashley IMB-R may intercept groundwater in superficial deposits that would		intercept groundwater in superficial deposits that would otherwise provide	localised impacts on baseflow to Tributary of Birkin Brook 2 and 3. Any	Tributaries of BirkinTributary of BirkinBrook 1 and 2 are inBrook 2 is in closeclose proximity to theproximity to the	levels in proximity to the River Bolli thus reducing baseflow to the river The drainage system of the	lin r.	E S F	Below ground structures have the potential to obstruct		Tributary of River		Tribu	utary of River				Tributary of River Bollin 2 and 3 are located within the potential dewatering radius	e and 3 are located within the ROI of the M56 East tunnel										
				otherwise provide baseflow to Tributary of Birkin Brook 4. No measurable changes expected as embedded		Birkin Brook 4. No measurable changes	below ground structures have the potential to obstruct groundwater flow	the potential to obstruct groundwater flow towards the	er Green cutting to the River Bollin	ns	٤ t E	owards the River Ringv Bollin in the vicinity interv	way cutting could potentially cept groundwater that ld otherwise make a minor	y proximity to the overbridge which has		Bollin proxi overb the p	n 3 is in close imity to the bridge which has				of influence which may lower groundwater levels and reduce contribution to these watercourses	which may intercept groundwater flow to these watercourses. Minor impact										
	Quantitative Dependent	Good by	No measurable changes as embedded mitigation	mitigation (diverted flow incorporated into watercourse diversions and	No measurable changes a embedded mitigation and	mitigation (diverted flow incorporated into watercourse diversions	towards the watercourses. However, any groundwater intercepted by the viaduct	watercourses. Any watercourse. Any impacts are likely to be localised but no be localised. No	in the river. Seasonal springs 130m south-east and 115m south-east of Pigleystair	None present within or in close	None present within or in close	lowever, any contr groundwater the R ntercepted by the tribu	ribution to the baseflow of River Bollin and its Itaries. Groundwater	obstruct groundwater flow towards the Non watercourse. Any in cl	ne present within or lose proximity	obstr flow t water	ruct groundwater towards the N rcourse. Any in	None present within or None present n close proximity in close proximity	nt within or ximity	None present nin or in within or in close	Spring at Keepers Cottage, Sunbank Lane (south) and potential spring at Keepers	as no mitigation is designed in the drainage network of the Proposed Scheme.	None present within or in	None present within or in	None present within or in	None present within or in	None present within or in	None present within or in	None present within or in	None present within or in	None present within or in	None present within or in
	Surface Water Body	2015	and proposed works are largely above ground.	drainage network) and the proposed works are largely above ground.	proposed works are largely above ground.	and drainage network) and the proposed works are largely above ground.	d downstream tributary, Tributary of Birkin Brook 1, via the drainage system	measurable changesmeasurable changesexpected asexpected astemporary andtemporary and	 Bridge, River Bollin and Pigleystair Bridge, River Bollin are unlikely to be significantly impacted by a 	of ROI.	hydraulic gradient of ROI.	viaduct would still intervision intervision into the cuttin cuttin River Bollin via the disch	rcepted by the Ringway ng would, however, be narged to the River Bollin. As	impacts are likely to be dow localised. No grac measurable change to	wn-hydraulic dient of ROI.	impa locali: meas	acts are likely to be di ised. No gr surable change to	down-hydraulic down-hydr gradient of ROI. gradient of	ROI.	of ROI. hydraulic gradier of ROI.	Cottage, Sunbank Lane (north) are located within the ROI. The retaining wall	Sunbank Lane (south) and potential spring at Keepers	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.
				200m stretch of Tributary of Birkin Brook 4 will be lost due to watercourse		200m stretch of Tributary of Birkin Brook 4 will be lost due to watercourse diversions for the railboad	and watercourse diversions of the Proposed Scheme. As a result, the	permanent effects on groundwater flow into the watercourses due to embedded	temporary reduction in groundwater level during dewatering for construction. Also flow from Spring at Piglovetair		c t s	Irainage system of a res he Proposed on gr icheme downstream River	sult, no measurable change roundwater flow to the r Bollin expected.	groundwater flow expected due to embedded mitigation		grour expec embe	ndwater flow ected due to edded mitigation				along the cutting will reduce ROI but groundwater level	(north) are located within the ROI. Some groundwater flow feeding the springs may	,									
				but water intercepted will be discharged to downstream watercourses.		but water intercepted will be discharged to downstream	watercourses, particularly Tributary of Birkin Brook 3, may experience reduced	mitigation (bentonite mitigation (bentonit and temporary casing). casing).	 Bridge, River Bollin will be collected by the drainage system and discharged back into the surface 	d	r c	neasurable change on the River Bollin expected.		temporary casing).		temp	porary casing).				be reduced by dewatering leading to a localised reduction in flow.	be intercepted by the M56 East tunnel leading to a localised reduction in flow.										
						watercourses.	baseriow.		watercourse downstream.					Dist	turbing or		D	Disturbing or														
			Disturbing or mobilisin existing poor quality groundwater by	Creating or altering of	Disturbing or mobilising existing poor quality groundwater by	Creating or altering of pathways along which	Creating or altering of	Creating or altering Creating or alterin of pathways along of pathways along	g Disturbing or mobilising existing poor quality groundwater by	g Creating or altering of pathwa	Creating or altering of ays pathways along	Creating or altering of pathways along which existing poor	urbing or mobilising ting poor quality ındwater by temporary	mot Creating or altering poo of pathways along grou	bilising existing or quality Crea bundwater by of p	eating or altering Creat pathways along of pa	nting or altering pathways along g	nobilising existing poor quality Creating o groundwater by of pathwa	Disturbing or mo r altering existing poor qua ys along groundwater by	bilising Creating or ality altering of pathways along	Disturbing or mobilising existing poor quality g groundwater by	Creating or altering of	Disturbing or mobilising existing poor quality groundwater by	Creating or altering of	Disturbing or mobilising existing poor quality groundwater by	Creating or altering of	Disturbing or mobilising existing poor quality groundwater by	Creating or altering of	Disturbing or mobilising existing poor quality groundwater by	Creating or altering of	Disturbing or mobilising existing poor quality groundwater by	Creating or altering of
			temporary dewatering or depressurisation an permanent groundwat	existing poor quality groundwater can migrate	temporary dewatering or depressurisation and permanent groundwate	existing poor quality groundwater can r migrate	existing poor quality groundwater can migrate	which existing poor which existing poo quality groundwater quality groundwate can migrate can migrate	r temporary dewatering or er depressurisation and permanent groundwater control	along which existing poor qua nt groundwater can migrate	ality which existing poor quality groundwater can	quality groundwater can nigrate	atering or ressurisation and nanent groundwater	which existing poor tem quality groundwater dew can migrate dep	nporary whi watering or qua pressurisation and can	ich existing poor which ality groundwater quali n migrate can n	th existing poor te ity groundwater d migrate d	emporary which exis dewatering or quality gro depressurisation and can migrat	ting poor temporary dewa undwater or depressurisat e permanent groundwator con	tering which existing ion and poor quality groundwater ca	temporary dewatering or depressurisation and an permanent groundwater	existing poor quality groundwater can migrate	temporary dewatering or depressurisation and permanent groundwater	existing poor quality groundwater can migrate	temporary dewatering or depressurisation and permanent groundwater	existing poor quality groundwater can migrate	temporary dewatering of depressurisation and permanent groundwater	existing poor quality groundwater can migrate	temporary dewatering or depressurisation and permanent groundwater	existing poor quality groundwater can migrate	temporary dewatering or depressurisation and permanent groundwater	existing poor quality groundwater can migrate
											ingrate			grou	oundwater control		g	groundwater control	groundwater con	ingrate												
			No measurable changes due to embedded	No measurable changes due	No measurable changes due to embedded	No measurable changes due to embedded	No measurable changes due to embedded	No measurable No measurable changes due to changes due to			No measurable changes due to	No measurable Changes due to		No measurable No r changes due to char	measurable No r inges due to chai	measurable No m anges due to chang	neasurable N iges due to cl	No measurable No measur hanges due to changes du	able No measurable ch e to due to embedded	No measurable changes due to	No measurable changes due to embedded	No measurable changes due	No measurable changes du	e No measurable changes du	No measurable changes due	No measurable changes du	e No measurable changes du	e No measurable changes due	e No measurable changes due	No measurable changes due	No measurable changes due	No measurable changes du
	Chemical Saline Intrusions	Good Good by 2015 Good	mitigation - i.e. no or minimal dewatering/permanent	to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control	mitigation - i.e. no or minimal dewatering/permanent	mitigation - i.e. no or minimal dewatering/permanent	mitigation - i.e. no or minimal dewatering/permanent	embedded mitigation i.e. no or minimal dewatering/permane dewatering/permane	n - No measureable changes due to scale of works and embedded en mitigation	No measurable changes due to embedded mitigation - i.e. no o minimal dewatering/permanen	embedded mitigation - i.e. no t or minimal	embedded mitigation i.e. no or minimal lewatering/permane	neasurable changes due to edded mitigation - i.e. no or mal dewatering/permanent	embedded mitigation - emb i.e. no or minimal i.e. r dewatering/permanen dew	bedded mitigation - emb no or minimal i.e. r watering/permanen dew	bedded mitigation - embe no or minimal i.e. no watering/permanen dewa	edded mitigation - ei o or minimal i.e atering/permanen de	embedded mitigation - embedded .e. no or minimal dewatering/permanen dewatering	mitigation - mitigation - i.e. no inimal minimal /permanen dewatering/perma	or mitigation - i.e. n or minimal	no mitigation - i.e. no or minimal dewatering/permanent	to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control	to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control	to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control	to embedded mitigation - i.e. no or minimal dewatering/permanent	to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control	to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control	to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control	to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control	to embedded mitigation - i.e. no or minimal dewatering/permanent	to embedded mitigation - i.e. no or minimal dewatering/permanent	to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control
			groundwater control required.	required.	groundwater control required.	groundwater control required.	groundwater control required.	nt groundwater t groundwater contr control required. required.	ol	groundwater control required.	ent groundwater control required.	ontrol required.	nuwater control required.	t groundwater control t gro required. requ	oundwater control t gro juired. requ	roundwater control t grou quired. requi	undwater control t ; ired. re	required.	ter control groundwater cont required.	rol nent groundwate control required.	er required.	required.	required.	required.	required.	required.	required.	required.	required.	required.	required.	required.
