Draft Drainage and Wastewater Management Plan

Water Framework Directive Regulations Compliance Assessment

Report for United Utilities Water

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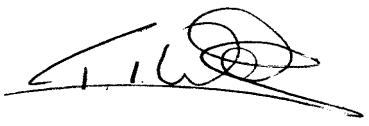

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List of Acronyms

Abbreviation	Definition
ALC	Agricultural Land Classification
AONB	Area of Outstanding Natural Beauty
AQMA	Air Quality Management Area
BAP	Biodiversity Action Plan
BEIS	Department for Business, Energy & Industrial Strategy
BNG	Biodiversity Net Gain
CaBA	Catchment Based Approach
CAMS	Catchment Abstraction Management Strategy
CAPEX	Capital expenditures
CaST	Catchment System Thinking
CFC	Chlorofluorocarbon
CFMP	Catchment Flood Management Plan
CO2	Carbon Dioxide
CO2e	Carbon Dioxide Equivalent
CROW	Countryside and Rights of Way
cSAC	candidate Special Area of Conservation
DCMS	Department for Culture, Media and Sport
dDWMP	draft Drainage and Wastewater Management Plan
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DIN	Dissolved Inorganic Nitrogen
DO	Dissolved Oxygen
DWMP	Drainage and Wastewater Management Plan
DWMP	Drainage and Wastewater Management Plan
EC	European Commission
EIA	Environmental Impact Assessment
EMP	Eel Management Plan
ESA	Environmentally Sensitive Area
FRMP	Flood Risk Management Plan
GCR	Geological Conservation Review
GES	Good Environmental Status
GHG	Greenhouse Gas
GIS	Geographical Information Systems
Gwh	Gigawatt Hours
HE	Historic England
HES	Historic Environment Scotland
HRA	Habitats Regulations Assessment
HRA	Habitats Regulations Assessment
Kt	Kilo Tonnes
l/hd/d	Litres per head per day
LGAP	Local Geodiversity Action Plans

LWS	Local Wildlife Site
MCZ	Marine Conservation Zone
MHCLG	Ministry for Housing, Communities and Local Government
Ml/d	Mega litres per day
Mt	Million tonnes
MTAN	Minerals Technical Advice Note
Mtoe	Million tonnes of equivalent
MWe	Megawatt electrical
NCA	National Character Area
NE	Natural England
NNR	National Nature Reserve
NOx	Nitrogen Oxide
NPPF	National Policy Planning Framework
NRW	Natural Resources Wales
NTS	Non-Technical Summary
NVZ	Nitrate Vulnerable Zone
ODS	Ozone Depleting Substances
OfWAT	Office of Water Services
OPEX	Operating expenditures
PBDE	Polybrominated Diphenyl Ether
PFOS	Perfluorooctane Sulfonic Acid and its salts
PPW	Planning Policy Wales
pSAC	possible Special Area of Conservation
pSPA	potential Special Protection Area
RBD	River Basin District
RBMP	River Basin Management Plan
RBMP	River Basin Management Plan
RIG	Regionally Important Geological and Geomorphological
ROWMP	Public Rights of Way Improvement Plan
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SAP	Sector Adaptation Plan
SCaMP	Sustainable Catchment Management Programme
SCI	Site of Community Importance
SEA	Strategic Environmental Assessment
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection Agency
SIP	Site Improvement Plans
SMP	Shoreline Management Plan
SoNaRR	State of Natural Resources Report
SPA	Special Protection Area
SPG	Strategic Planning Group
sq km	Square kilometre
SSSI	Site of Special Scientific Interest

SuDS	Sustainable Drainage Systems
TAN	Technical Advice Note
TPU	Tactical Planning Unit
UKCIP	United Kingdom Climate Impacts Programme
UKCP	United Kingdom Climate Projections
UKTAG	United Kingdom Technical Advisory Group
UKWIR	United Kingdom Water Industry Research
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UUW	United Utilities Water
UUW	United Utilities Water
WaSC	Water and Sewerage Company
WFD	Water Framework Directive
WFD	Water Framework Directive
WHS	World Heritage Site
WINEP	Water Industry National Environment Programme
WPZ	Water Protection Zone
WRMP	Water Resource Management Plan
WRZ	Water Resource Zone

1 Introduction

Section 1.1 sets out the background and purpose of this report. Section 1.2 explains the Water Framework Direction (WFD); and Section 1.3 explains its context in the Drainage and Wastewater Management Plan (DWMP).