	Chemical Drinking Water Protected Areas	Good Good by Good 2015	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.	None in community None in community area MA06. area MA06	None in community area MA06.	None in community area MA06.	None in community Narea MA06.	None in community None MA06.	e in community area MA06.	None in community Non area MA06.	ne in community Non a MA06.	ne in community None ea MA06. area	e in community N MA06.	None in community None in con area MA06. area MA06	nmunity None in communi MA06.	ty area None in community area	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.	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.	None in community area MA06.	None in community area MA06.
	(DrWPAs)																			MAU6.												
											T	he viaduct piles have potential to mpact on								The Proposed												
								There is the potentia to alter groundwate	al r The Proposed Scheme has potentia	ial	י ז ע	groundwater flow bathways to Sunbank Vood and Ponds and	e is potential for impacts on	The Proposed Scheme The has potential to impact has	e Proposed Scheme The s potential to impact has	e Proposed Scheme The P s potential to impact has p	Proposed Scheme Tl	The Proposed Scheme The Proposed Scheme has potential to impact has potential	ed Scheme al to impact potential to impac	eme has potential to	The Proposed Scheme has potential to impact	The Proposed Scheme has			The Proposed Scheme has	The Proposed Scheme has						
	Groundwater Dependent Terrestrial	Poor Good by Poor 2027 Poo	None present within or in oor close proximity down-	None present within or in close proximity down-	None present within or in close proximity down-	None present within or in close proximity down-	None present within or in close proximity down-	None present within quality during or in close proximity construction near to down-hydraulic Ecclesfield Wood. Th	to impact groundwater quality at Mill Wood, Castle Mill and Brickhill Wood during the construction	None present within or in close proximity down-hydraulic gradi	None present None within or in close None ient proximity down- proximity down-	Aill Wood, Castle Near Aill. There is the Wood potential to alter const	r Chapel Lane and Sunbank d and Ponds during the truction phase. This will be	Sunbank Wood and Woo Ponds during the Lane construction phase. cons	od near Chapel Woo ne SBI during the Land Instruction phase. con	bod near Chapel Sunb- ne SBI during the Pond	bank Wood and Siduring the Protection phase.	Sunbank Wood and Sunbank W Ponds during the Ponds duri construction phase. construction	ood and ng the n phase. groundwater qual Sunbank Wood ar during the constru	ity to groundwater d Ponds quality to Sunbar action Wood and Ponds	groundwater quality to Sunbank Wood and Ponds during the construction	groundwater quality to Sunbank Wood and Ponds during the construction	None present within or in close proximity down-	None present within or in close proximity down-	groundwater quality to Sunbank Wood and Ponds during the construction	groundwater quality to Sunbank Wood and Ponds during the construction	None present within or in close proximity down-	None present within or in close proximity down-	None present within or in close proximity down-	None present within or in close proximity down-	None present within or in close proximity down-	None present within or in close proximity down-
	Ecosystems (GWDTEs) Test		hydraulic gradient of RO	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	gradient of ROI. will be mitigated through the implementation of t	phase. This will be managed through implementation of the dra CoCP.	of ROI. aft	hydraulic gradient g of ROI. c	groundwater and mana imple during construction CoCP	aged through ementation of the draft	This will be managed This through thro implementation of the imple	s will be managed This ough thro plementation of the imp	is will be managed This v ough throu plementation of the imple	will be managed TI ugh the ementation of the lin	This will be managed This will be hrough through mplementation of the implement	phase. This will be managed through implementation o	during the construction f the phase. This will b	phase. This will be managed through be implementation of the draft	phase. This will be managed through implementation of the draft CoCP.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	phase. This will be managed through implementation of the draft CoCP.	phase. This will be managed through implementation of the draft CoCP.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.	hydraulic gradient of ROI.
								draft CoCP.			'v t	vill be mitigated hrough the mplementation of		draft CoCP. draf	ift CoCP. draf	ift CoCP. draft	: CoCP. d	draft CoCP. draft CoCP.		implementation of the draft CoCP.	of											
Chemical											t	he draft CoCP.																				
						T 11																										
			There is potential to impact groundwater quality to Tributary of	There is potential to impact groundwater quality to	No measurable changes	Tributary of Birkin Brook 1, 2 & 3 are located within or close to the land required	, The temporary construction works have	The temporaryThe temporaryconstruction worksconstruction workshave the potential tohave the potential to	The temporary construction works	5	T	The temporary construction works The t	temporary construction	The temporary construction works		The tr const	temporary truction works			Nama	The temporary construction works have	The temporary construction										
	Chemical Dependent Surface Water	Poor Good by 2027 Poo	Birkin Brook 4 which is located partly within the land required for	Which is located partly within the land required for	due to embedded mitigation - i.e. no or minimal dewatering/permanent	for construction, and major realignment and culverting works are	the potential to affect groundwater quality to Tributary of Birkin Brook 2 and 3. This will be	affect groundwateraffect groundwaterquality to Tributary ofquality to Tributary ofBirkin Brook 1 and 2.Birkin Brook 2 and	have the potential to affect groundwater quality to Tributary of Birkin Brook 2 and River Bollin. This	None present within or in close proximity down-hydraulic gradi	None present r within or in close a ient proximity down- c	ave the potential to work iffect groundwater affec quality to the River River Sollin This will be This y	s have the potential to t groundwater quality to the r Bollin and its tributaries. will be mitigated through	have the potential to affect groundwater quality to Tributary of Biver Bollin 3. This will	ne present within or Non close proximity in cl wn-hydraulic dow	ne present within or close proximity wn-hydraulic	the potential to t groundwater ity to Tributary of Bollin 3. This will	None present within or None prese n close proximity in close pro down-hydraulic down-hydr	nt within or ximity sulic bydraulic gradient	None present nin or in within or in close wn- proximity down-	the potential to affect e groundwater quality to - Tributary of River Bollin 2 and 3. This will be mitigated	works have the potential to affect groundwater quality to Tributary of River Bollin 2	None present within or in close proximity down- bydraulic gradient of ROI	None present within or in close proximity down-	None present within or in close proximity down-	None present within or in close proximity down- bydraulic gradient of ROI	None present within or in close proximity down- bydraulic gradient of ROL	None present within or in close proximity down- bydraulic gradient of BOL	None present within or in close proximity down-	None present within or in close proximity down- bydraulic gradient of ROL	None present within or in close proximity down- bydraulic gradient of ROL	None present within or in close proximity down-
	Body		construction. This will be mitigated through the implementation of the	mitigated through the implementation of the draft CoCP.	groundwater control required.	tributaries of Birkin Brook. Localised impact on groundwater quality may	mitigated through the implementation of the draft CoCP.	This will be mitigated through the implementation of the draft Ge GP	will be mitigated through the implementation of the draft CoCP.		of ROI.	nitigated through the ir he implementation CoCP	mplementation of the draft	be mitigated through the implementation of the draft CoCP.	dient of ROI. grad	idient of ROI. be mi the in	nitigated through grant and through grant and through grant and the second seco	gradient of ROI. gradient of	ROI.	of ROI.	through the implementation of the draft CoCP.	through the implementation	,	, a sum gradient of KUI.	, - a and gradient of RUI.	, a concentration ROI.	, cane prodient of ROI.	, sone Bradient OF KOL	Jan Bradient of KUI.	, a sere groutent of ROI.	,	,
			draft CoCP.			be expected.		the draft CoCP. the draft CoCP.								the d																
			Some localised effects	Some localized officers			No measurable changes	No measurable No measurable			No measurable changes due to	No measurable		No measurable		No m	neasurable			No moore b							No measurable changes du	e No measurable changes due	e			
	General Chemical Test	Poor Good by Poo	may be anticipated but these are unlikely to impact waterbody status	be anticipated but these are unlikely to impact waterbody status due to	No measurable change or waterbody status due to embedded mitigation	No measurable change on waterbody status due to embedded mitigation	mitigation - i.e. no or minimal dewatering/permapent	embedded mitigation i.e. no or minimal dewatering/permane dewatering/permane	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to	No measurable changes due to embedded mitigation - i.e. no o minimal dewatering/permanen	embedded e r mitigation - i.e. no t or minimal	embedded mitigation No m i.e. no or minimal scale lewatering/permane body	neasurable changes due to e of works relative to water / size.	embedded mitigation - i.e. no or minimal dewatering/permanen	measurable No r anges due to scale char works relative to of w	measurable anges due to scale works relative to deve	edded mitigation - o or minimal atering/permanen	No measurable No measur changes due to scale changes du of works relative to of works re	able No measurable ch e to scale due to scale of wo lative to relative to water b	changes changes due to scale of works relative to water	No measurable changes due to scale of works r relative to water body size	No measurable changes due to scale of works relative to water body size.	No measurable changes du to scale of works relative to water body size.	e 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.	No measurable changes du to scale of works relative to water body size.	to embedded mitigation - i.e. no or minimal dewatering/permanent	to embedded mitigation - i.e. no or minimal dewatering/permanent	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.	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.
			mitigation.	embedded mitigation.			groundwater control required.	nt groundwater t groundwater contr control required. required.	ol	Biodinuwater control required.	ent groundwater control required.	nt groundwater control required.		t groundwater control wate	wati	t grou requi	undwater control ^w ired.	water body size. Water body	512C. SIZE.	body size.							required.	required.				

Table A22: Wea Weaver and Da (GB1202G99170 EA Managemen Catchment:	aver and Dane Quate ane Quaternary Sand 00) (Secondary aquife nt North West GW	ernary Sand and G d and Gravel Aquif fer (undifferentiate Scheme con	ravel Aquifers ((fers ed)) nponent (ID):	(GB1202G991700) detail Detailed Impact GB41202G991	led impact assessme t Assessment 700-RT-161	ent - effects on current st Detailed I GB4120	atus mpact Assessment 2G991700-CR-162	Detailed Im GB41202	pact Assessment G991700-C-163	Detailed Imp GB41202G	act Assessment 991700-CR-164	Detailed Impact Assessment GB41202G991700- OF-165	Detailed Impact AssessmentDetailed Impact AssessmentGB41202G99170 0-OF-166GB41202G99170 OF-167	Ct Detailed Impact Assessment 00- GB41202G991700-ST-168	Detailed Impact A GB41202G99170	Detailed Impa Assessment 00-RT-169 GB41202G991 0-OF-170	ct Detailed Impact Assessment 70 GB41202G991700 OF-171	Detailed Imp GB41202G9	pact Assessment 991700-TP-172	Detailed Impact GB41202G991	Assessment 700-BT-173	Detailed Impact GB41202G9917	Assessment 00-RT-174	Detailed Impac GB41202G99	t Assessment 1699-VT-175			Detailed Impact Assessmen	t Outcome	
Overall Status (2015): Overall Status Objective: WFD Status Element	Poor Good by 2027 WFD Quality Element	Scheme comp Scheme comp Impact type f Impact type f 2015 RBMP Cycle 2 Status Object	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Retaining A538 Wilmslow Road of Lowering of groundwater levels and potential reduction in groundwater contributions to surfact water bodies, GWDTE o groundwater abstractions by temporary dewatering/permanent groundwater control	g Wall offline retaining wall d f e groundwater flow r and reduction in groundwater contributions t	Cutting wit Manchester Airport Hig Lowering of groundwaa levels and potential reduction in groundwater contributions to surfa water bodies, GWDTE groundwater abstractions by temporary dewatering/permane groundwater contro	h retaining structure h Speed Station cutting retaining structure wall south ter "Damming" of groundw flow and reduction groundwater contribution I	ning Manchester Airport	Cutting High Speed Station cutting r r f m flow and reduction in groundwater contributior	Cutting with re Manchester Airport High Spe n Lowering of groundwater levels and potential reduction in groundwater r contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	etaining structure eed Station cutting retaining wa orth "Damming" of groundwate flow and reduction in groundwater contribution	Overbridge Foundations II A538 Hale Road overbridge (south) "Damming" of groundwater flow and reduction in groundwater contributions	Overbridge FoundationsOverbridge FoundationsA538 Hale Road overbridge (north)Hasty Lane NMI underpass extension"Damming" of groundwater flow and reduction in groundwater contributions"Damming" of groundwater flow and reduction in groundwater contributions	U Manchester Airport High Speed Station G Manchester Airport High Speed Station Manchester Airport High Speed Station Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	Retaining N Davenportgreen Wood Soil retaining Davenportgreen Wood Soil retaining Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE on groundwater er ns demonstration	Vall Overbridge Foundations offline reinforced gwall Raised Metrolii overbridge "Damming" of groundwater flow and reduction in groundwater contributions contribution	Overbridge Foundations Thorley Lane overbridge f "Damming" of groundwater flow and reduction in groundwater contributions	Tunn Manchester Tunne Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	el Portal el South porous portal "Damming" of groundwat flow and reduction in groundwater contribution	Every and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanen groundwater control	r Tunnel "Damming" of groundwater flow and reduction in groundwater contributions	Retaining Altrincham Road vent shaft wall Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	Wall access road retaining "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	Shaft ad vent shaft "Damming" of groundwa flow and reduction in groundwater contributio	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 Itcome - potential for deterioration of current status of quality element at water body scale
	Quantitative Saline Intrusions	IS Good Good 2015	by Good sa	lo measurable change of aline intrusions due to cale of works relative to vater body scale.	No measurable n change on saline intrusions due to scale of works relative to water body scale.	No measurable change saline intrusions due to scale of works relative to water body scale.	on No measurable change of saline intrusions due to so of works relative to wate body scale.	on No measurable change or scale saline intrusions due to r scale of works relative to water body scale.	No measurable change on saline intrusions due to scal of works relative to water body scale.	No measurable change on saline intrusions due to scale of works relative to water body scale.	No measurable change on saline intrusions due to scale of works relative to water body scale.	No measurable change due to embedded mitigation and scale of works.	No measurable change due to embedded mitigation and scale of works.		No measurable change or saline intrusions due to scale of works relative to water body scale.	No measurable change on saline intrusions due to scale of works relative to water body scale. No measurable change on saline intrusions due scale of works relative to water body scale.	No measurable e change on saline intrusions due to scale of works r relative to water body scale.	No measurable change on saline intrusions due to scale of works relative to water body scale.	No measurable change on e saline intrusions due to scal of works relative to water body scale.	No dewatering along the tunnel itself as TBM in us see embedded mitigatior Thus, no lowering of groundwater levels anticipated.	The tunnel will consist of twin bore tunnels 12.8km in length, 7.55m internal diameter and e - maximum 45.0m I bgl. The presence of the tunnel will have no measurable changes on saline intrusion as this issue is associated with long-term abstractions.	No measurable changes on aline intrusions due to scale of works relative to vater body scale.	No measurable changes on saline intrusions due to scale of works relative to water body scale.	Unlikely to be affected at a water body scale compared to scale of works. There is no existing known saline water at depth.	Unlikely to be affected at a water body scale compare to scale of works. There is existing known saline wate depth.	a no identified	Localised adverse effect anticipated when scheme component effects considered in combination However no deterioration i status of quality element anticipated at water body scale. Additional mitigation not required.	TBC - Further investigations needed to understand the risks of drawing poor quality water into the aquifer due to construction over the Halite deposits.	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	אין terioration in quality ement status וticipated
	Quantitative Water Balance	Good Good 2015	by 5 Good gr re	lo measurable change ue to embedded hitigation - i.e. no or hinimal ewatering/permanent roundwater control equired.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	No measurable change due to embedded mitigation and scale of n works.	No measurable change of to embedded mitigation scale of works.	due and No measurable change due to embedded mitigation and scale of works.	No measurable change due to embedded mitigation and scale of works.	No measurable change due to embedded mitigation and scale of works.	 No measurable change due embedded mitigation and scale of works. 	No measurable change due to embedded mitigation and scale of works.	No measurable change due to embedded mitigation and scale of works.	The groundwater impacts as a result of th station will be dominantly due to the	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation and scale of works.	No measurable change due to embedded mitigation and scal of works.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable change due to embedded mitigation and scale of works.	No dewatering along the tunnel itself as TBM in us see embedded mitigatior Thus, no lowering of groundwater levels anticipated.	The tunnel will consist of twin bore tunnels each with 7.55m internal diameter. The tunnel creates an extended cylinder of no flow although changes in groundwater level due to a partial barrier to flow created by the tunnel are expected to be highly localised. The presence of the tunnel will have no measurable	No measurable changes due to embedded nitigation - i.e. no or ninimal dewatering/permanent groundwater control equired.	No measurable change due to embedded mitigation and scale of works.	Unlikely to be affected at a water body scale compared to scale of works.	Unlikely to be affected at a water body scale compare to scale of works.	a None identified	Localised adverse effect anticipated when scheme component effects considered in combination However no deterioration i status of quality element anticipated at water body scale. Additional mitigation not required.	TBC - 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.	ompliant - no eterioration in quality ement status nticipated
Quantitative	Groundwater Dependent Terrestrial Ecosystems (GWDTE) Test	Good Good	by Good Cli 7	lone present within or in lose proximity down- ydraulic gradient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	Sunbank Wood and Pon is within the zone of influence of M56 East tunnel and Manchester Airport High Speed Stati cutting retaining wall south meaning there m be localised changes in groundwater level supporting this habitat due to dewatering. Some groundwater flow feeding the springs at Keepers Cottage, Sunba Lane may drain to the cuttings, leading to a localised change in flow	ds Sunbank Wood and Pon- within the zone of influe of M56 East tunnel and Manchester Airport High on Speed Station cutting retaining wall south mea ay there may be localised changes in groundwater supporting this habitat d interception by the cuttin retaining structures. The potential for the retainin structures to reduce nk groundwater flow in the catchment upgradient of habitat.	ds is nce is within the zone of influence of M56 East tunnel and Manchester Airport High Speed Station cutting meaning there ma be localised changes in groundwater level ue to supporting this habitat due to dewatering. re is The groundwater level gupporting the springs at Keepers Cottage, Sunban Lane may lower, leading t i the groundwater contribution to the springs.	Sunbank Wood and Ponds is within the zone of influence of M56 East tunnel and Manchester Airport High Speed Station cutting meaning there may be localised changes in groundwater flow supportin this habitat due to interception by the below p ground works.	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.	earthworks of the cuttings and retaining walls which have been assessed separate The remainder of the station will be built following these earthworks and therefore be "above ground". Whilst minor effects a anticipated (as a result of additional foundations etc) due to embedded mitigation strategies of the earthworks prior to the construction of the station, no measurable changes are expected.	ely. eare o 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 withi or in close proximit down-hydraulic gradient of ROI.	n y close proximity down- hydraulic gradient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	The tunnel is located in bedrock aquifers (predominantly Mercia Mudstone and Sherwood Sandstone) and therefore is unlikely to impact on groundwater levels in the superficial deposits.	The tunnel is located in bedrock aquifers (predominantly Mercia Mudstone and Sherwood I Sandstone) and therefore is unlikely to impact on groundwater flow in the superficial deposits.	None present within or in close proximity down- nydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	Blackcarr Wood and Baguley Bottoms habitat is partially located within the ROI of the vent shaft. Some temporary localised effects may be anticipated during construction but these are unlikely to impact waterbody status due to embedded mitigation (use of secant piled walls through the shallow aquifer). Wythenshawe Park and Gib Lane Wood and Round Wood habitats are also partially located within the ROI but no measurable changes due to embedded mitigation (use of secant piled walls through the	Unlikely to be affected at a water body scale compare to scale of works.	a None identified	Localised adverse effect anticipated when scheme component effects considered in combination However no deterioration i status of quality element anticipated at water body scale. Additional mitigation not required.	TBC - Further investgations needed to understand the n 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.	ompliant - no eterioration in quality ement status nticipated