1.1 Background and purpose of report

United Utilities Water (UUW), along with all other UK water and wastewater service suppliers in England and Wales, have committed to delivering a DWMP, with this draft plan published in summer 2022 and the final plan to be published in spring 2023. Through following the published framework for building a DWMP[1], the DWMP has set out a long-term strategic plan of how UUW intend to maintain a robust and resilient drainage and wastewater system for their operation area. This report documents the WFD regulations compliance of the UUW draft DWMP.

1.2 The WFD

The WFD[2] is an EU Directive establishing a framework for Community action in the field of water policy which aims to protect and improve the water environment. The Directive was brought into UK law in 2003 and subsequently revoked by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 in England and Wales. From this point forward “WFD” refers to the legislation applicable to England and Wales, not the EU Directive.

1.3 WFD requirements for DWMP

The framework for the production of DWMPs outlines that, in producing the DWMP, water companies must take into account the WFD along with other environmental legislation. There must also be regard to other Risk Management Authority’s plans, including River Basin Management Plans (RBMPs) in order to demonstrate consistencies with national and regional strategies.

Whilst DWMPs do not formally require a Strategic Environmental Assessment (SEA)[3], there is an expectation that an SEA will be produced in order to understand the most preferable interventions from an environmental perspective. As such, the WFD assessment is also required to support the SEA. SEA, Habitat Regulation Assessment (HRA) and WFD assessments have therefore been applied on a voluntary basis by UUW.

[1] A framework for the production of Drainage and Wastewater Management Plans (2018) Atkins
[2] European Union (2000) Directive 2000/60/EC of the European Parliament and of the Council
[3] A framework for the production of Drainage and Wastewater Management Plans (2018) Atkins

2 WFD Compliance Assessment Methodology

The purpose of this section is to set out the approach used when assessing the WFD compliance of the UUW draft DWMP. Section 2.1 identifies the WFD Assessment Objectives used to assess the draft DWMP and options within. Section 2.2 describes the proportionate level of detail for the assessments.

The assessment approach presented here has been implemented at the Tactical Planning Unit (TPU) scale to assess WFD compliance of the strategic and complex options and transfer options within the programme of works[4]. This has then been used to assess the WFD compliance at the whole DWMP level.

Note: There a small number of TPUs which have not been assessed and will therefore be included between draft and final DWMP

Note: The WFD compliance assessment has not been used as a comparative tool to compare options in the context of selecting the draft DWMP, instead it is used just to assess the WFD compliance of the proposed programme of measures.

All assessments have been undertaken for the reporting unit of a WFD water body. The appropriate baseline information for water bodies status and targets is as set out using 2021 WFD status as published in the third cycle of RBMPs (RBMP3). It is worth noting that the RBMP3 is expected to be published later in 2022, however, it is our current understanding[5] that the RBMP3 status, when published, will match the 2019 interim status as currently published. In the absence of the RBMP3 water body measures, assessments will be undertaken against the RBMP2 water body measures. The WFD assessments will be aligned with the RBMP3 water body measures when they are available.

2.1 WFD Assessment Objectives for testing compliance

This section provides the WFD Assessment Objectives used to test each of the strategic and complex options and transfer options within the draft DWMP (Section 2.1.1). This section also provides the additional, progressive WFD Assessment Objectives that the DWMP has been tested against at a whole plan-level (Section 2.1.2).

2.1.1 Option-level WFD Assessment Objectives

Principally, the WFD acts as an indicator of constraint and determines where the DWMP or options within do not meet WFD Objectives set out in Regulation 13 of the WFD Regulations. The principle WFD Assessment Objectives that the DWMP (both options and programmes) has been tested against are:

1. To prevent deterioration[6] of any WFD element of any water body - in line with Regulation 13(2)a and 13(5)a[7].
2. To prevent the introduction of impediments to the attainment of 'Good' WFD status or potential for any water body in line with Regulation 13(2)b and 13(5)c[8].

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[4] It is worth nothing that there are a small number of Tactical Planning Units which have not been assessed and will therefore be included between draft and final DWMP

[5] As identified to Ricardo by Environment Agency NAU lead for Severn to Thames Transfer SRO (Alison Williams) at WFD assessment approach meeting, 13 December 2021

[6] As defined in Section 1.3

[7] The no deterioration baseline for each water body and element is the status reported in the RBMP. At present this is RBMP 2.
Discussion with Environment Agency and through review of Environment Agency internal guidance[#1] identified that the Environment Agency consider 'When making management decisions, any 'interim' classification results are also relevant [in addition to the published RBMP stratus] to making sure any deterioration in status is taken into account and to meet the objective of aiming to achieve good status in water bodies.'