	Quantitative Dependent Surface Water Body	Good Good 201	by 5 Good Cla hy	lone present within or in lose proximity down- ydraulic gradient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	None present within or close proximity down- hydraulic gradient of RC	n None present within or i close proximity down- I. hydraulic gradient of RO	n None present within or in close proximity down- l. hydraulic gradient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	Potential spring at hotel on 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	Timperley Brook may receive reduced baseflow due to the interception of groundwater by the cutting retaining wall. However, groundwater intercepted would be diverte by the drainage network of the Proposed Scheme and discharged to Timperley Brook downstream of the route of the Proposed Scheme. Therefore, a short section of the brook, approximately 300m in lengt may receive reduced baseflow. Track and highway drainage will be discharged 1 into the brook helping to support flow, but the timing	None present within or in close proximity down-hydraulic gradient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	nt	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 Brook may receive reduced baseflow due to the interception of groundwater by the retaining wall. The Proposed Scheme crossing is proposed as an inverted siphon with an outfall at the retaining wall. This will reduce the interception of groundwater by the selow ground structures of th overbridge. The Proposed Scheme crossing is proposed as an inverted siphon with an outfall at the retaining wall. This will reduce the interception of groundwater by the selow ground structures of th overbridge. The Proposed Scheme crossing is proposed as an inverted siphon with an outfall at the retaining wall. This will reduce the interception of groundwater flow as the	k None present withi or in close proximit down-hydraulic gradient of ROI.	Fairywell Brook is located within the ROI and may receive reduced groundwater contribution due to lower groundwater levels. Any groundwater intercepted by the portal will be discharged by the drainage network of the Proposed Scheme into y Fairywell Brook downstream of the crossing with the Proposed Scheme. As such, a short stretch of the watercourse (20m) will receive reduced baseflow. However, considering the scale of this watercourse compared to the area of reduced flow, no	Fairywell Brook is located within the ROI and groundwater that would otherwise discharge into thi watercourse may be intercepted by the portal. An groundwater intercepted by the portal will be discharged by the drainage network of the Proposed Scheme into Fairywell Brook downstrean of the crossing with the Proposed Scheme. As such, short stretch of the watercourse (20m) will receive reduced baseflow. However, considering the scale of this watercourse compared to the area of	s The tunnel is located in bedrock aquifers (predominantly Mercia Mudstone and Sherwood Sandstone) and therefore is unlikely to impact on groundwater levels in the superficial deposits.	The tunnel is located in bedrock aquifers (predominantly Mercia Mudstone and Sherwood Sandstone) and therefore is unlikely to impact on groundwater flow in the superficial deposits.	None present within or in lose proximity down- hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	shallow aquifer). Baguley Brook and Tributary of Baguley Brook are located close to Altrincham Road vent shaft and may receive reduced baseflow during construction, although the tributary appears to be in culvert in the immediate vicinity of the shaft. Some localised effects from dewatering during construction may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation (use of secant piled walls through the shallow aquifer) and because the	Unlikely to be affected at a water body scale compare to scale of works.	a None identified	Localised adverse effect anticipated when scheme component effects considered in combination However no deterioration i status of quality element anticipated at water body scale. Additional mitigation not required.	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.	ompliant - no eterioration in quality ement status nticipated
			Di ex gr te or pe cc	isturbing or mobilising xisting poor quality roundwater by emporary dewatering r depressurisation and ermanent groundwate ontrol	g Creating or altering of pathways along which existing poor quality groundwater can migrate	Disturbing or mobilisin existing poor quality groundwater by temporary dewatering depressurisation and permanent groundwate control	g Creating or altering of pathways along which existing poor quality groundwater can migra	Disturbing or mobilising existing poor quality groundwater by temporary dewatering of depressurisation and permanent groundwate control	Creating or altering of pathways along which existing poor quality groundwater 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	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 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 groundwate control	Creating or altering of pathways along poor quality groundwater can migrate watercourse wi be in pipe. 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	measurable changes expected. 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 poor quality groundwater by temporary dewatering depressurisation and permanent groundwate control	Creating or altering of pathways along privation of pathways along privation of the sisting poor quality of groundwater can migrate	Disturbing or mobilising existing poor quality groundwater by emporary dewatering or lepressurisation and bermanent groundwater control	Creating or altering of pathways along which existing poor quality groundwater 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				
	Chemical Saline Intrusions	e Good Good 2015	by Good m 5 Good re gr	lo measurable changes ue to embedded nitigation - i.e. no or ninimal ewatering/permanent roundwater control equired.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable changes to embedded mitigation no or minimal dewatering/permanent groundwater control required.	due - i.e. 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.	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 f. groundwater control require	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/perm anent groundwater control required.	na er	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/per manent groundwater control required.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/perma ent groundwater control required.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	e No measurable changes du 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.	TBM will provide tail grouting which minimises the risk of creating a pathway along the line of the tunnel.	No measurable changes due to embedded nitigation - i.e. no or ninimal dewatering/permanent groundwater control equired.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permane nt groundwater control required.	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 depth so low risk of significant changes in groundwater quality during dewatering.	Some localised effects from dewatering may be anticipated but these are unlikely to impact waterbo status due to embedded mitigation (using SCL techniques in a sequential controlled process with ground treatment as considered necessary). Impacts will be localised ar relatively short term. There no existing known saline water at depth so low risk o significant changes in groundwater quality during dewatering	m None identified	Localised adverse effect anticipated when scheme component effects considered in combination However no deterioration i status of quality element anticipated at water body scale. Additional mitigation not required.	TBC - Further investigations needed to understand the risks of drawing poor quality water into the aquifer due to construction over the Halite deposits.	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.	ompliant - no eterioration in quality ement status nticipated
	Chemical Drinking Water Protected Areas (DrWPAs)	Good Good 2015	by 5 Good M	lone in community area IA06.	None in communiț area MA06.	y None in community are MA06.	a 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.	None in community area MA06.	None in community area MA06. MA06.		None in community area MA06.	None in community area MA06. MA06.	a None in communiț area MA06.	/ None in community area MA07.	None in community area MA07.	None in community area MA07.	None in community area MA07.	None in community area MA07.	None in community area MA07.	None in community area MA07.	None in community area MA07.	None identified	No measurable change anticipated when scheme component effects considered in combination No measurable change in quality element anticipated Additional mitigation not required.	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	mpliant - no terioration in quality ement status tticipated
Chemical	Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Poor Good 2021	by Poor cla 7	lone present within or in lose proximity down- ydraulic gradient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	Sunbank Wood and Pon is located in close proximity west and dow hydraulic gradient of the proposed works. There potential for localised impact at this GWDTE ar the springs at Keepers Cottage, Sunbank Lane and further investigation required to determine t impact.	ds Sunbank Wood and Pon- located in close proximit west and down-hydrauli gradient of the proposed works. There is potential localised impact at this GWDTE and the springs Keepers Cottage, Sunbai Lane and further investigation is required determine the impact.	ds is Sunbank Wood and Pond is located in close y proximity west and down- hydraulic gradient of the proposed works. There is potential for localised impact at this GWDTE and the springs at Keepers Cottage, Sunbank Lane and further investigation i required to determine the impact.	Sunbank Wood and Ponds is located in close proximity west and down-hydraulic gradient of the proposed works. There is potential for localised impact at this GWDTE and the springs at Keepers Cottage, Sunbank Lane and further investigation is required to determine the impact.	None in community area MA06.	None in community area MA06.	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 gradien of ROI.	The groundwater impacts as a result of the station will be dominantly due to the earthworks of the cuttings and retaining walls which have been assessed separate. The remainder of the station will be built following these earthworks and therefore be "above ground". Whilst minor effects a anticipated (as a result of additional foundations etc) due to embedded mitigation strategies of the earthworks prior to the construction of the station, more the station will be station.	None in community area MA06.	None in community area MA06. MA06.	None present with or in close proximit down-hydraulic gradient of ROI. a Ponds adjacent to the site but unlikely to be impacted due to nature of the works.	None present within or in close proximity down- hydraulic gradient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	No dewatering along the tunnel itself and majority of works are below grour level. With embedded mitigation impacts to GWDTEs in ROI, no measurable changes are expected.	No dewatering along the tunnel itself and majority of works are below ground level. With embedded mitigation impacts to GWDTEs in ROI, no measurable changes are expected.	None present within or in lose proximity down- hydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	Some localised effects may be anticipated on Blackcarr Wood and Baguley Bottoms but these are unlikely to impact waterbody status due to embedded mitigation (use of secant piled walls through superficial deposits).	Some localised effects may be anticipated on Blackcar Wood and Baguley Bottom but these are unlikely to impact waterbody status d to embedded mitigation (u of secant piled walls throu superficial deposits).	y rr ns due identified use	Localised adverse effect anticipated when scheme component effects considered in combination However no deterioration i status of quality element anticipated at water body scale. Additional mitigation not required.	TBC - Further investigations needed to understand the n 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.	ompliant - no terioration in quality ement status ticipated
	Chemical Dependent Surface Water Body	Poor Good 2021	by 7 Poor cla hy	lone present within or in lose proximity down- ydraulic gradient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	None present within or close proximity down- hydraulic gradient of RC	n None present within or i close proximity down- I. hydraulic gradient of RO	n None present within or in close proximity down- l. hydraulic gradient of ROI.	None present within or in close proximity down- hydraulic gradient of ROI.	The temporary construction works have the potential to affect groundwater quality to Tributary of Timperley Brook 1, 2 and 3, and Timperley Brook. This will be mitigated through the implementation of the draft CoCP.	The temporary construction works have the potential to affect groundwater quality to Tributary of Timperley Brook 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.	None present within or in close proximity down- hydraulic gradient 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.	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. Timperley Brook is adjacent to th proposed work There is potent for it to be impacted but measurable changes are expected due to embedded mitigation.	k e s. al or in close proximit down-hydraulic gradient of ROI.	Fairywell Brook is located within the ROI but no measurable changes expected due to embedded mitigation.	Fairywell Brook is located within the ROI but no measurable changes expected due to embedded mitigation.	No dewatering along the tunnel itself and majority of works are below grour level. With embedded mitigation impacts to surface waterbodies in ROI, no measurable changes are expected.	No dewatering along the tunnel itself and majority of works are below ground level. With embedded I mitigation impacts of to surface I waterbodies in ROI, no measurable changes are expected.	None present within or in close proximity down- nydraulic gradient of ROI.	None present within or in close proximity down-hydraulic gradient of ROI.	The temporary construction works have the potential to affect groundwater quality to Baguley Brook and Tributary of Baguley Brook 1. This will be mitigated through the implementation of the draft CoCP, resulting in a negligible impact. The tributary is in culvert in the immediate vicinity of the vent shaft.	The temporary constructio works have the potential to affect groundwater quality Baguley Brook and Tributa of Baguley Brook 1. This wi be mitigated through the implementation of the dra CoCP, resulting in a negligi impact. The tributary is in culvert in the immediate vicinity of the vent shaft.	on oo y to ary <i>i</i> ill None aft ible	Adverse effect anticipated when scheme component effects considered in combination. There is a rist that there could be deterioration in the status the quality element at a water body scale. Requires consideration of additional mitigation and residual effect.	Further investigations needed to understand the groundwater levels of 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.	ompliant - no eterioration in quality ement status nticipated
	General Chemical Test	Poor Good 2023	by Poor in 7 Poor in m	ome localised effects hay be anticipated but hese are unlikely to npact waterbody status ue to embedded hitigation.	Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Some localised effects n be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Construction of Manches Airport High Speed Static cutting and retaining wa will remove a substantia of the superficial deposi creating a shorter pathw for surface water to discharge directly to the bedrock. This could caus change in groundwater chemistry. Considering t extent of the works compared to the aquifer areal extent with the implementation of the d CoCP.	ster on lls l part ts, ay e a e a he raft	Construction of Manchester Airport High Speed Station cutting and retaining walls will remove a substantial pa of the superficial deposits, y creating a shorter pathway for surface water to discharg directly to the bedrock. This could cause a change in groundwater chemistry. Considering the extent of th works compared to the aquifer areal extent with the implementation of the draft CoCP.	t Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation.	Construction of Manchester Airport High Speed Station cutting and retaining walls w remove a substantial part of the superficial deposits, creating a shorter pathway f surface water to discharge directly to the bedrock. This could cause a change in groundwater chemistry. Considering the extent of the works compared to the aquifer areal extent with the implementation of the draft CoCP.	III No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/perman ent groundwater control required. Majority of works for overbridge to take place above ground level.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/perm anent groundwater control required. Majority of works for overbridge to take place above ground level.	lo na er s o	No measurable changes due to scale of works relative to water body size	No measurable changes due to embedded mitigation - i.e. no or minimal changes due to scale of works relative to water body size. No measurable changes due to scale of works relative to water body size.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/perma ent groundwater control required. Majority of works for overbridge to take place above ground level.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	e No measurable changes du 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.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/perma nent groundwater control required.	No measurable changes due to embedded nitigation - i.e. no or ninimal dewatering/permanent groundwater control equired.	No measurable changes due to embedded mitigation - i.e. no or minimal dewatering/permane nt groundwater control required.	Some localised effects may be 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 quality are observed during groundwater monitoring programme).	Some localised effects may be anticipated but these ar unlikely to impact waterbo status due to embedded mitigation (a contingency action plan will be agreed with the Environment Ager prior to the start of construction, with agreed actions in place if changes water quality are observed during groundwater monitoring programme).	y ire ody ncy, None identified	Adverse effect anticipated when scheme component effects considered in combination. There is a risk that there could be deterioration in the status the quality element at a water body scale. Requires consideration of additional mitigation and residual effect.	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.	ompliant - no sterioration in quality ement status nticipated

Table A23: Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers (GB41201G101700) detailed impact assessment - effects on current status

Lower Mersey Basin and North Merseys	de Permo-Triassic Sandstone Aquifers	GB41201G101700) (Princ	ipal 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 (ID)	GB41201G101700-C-01	GB41201G101700-OF-02	GB41202G991700-HD-13a	GB41202G991700-HD-21a			
Overall Status (2015):	Poor			Scheme component type	Cutting Millington cutting	Overbridge Foundations	Highways Drainage discharge	Highways Drainage discharge			
						Willington Lane over bridge	S flighways drainage discharges into Culcheth Linear Drain i	B3207 WIIton Lane nighways urainage discharge to ground	Cumulative effects - effects on quality element from scheme		WED compliance outcome - notential for deterioration of
WFD Status Element	WFD Quality Element	2015 RBMP Cycle 2 Status	2015 RBMP Cycle 2 Status Objective	2019 Status	Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	in "Damming" of groundwater flow and reduction in groundwater contributions			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 current status of quality element at water body scale
	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.	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element 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.	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.
Quantitative	Groundwater Dependent Terrestria Ecosystems (GWDTEs) Test	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 gradie of ROI.	nt		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.	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.
	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 gradie of ROI.	nt		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.	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale.
					Disturbing or mobilising existing poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control quality groundwater can migrate	poor 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	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.	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element 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.	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.
Chemical	Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Te	Good	Good by 2015	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 gradie of ROI.	nt		None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.
	Chemical Dependent Surface Wate 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 gradie of ROI.	nt		None identified	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element 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 will remove some superficial deposits along the cutting, creating a shorter pathway for surface water discharge into the bedrock. This could cause a change in groundwater chemistry. However, no measurable change expected considering the scale of works relative to water scale and embedded mitigation.	e line of o No measurable change due to embedded mitigation - i.e. no or s are pody	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.	No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated.

Manchester and Cheshire East Permo	o-Triassic Sandstone Aquifers (GB120	fers (GB120G101100) detai 0G101100) (Principal aquife	ed impact assessment - effe r)	ects on current status	Detailed Im	pact Assessment	Detailed Imp	act Assessment	Detailed Imp	act Assessment	Detailed Im	npact Assessment	Detailed Im	act Assessment	Detailed Imp	act Assessment	Detailed Imp	act Assessment
EA Management Catchment: Overall Status (2015):	POOR		S	Scheme component (ID Scheme component type	e: GB1201G Bore Manche	ed Tunnel	GB1201G1 Ven The Hollie	101100-V1-02 It Shaft es vent shaft	GB1201G Ven Wilmslow R	t Shaft oad vent shaft	GB12010 Ve Birchfields	G101100-V1-04 ent Shaft s Road vent shaft	GB1201G Tunr Manchester Tunn	el Portal	GB1201G1 Cutting with re Ardwick South cu	01100-CR-06 taining structure tting retaining wall	GB1201G1 Retain Ardwick b	01100-R1-07 ing Wall
Overall Status Objective: WFD Status Element	GOOD BY 2021 WFD Quality Element	2015 RBMP Cycle 2 Statu	Impact type 1 2015 RBMP Cycle 2 Status Objective	from scheme component name	t: Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	d r "Damming" of groundwater flow and reduction in groundwater contributions er	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	Lowering of groundwater levels and potential reduction in groundwater nd contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	"Damming" of groundwater flow an reduction in groundwater contributions	Lowering of groundwater levels an potential reduction in groundwater d contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	nd er "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 control	"Damming" of groundwater flow ar 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	"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	"Damming" of groundwater flow and reduction in groundwater contributions
	Quantitative Saline Intrusions	Poor	Good by 2021	Poor	No dewatering along the tunnel itself a TBM in use - see embedded mitigation Thus, no lowering of groundwater leve anticipated.	The tunnel will consist of twin bore tunnels 12.8km in length, 7.55m interna diameter and maximum 45.0m bgl. The presence of the tunnel will have no measurable change on saline intrusion as this issue is associated with long-term abstractions.	^{al} Minimal dewatering required due to use of full depth diaphragm walls at The Hollies vent shaft (internal dewatering only).	e Unlikely to be affected at a water bod scale compared to scale of works.	The construction methodology of the vent shaft assumes that external dewatering is not permitted. Diaphragm walls are not proposed as vent shaft is located in the Sherwood Sandstone. Temporary dewatering during construction could lead to upconing of deeper poor quality (connate) from underlying formation such as coal measures or drawdown of near surface (anthropogenically contaminated) water	Unlikely to be affected at a water body scale compared to scale of works.	Shaft located in an isolated block with no flow boundaries on three sides. The construction methodology of the vent shaft assumes that external dewaterin is not permitted (diaphragm walls are not proposed). Temporary lowering of groundwater levels could lead to drawing in of poor quality water from the adjacent Etruria Formation or coal measures aquifer blocks.	e Vinikely to be affected at a water body scale compared to scale of works.	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.	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.	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.