[#1] Environment Agency (2021) Supporting implementation of river basin management plans position. LIT 14339. 01/202

[8] WRPG (2021) states that this a test to identify any options that 'prevent the achievement of the water body status objectives in the river basin management plan'. At present this is RBMP2. Discussion with Environment

3. To ensure that the planned programme of water body measures in RBMP2 to protect and enhance the status of water bodies are not compromised.

The 2015 European Court of Justice ruling[9] clarified that 'no deterioration' means a deterioration **between** a whole 'status class' (e.g. 'good', 'moderate', etc.) of one or more of the relevant 'quality elements' (e.g. biological, physico-chemical, etc.). This definition applies equally to Artificial Water Bodies and Heavily Modified Water Bodies in respect of the relevant quality elements that relate to the defined uses of these water bodies. The European Court of Justice ruling further states that if the quality element concerned is already in the lowest class, any deterioration of that element constitutes a deterioration of the status. References to 'no deterioration' in this WFD methodology align to this European Court of Justice ruling.

2.1.2 Plan-level WFD Assessment Objectives

The WFD Assessment Objectives in **Section 2.1.1** are the fundamental WFD Assessment Objectives that have been tested against at **both** the option-level and plan-level.

There are a number of further WFD Assessment Objectives which have been tested against at a plan-level. These further tests have only been applied on the whole DWMP scale. These are considered as progressive WFD Assessment Objectives rather than tests of constraint and do not lead to WFD non-compliance where they are not achieved. These are as follows:

4. To assist the attainment of the WFD Objectives for the water body – in line with Regulation 13(2)b and 13(2)c
5. To assist the attainment of the objectives for associated WFD protected areas – in line with Regulation 13(6)
6. To reduce the treatment needed to produce drinking water and look to work in partnership with others; promoting the requirements of Article 7 of the WFD[10].

A negative answer to the WFD Assessment Objectives 4, 5, or 6 above does not determine that the plan has WFD constraints; however, they can be used in decision making by the water company.

2.2 Proportionate level of detail for assessments

The approach taken to test WFD compliance for the DWMP is as follows:

i. Option-level Assessment – As set out in Section 2.2.1, this is an assessment of the complex and strategic options and transfer options within the draft DWMP.
ii. Cumulative assessment – As set out in Section 2.2.2, the cumulative effects of the complex and strategic options and transfer options within the draft DWMP.
iii. DWMP assessment – As set out in Section 2.2.3, supported by the option-level and cumulative assessment, the draft DWMP as a whole has been against the WFD Assessment Objectives.

In order to ensure the WFD assessment is proportionate for each stage an outline of the assessment for each stage is provided in this section.

2.2.1 Stage 1 Option-level assessment

Stage 1 is where there is scope for the most detailed assessments. Each complex and strategic option and transfer option within the draft DWMP has gone through a process to determine if it is compliant

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Agency and through review of Environment Agency internal guidance[#1] identified that the Environment Agency consider 'less stringent objectives are not permanent and the assessment of any new activity or project must take into account the need to continue to aim for good status. The new activity or project must not jeopardise the achievement of good status in the future, irrespective of whether a less stringent objective was set in RBMP2'.

[#1] Environment Agency (2021) Supporting implementation of river basin management plans position. LIT 14339. 01/2021

[9] European Court of Justice Case C‑461/13: Bund für Umwelt und Naturschutz Deutschland v Bundesrepublik Deutschlandhttp://curia.europa.eu/juris/document/document.jsf?docid=178918&mode=req&pageIndex=1&dir=&occ=first&part=1&text=&doclang=EN&cid=175124 [accessed 30.6.16]

[10] Specifically set out in WRPG 2021 (updated 17 March 2021) at Section 9.4.5

with the three principle WFD Assessment Objectives (as set out in Section 2.1). For proportionality of option assessment there are 4 steps with each step becoming increasingly detailed. Where there is sufficient confidence in an assessment's conclusions the option has not progress onto the next step. The four steps are as follows:

- Step 1 Screening based on activities - to either exclude options from further assessment where it could be reasonably expected that the option would not have an influence on any WFD status elements or supporting elements, or identify which activities require progressing to Steps 2 or 3 assessment and in which water bodies (Section 2.2.1.1).
- Step 2 Screening based on magnitude of hydrogeological/hydrological impact and water body context- to either exclude options from assessment where they are negligible or low impact, or identify which activities require progressing to Step 3 assessment and in which water bodies (Section □).
- Step 3 Impact assessment – either using existing assessments or an expert judgement approach based on source-pathway-receptor to establish likelihood of compliance with the agreed WFD Assessment Objectives in all relevant water bodies. A confidence rating has been given to all assessments to reflect the amount of uncertainty in the design, environmental baseline and magnitude of impact (Section 2.2.1.3).
- Step 4 Detailed impact assessment - specific to the option using measured baseline data, including additional bespoke collected evidence, and detail on design and operating pattern. It is worth noting that none of the options in this DWMP have been subject to this level assessment and no methodology is included here.

Further detail on how steps 1, 2 and 3 have been assessed is set out below for the option-level assessment.

2.2.1.1 Step 1: Screening based on activities

All complex and strategic options and transfer options within the draft DWMP have been subject to this step. Where an option is screened as WFD compliant at this stage it has been accompanied by a robust explanation as to why this assessment can be made without the need to progress the option to Step 2. Some examples of instances where there is considered no risk to WFD compliance are identified as:

- Domestic and business customer education – behavioural (e.g. "what not to flush");
- Monitoring plans, studies, or investigations (root cause analysis);
- Intelligent network operation (i.e. interconnecting drainage area transfers to manage capacity) only where there is no WFD impact anticipated e.g., change in discharge volume or quality. If factors such as these are determined to be "sufficiently substantial" (i.e., adequate explanation or mitigation cannot be provided to negate the requirement for further assessment), then options should progress to Step 2.

Where an option is concluded as not compliant with the WFD Assessment Objectives after Step 1 screening, the option has been progressed to Step 2 screening.

It is also important at this stage to consider if any risk to WFD compliance is anticipated to manifest at the construction stage as well as/ instead of the operational phase. Construction activities, although temporal by nature, have the potential for negative WFD impact and must be considered in the same way on longer-term operational impacts (mitigation options for construction may be adequate to provide the robust explanation required at this stage to avoid the need to progress an option to stage two).

2.2.1.2 Step 2: Screening based on magnitude of hydrogeological/hydrological impact and water body context

Step 2 screening identifies the water body name, ID and type of any water bodies that could potentially be impacted. The potential impacts have been determined by the type of option.

At this stage the context of the water body has been considered to identify any additional constraints i.e., any protected areas, any planned water body measures in RBMP2.

Impacts are not confined to the water body where the option is located as the impacts of an option can transverse multiple water bodies. In these instances, assessments have been conducted against each water body in the flow pathway until no WFD compliance risk is identified.

In order to make WFD assessment more targeted for the DWMP options appraisal process, there is a focus on water quality in addition to hydrological assessment. At Step 2 the assessment considers the extent of influence of wastewater discharge on status elements including biological status elements, physico-chemical status elements, hydro-morphology and groundwater quantitative status.

Where it is considered possible that activity may lead to a deterioration in water quality, but that change can be reasonably accommodated within the current permitted discharge conditions (including dry weather flow (DWF) and any numeric limits), this option may have been screened out providing adequate reasoning and necessary mitigation for construction activities.

Where the Step 2 appraisal identifies operational activities that are considered with confidence to be low impact these have been concluded as WFD compliant, subject to review of local WFD protected areas.

2.2.1.3 Step 3: Impact assessment

Where a WFD assessment has not identified an option as WFD compliant through the screening processes of Step 1 and Step 2 the option has been subject to impact assessment.

For each option the construction and operational activities which have been screened in to Step 3 impact assessment are identified. A source-pathway-receptor approach to identifying effects on WFD Assessment Objectives has been undertaken. Using that approach, the source of change is the construction or operational activity. The pathway includes physical environment changes such as water level change, flow velocity change, morphological change. The receptor is the WFD status element.

For a proportionate assessment, WFD status elements have been screened for those at risk of change from draft DWMP options. These have been used as the basis of the assessment for deterioration and target impediment WFD Assessment Objectives, with other elements included on a case-by-case basis. Where the pathway of option impact is physical environment changes only (e.g. not to water quality), the sensitive biological status elements (to flow and morphology) are as follows:

- River water bodies: macrophytes, invertebrates, fish
- Lake water bodies: macrophytes
- Transitional water bodies: fish, benthic invertebrate (extent), sea grass (extent)
- Coastal water bodies: benthic invertebrate (extent), sea grass (extent).