	Quantitative Water Balance	Good	Good by 2015	Good	No dewatering along the tunnel itself a TBM in use - see embedded mitigation Thus, no lowering of groundwater leve anticipated.	The tunnel creates an extended cylinder of no flow leading to changes in groundwater level due to a partial barrier to flow created by the tunnel. This leads to adverse localised effects for the Appleby Group, Warwickshire Group and the Cumbrian Coast Group.	r Internal dewatering from the diaphragm walls will be small quantities and temporary in nature, therefore unlikely to be affected at a water body scale.	n Unlikely to be affected at a water body scale compared to scale of works.	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.	Unlikely to be affected at a water body scale compared to scale of works.	Construction methodology (such as grouting, dewatering with ejector wells will minimise the dewatering requirements. Dewatering volume wil small and temporary in nature, therefore unlikely to be affected at a water body scale.	 S) Unlikely to be affected at a water body scale compared to scale of works. Basement fan room could form a barrie to groundwater flow in the superficial glacial till which could lead to localised displacement of groundwater and increase the risk of groundwater flooding. 	No measurable change on quantitative water balance due to scale of works relative to water body scale.	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.	ed 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 upgradien 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 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).
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 intern diameter and maximum 45.0m bgl. No dewatering along the tunnel itself as TBM in use - see embedded mitigation Thus, no lowering of groundwater leve 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 groundwat flow to Stenner Woods and Milgate Fields, Didsbury and Fletcher Moss an Wrengate Wood & Heycroft when considering scale of works compared the water body scale.	ter hd to	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 intern diameter and maximum 45.0m bgl. No dewatering along the tunnel itself as TBM in use - see embedded mitigation Thus, no lowering of groundwater leve anticipated.	At shallow depth the tunnel may act as a localised groundwater dam, but no measurable change expected on flow to surface water bodies.	 Internal dewatering from the shaft will be small quantities and temporary in nature, therefore although there may be some short term, localised effects on flow in the River Mersey and Tributary or River Mersey 2, no measurable change at the water body scale is expected. 	e River Mersey and Tributary of River Mersey 2 are unlikely to be affected a water body scale when compared to t scale of works.	t a t a t a t a t a t a t a t a t a t a	Unlikely to be affected at a water body scale compared to scale of works.	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 t shaft and since internal dewatering fro the shaft will be small quantities and temporary in nature, no measurable change is expected on the surface wat bodies.	ok (the omUnlikely to be affected at a water body scale compared to scale of works.ter	Corn Brook is located within the ROI an lowering of groundwater levels may reduce contribution to this watercourse Corn Brook is culverted in the vicinity o the portal, and therefore, it is unlikely t receive groundwater flow in this area. No measurable change is expected from the portal on the river flow.	Corn Brook is located within the ROI at groundwater that would otherwise discharge into this watercourse may b intercepted by below ground structure However, Corn Brook is culverted in the vicinity of the portal and therefore, it is unlikely to receive groundwater flow in this area. No measurable change is expected from the portal on the river flow.	nd Corn Brook is located within the ROI and may receive reduced groundwater levels. Corn Brook is culverted in the es. 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 so is unlikely to receive lowered groundwater levels.	Corn Brook is located within the ROI and groundwater that would otherwise discharge into this watercourse may be 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 downgradient of the cutting retaining wall which may intercept some groundwater flow to the watercourse. On the scale of the watercourse, no measurable change is expected.	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. River Medlock is outside of the ROI so is unlikely to receive lowered groundwater levels.	Corn Brook is located within the ROI and groundwater that would otherwise discharge into this watercourse may be 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 downgradient of the cutting retaining wall which may intercept some groundwater flow to the watercourse. On the scale of the watercourse, no measurable change is expected.
					Disturbing or mobilising existing poo quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	or 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	or 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	Disturbing or mobilising existing po quality groundwater by temporary dewatering or depressurisation an permanent groundwater control	oor y 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	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 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	Poor	Good by 2021	Poor	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	TBM will provide tail grouting which minimises the risk of creating a pathway along the line of the tunnel.	y Minimal dewatering required due to use of full depth diaphragm walls at The Hollies vent shaft (internal dewatering only).	e Due to construction methodology any pathways would be sealed once the concrete had set. Unlikely to impact waterbody status due to embedded mitigation.	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.	Shaft located in an isolated block with no flow boundaries on three sides. Temporary lowering of groundwater 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 water quality. However, the construction methodology of the vent shaft assume that external dewatering is not permitted and considering the limited period of dewatering, the waterbody status is unlikely to be impacted.	Some minor localised, temporary effects may be anticipated but construction a 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.	s 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.	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	Chemical Drinking Water Protected Areas (DrWPAs) Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Good	Good by 2015 Good by 2015	Good	None in community area MA07. No dewatering along the tunnel itself and majority of works are below groun level. With embedded mitigation impacts, no measurable changes to GWDTEs in ROI are expected.	None in community area MA07. No dewatering along the tunnel itself and majority of works are below ground level. With embedded mitigation impacts, no measurable changes to GWDTEs in ROI are expected.	 None in community area MA07. 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 the draft CoCP, so no measurable change is expected. 	 None in community area MA07. Stenner Woods and Milgate Fields, Didsbury and Fletcher Moss and Wrengate Wood & Heycroft are locate within land required for construction the proposed works. There is potential for groundwater quality to these GWDTEs to be effected. This will be managed through implementation of the draft CoCP, so no measurable change is expected. 	ed of None present within ROI of vent shaft dewatering.	None in community area MA07. None present within ROI of vent shaft dewatering.	None in community area MA07. None present within ROI of vent shaft dewatering.	None in community area MA07. None present within ROI of vent shaft dewatering.	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 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 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.
	Chemical Dependent Surface Water Body	Good	Good by 2015	Good	No dewatering along the tunnel itself and majority of works are below groun 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.	The discharge location for dewatering during construction of the vent shaft ha not yet been determined, but it is currently assumed to be Tributary of River Mersey 2. The dewatering discharge could lead to temporary and localised deterioration in water quality in the receiving watercourse.	Shaft will be constructed using full de diaphragm walls which will minimise trisk of creating pathways.	pth Cringle Brook is in culvert in the vicinity the of the shaft and therefore no impacts likely.	Shaft will be constructed using SCL which will seal pathways, minimising th risk of pathways.	Cringle Brook and Fallowfield Brook ar e both in culvert in the vicinity of the sha and therefore no impacts likely.	re Shaft will be constructed using SCL aft which will seal pathways, minimising the risk of pathways.	Corn Brook is located within the ROI and lowering of groundwater levels may reduce contribution to this watercourse However, 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.	Corn Brook is located within the ROI at groundwater that would otherwise 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 measurable change on river flow from the portal is expected.	nd e 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.	Corn Brook is in culvert through the study area so no measurable change or 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.	Corn Brook is culverted though the r 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.	Corn Brook is in culvert through the study area so no measurable change on 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.
	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.	Some minor localised effects may be 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 quality are observed during groundwater monitoring programme).	Some minor localised effects may be 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 star of construction, with agreed actions in place if changes in water quality are observed during groundwater monitoring programme).	Some minor, localised effects may be 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 quality are observed during groundwater monitoring programme).	Some minor, localised effects may be 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 quality are observed during groundwater monitoring programme).	Some minor, localised effects may be 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 quality are observed during groundwater monitoring programme).	Some minor, localised effects may be 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 quality are observed during groundwater monitoring programme).	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 Perm	no-Triassic Sandstone Aquifers (GB120)G101100) (Principal aquifer)	effects on current status	Detailed Imp	act Assessment	Detailed Impa	act Assessment	Detailed Impa	act Assessment	Detailed Impa	act Assessment
EA Management Catchment: Overall Status (2015):	North West GW POOR		Scheme component (ID Scheme component typ	D): GB1201G1 e: Cutting with residue	I01100-CR-08 etaining structure	GB1201G10 Retain	01100-CR-08A hing wall	GB1201G1 Cutting with re	01100-CR-10 taining structure	GB1201G1 Retain	101100-RT-11 ning Wall
Overall Status Objective: WFD Status Element	GOOD BY 2021 WFD Quality Element	Impact type 2015 RBMP Cycle 2 Status 2015 RBMP Cycle 2 Status	Scheme component nam pe from scheme componen us 2019 Status	e: Ardwick North cu t: Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	utting retaining wall "Damming" of groundwater flow and reduction in groundwater contributions	Ardwick Access R 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	Ardwick North cu 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	Ardwick embankr Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	ment retaining wa "Damming" of gr reduction i cont
	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.	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.	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.	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	No measurable ch saline intrusions d relative to water b
	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 upgradien 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.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable ch embedded mitigat minimal dewaterir groundwater cont
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 with proximity down-hy ROI.