Further pathways are dependent on local conditions and local environmental quality pressures such as changes in dilution of point or diffuse pollution pressures, changes in fish passability at structures. Under these circumstances the assessment also considers WFD compliance impacts to physico-chemical water quality, particularly sanitary and nutrient quality which are the main supporting water quality elements to ecological quality, as well as the associated biological status elements to nutrient and water quality pressures. In exceptional circumstances, where there are known discharges of specific pollutants or substances regulated through WFD chemical status, the dilution change of these has been included in the assessment.

Water quality changes are often associated with river flow reductions/additions as a result of the change of dilution of water quality pressures. Existing known pressures are listed by the Environment Agency's Reasons for Not Achieving Good datasets and these are reviewed for their level of influence.

The impact assessments have been undertaken using expert judgement by a hydroecologist, working with any other appropriate disciplines required, which is considered to be the most appropriate Step 3 impact assessment, utilising a level of confidence indicator.

The confidence level categories used are presented in **Table 2.1**.

Table 2.1 WFD compliance assessment confidence level categories

Confidence category	Description
Low	Known WFD compliance risks/ failures and potential pathways from option's activities - where assessment based on expert judgement alone
Medium	Reasonable levels of evidence for at risk activities. Some assumptions and expert opinion required around risk areas.
High	Good level of evidence with minimal assumptions or low risk activity

2.2.2 Stage 2: Cumulative assessment

The potential for cumulative effects of the strategic and complex options and transfer options within the draft DWMP have been highlighted. Informed through the option-level assessment which already have been set out per water body, a list of all WFD water bodies assessed for the individual options was assimilated. Where more than one option was assessed for the same water body a cumulative assessment has been undertaken of the multiple options, against the agreed set of WFD Assessment Objectives using the methodologies for the option-level assessment. This required the revision of the high level hydrological and/or hydrogeological assessment which underpins the testing of the WFD Assessment Objectives. It is noted that the cumulative assessments include any additional linked water bodies which are impacted by the cumulative effect of options (in addition to those that are identified in the option-level assessment) – either downstream surface water bodies, or additional surface water bodies linked to groundwater bodies.

The results from this level of WFD assessment have been used to inform the assessment of the draft DWMP as a whole.

2.2.3 Stage 3: Assessment of the draft DWMP

The option-level and cumulative assessment of the strategic and complex options and transfer options within the draft DWMP have been used to provide a WFD assessment of the entire draft DWMP. A compliance statement of the draft DWMP has been presented. This sets out compliance with each of the agreed WFD Assessment Objectives and the level of confidence in the assessment.

3 Option-level (Stage 1) WFD Assessment Outcomes

Following the method set out in Section 2.2.1, this section presents the WFD compliance assessment for the strategic and complex options and transfer options within the draft DWMP. This section outlines the:

- Step 1 screening outcomes (Section 3.1)
- Step 2 screening outcomes (Section 3.2)
- Step 3 impact assessment outcomes (Section 3.3).

The option-level assessments have been used to both the cumulative assessment (Section 4) and WFD compliance of the draft DWMP as a whole (Section 5).

3.1 Step 1 screening outcomes

This section provides and overview of the Step 1 screening outcomes for the strategic and complex options and transfer options within the draft DWMP.

UUW have produced a list of strategic and complex options within their DWMP for WFD compliance assessment. This list is aggregated into TPU areas and option types with the option types informing the Step 1 screening based on activities. The option types identified are as follows:

- Catchment management initiatives;
- Domestic and business customer education;
- Increase the capacity of existing foul / combined networks;
- Increase treatment capacity;
- Intelligent network operation;
- Sewer maintenance; and
- Surface water source control measures.

The option types listed above have been reviewed to identify those that have pathways to impacting any WFD receptors in any WFD water bodies. At this stage, any construction activities have been screened as WFD complaint without further assessment. It is assumed that any impacts from construction activities would be short term in duration and suitable best practice construction techniques would be used to mitigate any adverse impacts on any WFD elements.

From this review, it was determined that only the increase treatment works capacity strategic and complex options should be screened into Step 2 of the WFD compliance assessment process as each of these has potential hydrological and water quality pathways to impacting WFD receptors. It has been assumed that the options of the remaining option types are WFD compliant with there being no pathway to impact any WFD receptors. A summary of the Step 1 screening outcomes for the strategic and complex options is displayed in Table 3-1.