	Quantitative Dependent Surface Water Body	Good Good by 2015	Good	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. River Medlock is outside of the ROI so is unlikely to receive lowered groundwated levels.	Corn Brook is located within the ROI and groundwater that would otherwise discharge into this watercourse may be 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 downgradient of the cutting retaining wall which may intercept some groundwater flow to the watercourse. On the scale of the watercourse, 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.	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.	River Medlock is outside of the ROI but downgradient of the cutting retaining wall which may intercept some groundwater flow to the watercourse. On the scale of the watercourse, no measurable change is expected.	None present within or in close proximity down-hydraulic gradient of ROI.	None present with proximity down-hy ROI.
				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 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 poor 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 poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	r Creating or alt along which ex groundwat
	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.	No measurable ch works relative to v
	Chemical Drinking Water	Cood Cood by 2015	Card								
	Protected Areas (DrWPAs)	Good Good by 2015	Good	None in community area MA07708.	None in community area MA07708.	None in community area MA07708.	None in community area MA07708.	None in community area MA07708.	None in community area MA07708.	None in community area MA07708.	
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 with proximity down-hy ROI.
	Chemical Dependent Surface Water Body	Good Good by 2015	Good	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.	Corn Brook is in culvert through the study area so no measurable change or 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.	n For 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 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 with proximity down-hy 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 eff anticipated but the impact waterbody embedded mitigat

Permo-	Triassic Sandstone Aquifers (GB120G North West GW POOR	i101100) (Principal aquife	r)	Scheme component (ID) Scheme component type	Detailed Impa GB1201G1 Cutting with re	act Assessment 01100-CR-08 taining structure	Detailed Impa GB1201G10 Retain	act Assessment 1100-CR-08A ing wall	Detailed Impa GB1201G1 Cutting with re	act Assessment 01100-CR-10 taining structure	Detailed Impa GB1201G1 Retain	act Assessment 01100-RT-11 ing Wall
	GOOD BY 2021 WFD Quality Element	2015 RBMP Cycle 2 Status	Impact type	Scheme component name e from scheme component	Ardwick North cu Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	tting retaining wall "Damming" of groundwater flow and reduction in groundwater contributions	Ardwick Access R 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	Ardwick North cu Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	tting retaining wall "Damming" of groundwater flow and reduction in groundwater contributions	Ardwick embanki Lowering of groundwater levels and potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	ment retaining wa "Damming" of gr reduction i conti
	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.	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.	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.	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	No measurable ch saline intrusions d relative to water b
	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 upgradien 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 upgradient 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.	No measurable change due to embedded mitigation - i.e. no or minimal dewatering/permanent groundwater control required.	No measurable ch embedded mitigat minimal dewaterir groundwater cont
	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 with proximity down-hy ROI.
	Quantitative Dependent Surface Water Body	Good	Good by 2015	Good	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. River Medlock is outside of the ROI so is unlikely to receive lowered groundwater levels.	Corn Brook is located within the ROI and groundwater that would otherwise discharge into this watercourse may be 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 downgradient of the cutting retaining wall which may intercept some groundwater flow to the watercourse. On the scale of the watercourse, 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.	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.	River Medlock is outside of the ROI but downgradient of the cutting retaining wall which may intercept some groundwater flow to the watercourse. On the scale of the watercourse, no measurable change is expected.	None present within or in close proximity down-hydraulic gradient of ROI.	None present with proximity down-hy ROI.
					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 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 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 poor quality groundwater by temporary dewatering or depressurisation and permanent groundwater control	Creating or alt along which ex groundwat
	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.	No measurable ch works relative to v
	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 communi
	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 with proximity down-hy ROI.
	Chemical Dependent Surface Water Body	Good	Good by 2015	Good	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.	Corn Brook is in culvert through the study area so no measurable change on the watercourse is expected. River Medlock is within land required fo construction of the proposed works. There is potential for these to be impacted however due to embedded mitigation, no measurable change is expected.	r 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 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 with proximity down-hy 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 eff anticipated but the impact waterbody embedded mitigat



Table A24: Manchester and Cheshire E Manchester and Cheshire East Permo- EA Management Catchment: Overall Status (2015):	ast Permo-Triassic Sandstone Aqui Triassic Sandstone Aquifers (GB12) North West GW	uifers (GB120G101100) detail 20G101100) (Principal aquife	led impact assessment - ef r)	ffects on current status Scheme component (ID) Scheme component type	Detailed Impact Assessment GB1201G101100-VF-13 Viaduct Foundations	Detailed Impact Assessment GB1201G101100-VF-14 Viaduct Foundations	Detailed Impa GB1201G1 Station	act Assessment l01100-ST-15 n/Depot	Detailed Im GB1201G Retai	oact Assessment 101100-RT-16 ning Wall	Detailed Imp GB1201G Retain	oact Assessment 101100-RT-17 ning Wall	Detailed Impact Assessment GB1201G101100-OF-18 Overbridge Foundations	Detailed Impact Assessment GB1201G101100-OF-19 Overbridge Foundations	Detailed Im GB12010 Reta	npact Assessment G101100-RT-20 aining Wall	Detailed Impa GB1201G1 Retain	nct Assessment 01100-RT-21 ing Wall
Overall Status Objective: WFD Status Element	GOOD BY 2021 WFD Quality Element	2015 RBMP Cycle 2 Status	Impact typ 2015 RBMP Cycle 2 Statu Objective	Scheme component name e from scheme component	E Piccadilly Approach viaduct	Piccadilly Station viaduct nd "Damming" of groundwater flow and reduction in groundwater contributions	Manchester Piccadil 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 ar reduction in groundwater contributions	Ashton Li 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	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	nd "Damming" of groundwater flow and reduction in groundwater contributions	 B6469 Fairfield Street offline overbr "Damming" of groundwater flow a reduction in groundwater contributions 	dge St Andrews St Lowering of groundwater levels an potential reduction in groundwater contributions to surface water bodies, GWDTE or groundwater abstractions by temporary dewatering/permanent groundwater control	treet retaining wall ad er "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	"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.	No measurable change expected from saline intrusions due to scale and depth of works relative to water body scale.	No measurable change expected from saline intrusions due to scale and dept of works relative to water body scale.	No measurable change expected from saline intrusions due to scale and dept of works relative to water body scale.	No measurable change expected from saline intrusions due to scale and depth of works relative to water body scale.	No measurable change expected from saline intrusions due to scale of works relative to water body scale.	No measurable change expected fron saline intrusions due to scale of works relative to water body scale.	n 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 expected from saline intrusions due to scale of works relative to water body scale.	n 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.	No measurable change expected from saline intrusions due to scale of works relative to water body scale.
Quantitative	Quantitative Water Balance	Good	Good by 2015	Good	Piling may obstruct groundwater flow the uppermost section of the aquifer which could impact on local groundwater levels. However, the viaduct is approximately parallel to the topographic gradient and groundwate flow is altered rather than impeded. N measurable change expected on groundwater levels from viaduct piled foundations in the superficial deposits	 in Piling may obstruct groundwater flow in the uppermost section of the aquifer which could impact on local groundwater levels. However, the e viaduct is approximately parallel to the topographic gradient and groundwater lo flow is altered rather than impeded. No measurable change expected on groundwater levels from viaduct piled s. 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.	A substantial length of the basement below the station could form a significant barrier to groundwater flow in the superficial deposits in the local area. Groundwater levels could rise or the upgradient side of the structures and may lead to groundwater flooding at the surface during high groundwater levels, or groundwater flooding of existing basements. Some minor localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation (refer to the flood risk assessment, Volume 5, WR-005-0MA08).	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 th internal watering is unlikely to impact waterbody status due to embedded mitigation.	The part cut-and-cover tunnel, part retained cutting structure could form a barrier to groundwater flow in the glacial till and the top of the bedrock aquifer in the local area. This has the potential for a minor temporary impact on the glacial till. Considering the exten of the bedrock aquifer, no measurable change from the interception of groundwater flow is expected.	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.	d llt, 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 impa 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. Ct 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. 	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.
	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.	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	e Good	Good by 2015	Good	River Medlock passes under Piccadilly Approach 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 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.	River Medlock may receive reduced baseflow as the station could form a barrier to groundwater flow. 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 it is unlikely that the watercourse wou be affected by the temporary dewatering. No measurable change is expected.	d Some localised effects may be anticipated but these are unlikely to impact waterbody status due to embedded mitigation (internal dewatering only).	River Medlock may receive reduced baseflow as the Ashton Line connection could form a barrier to groundwater flow. Considering the scale of the River Medlock catchment and the embedded mitigation, no measurable change is expected.	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.	River Medlock is located downgradier of the retaining wall which is designed perpendicular to groundwater flow. It may form a barrier to groundwater flo and therefore reduce baseflow to the River Medlock. Considering the scale of the upstream River Medlock catchment and the embedded mitigation, the reduction in baseflow is unlikely to significantly affect the watercourse.	nt d c ow No measurable change on groundwate flow to the River Medlock expected due of to scale and depth of works relative to nt water body scale.	r No measurable change on groundwa flow to the River Medlock expected du to scale and depth of works relative to water body scale.	er e e e e e e e e a significantly affect the watercourse.	River Medlock is located downgradient of the retaining wall which is designed perpendicular to groundwater flow. It may form a barrier to groundwater flow and therefore reduce baseflow to the River Medlock. Considering the scale of the upstream River Medlock catchment and the embedded mitigation, the reduction in baseflow is unlikely to significantly affect 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.