The Step 1 screening also identified that the two transfer options should be screened into Step 2 screening with the transfer of effluent between wastewater treatment works potential leading to a change in discharge volume from each the donor and receiving wastewater treatment works. This would lead to both hydrological and water quality pathways to impacting WFD receptors. The two transfer options are listed below:

- Askham to Sockbridge
- Mowpen Brow to High Leigh

As a summary, following Step 1 screening, 24 options were passed forward to Step 2 screening, 22 increase treatment capacity options and two transfer options. These options are presented in Table 3-2. There a small number of TPUs which have not been assessed and will therefore be included between draft and final DWMP.

Table 3-1 Summary of Step 1 screening of the strategic and complex options. Those that have been screened out of further assessment based on activities have been highlighted yellow. Those options that have been passed froward to Step 2 screening are highlighted blue.

	Strategic and complex option type						
	Catchment management initiatives	Domestic and business customer education	Increase the capacity of existing foul / combined networks	Increase treatment capacity	Intelligent network operation	Sewer maintenance	Surface water source control measures
Altrincham	0	2	6	1	1	0	2
Blackburn	4	2	12	1	1	1	4
Bromborough	0	1	13	1	1	1	3
Burscough	0	2	4	1	1	0	4
Carlisle	0	1	15	1	1	1	5
Carnforth	0	2	2	1	1	0	2
Davyhulme	8	1	11	1	1	1	3
Ellesmere Port	0	1	0	1	1	1	2
Fleetwood	0	1	17	1	1	1	4
Hillhouse	0	1	1	1	1	1	1
Knutsford	0	2	0	1	1	0	4
Lancaster	0	2	4	1	1	1	3
Macclesfield	1	2	23	1	1	1	2
Partington	0	1	2	1	1	0	3
Penrith	0	2	3	1	1	0	4
Preston	2	2	8	1	1	1	6
Sale	0	1	26	1	1	1	2
Salford	0	1	3	1	1	1	3
Stretford	0	2	2	1	1	0	4
Whitehaven	0	2	4	1	1	0	7
Wigan	5	2	52	1	1	1	8
Workington	0	1	3	1	1	0	5

Table 3-2 List of options passed forward to Step 2 screening

Option reference	Option name	Option type
ALTRI-ALTRI_001_Std-W2.n	Altrincham	Increase treatment capacity
BLACK-BLACK_001_Std-W2.n	Blackburn	Increase treatment capacity
BROMB-BROMB_001_Std-W2.n	Bromborough	Increase treatment capacity
BURSC-BURSC_001_Std-W2.n	Burscough	Increase treatment capacity
CARLI-CARLI_001_Std-W2.n	Carlisle	Increase treatment capacity
CRNFT-CRNFT_001_Std-W2.n	Carnforth	Increase treatment capacity
DAVYH-DAVYH_001_Std-W2.n	Davyhulme	Increase treatment capacity
ELLES-ELLES_001_Std-W2.n	Ellesmere Port	Increase treatment capacity
FLEET-FLEET_001_Std-W2.n	Fleetwood	Increase treatment capacity
HILLH-HILLH_001_Std-W2.n	Hillhouse	Increase treatment capacity
KNUTF-KNUTF_001_Std-W2.n	Knutsford	Increase treatment capacity
LANCA-LANCA_001_Std-W2.n	Lancaster	Increase treatment capacity
MACCL-MACCL_001_Std-W2.n	Macclesfield	Increase treatment capacity
PARTI-PARTI_001_Std-W2.n	Partington	Increase treatment capacity
PENRT-PENRT_002_Std-W2.n	Penrith	Increase treatment capacity
PREST-PREST_001_Std-W2.n	Preston	Increase treatment capacity
SALEZ-SALEZ_002_Std-W2.n	Sale	Increase treatment capacity
SALFO-SALFO_002_Std-W2.n	Salford	Increase treatment capacity
STRET-STRET_001_Std-W2.n	Stretford	Increase treatment capacity
WHTHA-WHTHA_001_Std-W2.n	Whitehaven	Increase treatment capacity
WIGAN-WIGAN_001_Std-W2.n	Wigan	Increase treatment capacity
WORKI-WORKI_001_Std-W2.n	Workington	Increase treatment capacity
ASKHM-WW1- SOCKB-WWTRNSF1	Askham to Sockbridge	Transfer
MOWPE-WW1- HGHLE-WWTRNSF1	Mowpen Brow to High Leigh	Transfer

3.2 Step 2 screening outcomes

This section provides an overview of the Step 2 screening outcomes for the strategic and complex options and transfer options within the draft DWMP.