					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 poor 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	or 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	or 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	Creating or altering of pathways along which existing poor quality groundwater can migrate	Disturbing or mobilising existing po quality groundwater by temporar dewatering or depressurisation an permanent groundwater control	oor Y along which existing poor quality groundwater 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
	Chemical Saline Intrusions	Poor	Good by 2021	Poor	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 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 o works relative to water body scale.	No measurable change due to of 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.	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 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.	None in community area MA08.	None in community area MA08.	None in community area MA08.	None in community area MA08.	None in community area MA08.	None in community area MA08.
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.	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	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 of temporary casing).	ed 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).	d No measurable change to River Medlock due to scale of works relative to water body scale.	< No measurable change to River Medlo due to scale of works relative to water body scale.	ock No measurable change to River Medloo due to scale of works relative to water body scale.	k No measurable change to River Medloc due to scale of works relative to water body scale.	< No measurable change to River Medloc due to scale of works relative to water body scale.	k No measurable change to River Medle due to scale of works relative to water body scale.	ock r n n n ninimal dewatering/permanent groundwater control required.	k No measurable change to River Medle due to embedded mitigation - i.e. no o minimal dewatering/permanent groundwater control required.	ck r due to scale of works relative to water body scale.	ock No measurable change to River Medloc 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.	No measurable change to River Medlock due to scale of works relative to water body scale.
	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.	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 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.

Table A24: Manchester and Cheshire Fast Permo-Triassic Sandstone Aquifers (GB120G101100) detailed impact assessment - effects on current status

Manchester and Cheshire East Perm	no-Triassic Sandstone Aquifers (GB1)	20G101100) (Principal aquif	er)		Detailed Imp	act Assessment	Detailed Imp	act Assessment			Detailed Impact Assessment Outcome	2	
EA Management Catchment:	North West GW			Scheme component (ID):	GB1201G1	01100-RT-22	GB1201G1	01100-RT-23	_				
Overall Status (2015):	POOR		S	Scheme component type: cheme component name:	Retair Sparkle Stree	ning Wall et retaining wall	Retain Store Street	retaining wall	_				
Overall Status Objective: WFD Status Element	GOOD BY 2021 WFD Quality Element	2015 RBMP Cycle 2 Statu	Impact type f	from scheme component: 2019 Status	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	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	Cumulative effects - effects on quality element from scheme component(s) located in other WFD water bodies	y 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
	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.	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	Localised adverse effect anticipated when scheme component effects considered in combination. However no deterioration in status of quality element anticipated at water body scale	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 quality element status anticipated
Quantitative	Quantitative Water Balance	Good	Good by 2015	Good	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.	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.	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 ground investigation required to understand the potential groundwater levels and heterogeneous nature of the aquifer in this area.	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
	Groundwater Dependent Terrestrial Ecosystems (GWDTE 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 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 quality element status anticipated
	Quantitative Dependent Surfac Water Body	e 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.	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.	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.	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 th 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 quality 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 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	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 no deterioration in status of quality element anticipated at water body scale	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 quality element status anticipated
	Chemical Drinking Water		Condhuceda		Nono in community and theory			None in community and there	None identified	N1/A	None	N1/A	Compliant - no deterioration in quality
Chemical	Protected Areas (DrWPAs) Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Good	Good by 2015 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 identified	N/A No measurable change anticipated when scheme component effects considered in combination. No measurable change in quality element anticipated. Additional mitigation not required.	None	N/A 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 quality element status anticipated
	Chemical Dependent Surface Water Body	Good	Good by 2015	Good	No measurable change to River Medlocl 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.	< No measurable change to River Medlock due to scale of works relative to water body scale.	No measurable change to River Medloc due to scale of works relative to water body scale.	k None identified	Localised adverse effect when scheme component effects considered in combination However no deterioration 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 quality 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 no deterioration in status of quality element anticipated at water body scale 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	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

Table A25: River Bollin (River Dean to Ashley	/ Mill)	(GB112069061381)	detailed im	nact assessment	effects on	future status ob	iectives
Table A23. Niver Dumin		,		uctaneu mij	pace assessment.		iuture status on	Jecuves

Timperley Brook (GB112069061260)				Effects on attainment of status objectives (Test B)												Outcome				
	RNAGs /	Measures scoped in as potentially at risk from Pro	posed Scheme	River Bollin		Tributary of River Bollin 2		Tril	Tributary of River Bollin 3		Tributary of River Bollin 5									
WFD status objective element	RNAG / Measure ID	Relevant WFD Quality Element / RNAG(s)	Title / Details	River Bollin Offline Bridge Widening (GB112069061381- MW-01-UB-01) HD-01)	alls River Bollin East Viaduct V-01- (GB112069061381-MW-01-VD- 01)	ment (GB112069061381- T-02-RE-01)	Offline culvert (GB112069061381-T-02-CV-0 ⁻	M56 East Tunnel 1) (GB112069061381-T-02-BT-01) T-03-RE-02)	0061381- M56 Drain Offline Cul (GB112069061381-T-03-0	vert M56 Offline Culvert V-02) (GB112069061381-T-03-CV-0	M56 East Tunnel 03) (GB112069061381-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-0	O1) 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 bod 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)	572040	Invertebrates	Activity is Land drainage - structures and National SWMI Header is Physical modification	Scheme element does not directly a	ect this RNAG	e element does not directly affect this RNAG	Risk to RNAG - Due to additiona culverts - requires further assessm and potential mitigation	In ent	Risk to RNAG - Due to addi culverts - requires further ass and potential mitigatio	ional Risk to RNAG - Due to additiona essment culverts - requires further assessm and potential mitigation	al nent		Risk to RNAG - Due to additional culverts - requires further assessmen and potential mitigation			None	Risk to RNAG	Further assessment is to be complete before the risks and mitigation can b confirmed. RNAG noted to be suspected and subject to investigatic further discussion with Environmen Agency required.	Widespread risk to RNAG anticipated until further assessment completed. Potential ris to RNAG at water body scale.	Non-Compliant - risk of preventing future attainment of quality element status objective.
RBMP Programme of measures (PoM)	No Programme of me	asures are considered to be at risk from the Proposed	Scheme for this water body.																	Compliant - no prevention of future attainment of quality element status objective.

Table A26: Timperley Brook (GB112069061260) detailed impact assessment - effects on future status objectives

Timperley Brook (GB112069061260)					Effects on attainment of	status objectives (Test B)		Outcome					
	RNAGS	/ Measures scoped in as potentially at risk from Pr	oposed Scheme		Timperley Bro	ook (Moderate)							
WFD status objective element	RNAG / Measure ID	Relevant WFD Quality Element / RNAG(s)	Title / Details	Timperley Brook Inverted SiphonTimperley Brook Realignment(GB112069061260-MW-01-IS-01)(GB112069061260-MW-02-IS-01)		Manchester Airport High Speed Station Cutting Retaining Wall (GB112069061260-MW-01-RW-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)		Overall effect at water body scale	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)	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 of Brooks Drive.	N/A	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 diffuse pollution pressure due to road runoff (as calculated by HEWRAT) - requires mitigation over and above standard drainage design.	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 deterioration in status of quality element at water body scale.	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.	Scheme element does not directly affect delivery of any identified HMWB mitigation measures	Benefit to HMWB MM - watercourse realignment is in section of watercourse identified for delivery of theis measure	Scheme element does not directly affect delive	ry 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) (GB112069061152					Effects on attainment of status objectives (Test	B)	Outcome						
	RNAGs /	Measures scoped in as potentially at risk from Pro	posed Scheme		River Medlock (High)		Cumulative effects - effects on RNAG						
WFD status objective element	RNAG/measure ID	Relevant WFD quality element/RNAG(s)	Title/details	Piccadilly approach viaduct (GB112069061152-MW-01-VD-01)	New Fairfield Street offline overbridge (GB112069061152-MW-01-OB-01)	Daylighting of existing culvert (GB112069061152- MW-01-DY-01)	/ Measure from scheme component(s) located in other WFD water bodies	Overall effect at water body scale	Additional mitigation requirements	scale following consideration of additional mitigation	y 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.		

Table A28: Manchester and Cheshire East	st Permo-Triassic	Sandstone Aquifers (GB120G101 ⁴	100) detailed impact assessm	nent - effects on future status obj	ectives													
Manchester and Cheshire East Permo-Triassi	ic Sandstone Aquife	ers (GB120G101100) (Principal aquife	er)				Effects on attainment of status objectives ((Test B)								Outcome		
WFD status objective element	RNAGs / Mea RNAG/measure ID	asures scoped in as potentially at ris Relevant WFD quality element/RNAG(s)	k from 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	g 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 - potential to prevent future attainment of status objective of quality element
Reasons for Not Achieving Good (RNAG) 4	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 o upwelling of saline water or draw in poorer quality water from the Collyhurst Formation or Coal Measures is minimised.	With the construction methodology (the SCL will be installed to the Sherwood Sandstone 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 Collyhurst Formation or Coal Measures is minimised.	With the construction methodology (the SC 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 minimised.	L No effect when balanced against embedded mitigation. e is	No effect when balanced against embedded mitigation.	d 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.	d N/A	Localised 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 future attainment of quality element status objective
Reasons for Not Achieving Good (RNAG) 5	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 o upwelling of saline water or draw in poorer quality water from the Collyhurst Formation or Coal Measures is minimised.	With the construction methodology (the SCL will be installed to the Sherwood Sandstone 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 Collyhurst Formation or Coal Measures is minimised.	With the construction methodology (the SC 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 minimised.	L No effect when balanced against embedded mitigation. e is	No effect when balanced against embedded mitigation.	d 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.	d N/A	Localised 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 future attainment of quality element status objective
RBMP Programme of measures (PoM)	The	ere are no Programme of measures for	this water body.															