The Step 1 screening identified 24 options (see Table 3-2) to be passed forward to Step 2 screening in order to identify those options that can be screened as WFD compliant based on hydrological impact and water body context. Those options with only a negligible/minor hydrological assessment have been screened as compliant at this stage. Due to these options being in early stages of development, there is currently insufficient information to conduct a robust hydrological assessment to identify the potential hydrological impact associated with each of the options. As a precautionary approach, all 24 options were taken forward to Step 3 impact assessment. Table 3-3 outlines the outcomes of the Step 2 screening and identifies the options and water bodies that require a Step 3 impact assessment.

Table 3-3 outcomes from the Step 2 screening and identified water bodies for Step 3 impact assessment

Option reference	Option name	Step 2 screening outcome	WFD water bodies considered for Step 3 assessment
ALTRI-ALTRI_001_Std-W2.n	Altrincham	Step 3 required	GB112069060980 – Sinderland Brook
BLACK-BLACK_001_Std-W2.n	Blackburn	Step 3 required	GB112071065300 - Darwen - conf Roddlesworth to tidal
BROMB-BROMB_001_Std-W2.n	Bromborough	Step 3 required	GB112070064880 – Black Drain and Sluice
BURSC-BURSC_001_Std-W2.n	Burscough	Step 3 required	GB531206908100 - Mersey
CARLI-CARLI_001_Std-W2.n	Carlisle	Step 3 required	GB102076073940 – Eden – Eamont to tidal
CRNFT-CRNFT_001_Std-W2.n	Carnforth	Step 3 required	GB531207312000 - Kent
DAVYH-DAVYH_001_Std-W2.n	Davyhulme	Step 3 required	GB112069061452 - Irwell / Manchester Ship Canal (Irk to confluence with Upper Mersey)
ELLES-ELLES_001_Std-W2.n	Ellesmere Port	Step 3 required	GB531206908100 - Mersey
FLEET-FLEET_001_Std-W2.n	Fleetwood	Step 3 required	GB641211630002 - Cumbria
HILLH-HILLH_001_Std-W2.n	Hillhouse	Step 3 required	GB112069061442 – Alt DS Bull Bridge
KNUTF-KNUTF_001_Std-W2.n	Knutsford	Step 3 required	GB112069061340 – Birkin Brook – Source to Mobberley Brook
LANCA-LANCA_001_Std-W2.n	Lancaster	Step 3 required	GB531207212100 - Lune
MACCL-MACCL_001_Std-W2.n	Macclesfield	Step 3 required	GB112069061320 – Bollin (Source to Dean)
PARTI-PARTI_001_Std-W2.n	Partington	Step 3 required	GB112069060980 – Sinderland Brook
PENRT-PENRT_002_Std-W2.n	Penrith	Step 3 required	GB102076070990 – Eamont (Lower)
PREST-PREST_001_Std-W2.n	Preston	Step 3 required	GB531207112400 - Ribble
SALEZ-SALEZ_002_Std-W2.n	Sale	Step 3 required	GB112069061030 - Mersey (upstream of Manchester Ship Canal)
SALFO-SALFO_002_Std-W2.n	Salford	Step 3 required	GB112069061452 - Irwell / Manchester Ship Canal (Irk to confluence with Upper Mersey)
STRET-STRET_001_Std-W2.n	Stretford	Step 3 required	GB112069061030 - Mersey (upstream of Manchester Ship Canal)
WHTHA-WHTHA_001_Std-W2.n	Whitehaven	Step 3 required	GB112074070040 – Lowca Beck
WIGAN-WIGAN_001_Std-W2.n	Wigan	Step 3 required	GB112070064820 – Douglas (Lower)
WORKI-WORKI_001_Std-W2.n	Workington	Step 3 required	GB102076071010 – Lowther (Lower)
ASKHM-WW1- SOCKB-WWTRNSF1	Askham to Sockbridge	Step 3 required	GB102076071020 – Eamont (Upper) GB641211630003 – Solway Outer South
MOWPE-WW1- HGHLE-WWTRNSF1	Mowpen Brow to High Leigh	Step 3 required	GB112069061382 - Bollin (Ashley Mill to Manchester Ship Canal)

3.3 Step 3 impact assessment outcomes

This section provides an overview of the Step 3 impact assessment outcomes for the strategic and complex options and transfer options within the draft DWMP.

Based on the Step 2 screening, 24 options were passed forward for Step 3 impact assessment. The overview of the assessment outcomes are presented in

Table 3-4 and the full WFD impact assessments are presented in Appendix A.

Table 3-4 Option-level impact assessment summary. Where an assessment has identified the option to be potentially non-compliant further information on the outcome is provided.

Option reference	Option name	Option type	Impact assessment outcome	Further information
ALTRI-ALTRI_001_Std-W2.n	Altrincham	Increase treatment capacity	Compliant (low conf.)	
BLACK-BLACK_001_Std-W2.n	Blackburn	Increase treatment capacity	Compliant (low conf.)	
BROMB-BROMB_001_Std-W2.n	Bromborough	Increase treatment capacity	Compliant (low conf.)	
BURSC-BURSC_001_Std-W2.n	Burscough	Increase treatment capacity	Compliant (low conf.)	
CARLI-CARLI_001_Std-W2.n	Carlisle	Increase treatment capacity	Compliant (low conf.)	
CRNFT-CRNFT_001_Std-W2.n	Carnforth	Increase treatment capacity	Compliant (low conf.)	
DAVYH-DAVYH_001_Std-W2.n	Davyhulme	Increase treatment capacity	Compliant (low conf.)	
ELLES-ELLES_001_Std-W2.n	Ellesmere Port	Increase treatment capacity	Compliant (low conf.)	
FLEET-FLEET_001_Std-W2.n	Fleetwood	Increase treatment capacity	Compliant (low conf.)	
HILLH-HILLH_001_Std-W2.n	Hillhouse	Increase treatment capacity	Compliant (low conf.)	
KNUTF-KNUTF_001_Std-W2.n	Knutsford	Increase treatment capacity	Compliant (low conf.)	
LANCA-LANCA_001_Std-W2.n	Lancaster	Increase treatment capacity	Compliant (low conf.)	
MACCL-MACCL_001_Std-W2.n	Macclesfield	Increase treatment capacity	Compliant (low conf.)	
PARTI-PARTI_001_Std-W2.n	Partington	Increase treatment capacity	Compliant (low conf.)	
PENRT-PENRT_002_Std-W2.n	Penrith	Increase treatment capacity	Compliant (low conf.)	
PREST-PREST_001_Std-W2.n	Preston	Increase treatment capacity	Compliant (low conf.)	

Option reference	Option name	Option type	Impact assessment outcome	Further information
SALEZ-SALEZ_002_Std-W2.n	Sale	Increase treatment capacity	Compliant (low conf.)	

Table 3-5 cont.

Option reference	Option name	Option type	Impact assessment outcome	Further information
SALFO-SALFO_002_Std-W2.n	Salford	Increase treatment capacity	Compliant (low conf.)	
STRET-STRET_001_Std-W2.n	Stretford	Increase treatment capacity	Compliant (low conf.)	
WHTHA-WHTHA_001_Std-W2.n	Whitehaven	Increase treatment capacity	Compliant (low conf.)	
WIGAN-WIGAN_001_Std-W2.n	Wigan	Increase treatment capacity	Compliant (low conf.)	
WORKI-WORKI_001_Std-W2.n	Workington	Increase treatment capacity	Compliant (low conf.)	
ASKHM-WW1- SOCKB-WWTRNSF1	Askham to Sockbridge	Transfer	Non-compliant (low conf.)	The Catchment Abstraction Management Strategy suggests that water is available for abstraction from the Lowther (Lower) water body (GB102076071010) under Q95 flow conditions but no water is available for abstraction under Q70, Q50 and Q30 flow conditions. This indicates a flow pressure that could be increased by the reduction in flow from Askham Wastewater Treatment Works into this water body, potentially leading to significant impacts on in-channel habitats. As such, this option is assessed as non-compliant in the surface water body Lowther (Lower) (GB102076071010) for the potential for deterioration in the fish, invertebrate, macrophytes and phytobenthos status elements.
MOWPE-WW1- HGHLE-WWTRNSF1	Mowpen Brow to High Leigh	Transfer	Compliant (low conf.)	

Of the 24 options, all 22 increase treatment capacity options have each been assessed to be compliant (low confidence) against the WFD Assessment Objectives set out in Section 2.1. It has been assumed that any increase in wastewater treatment works discharge would be consented (either as within the headroom of an existing consent, or, if there was an increase in consented volume, that the Environment Agency would accept the changes in consent conditions) and therefore would be WFD regulations compliant. Due to the limited option information, these assessments have only been given a low confidence rating. In order to improve confidence in the assessments, scheme specific investigations are advocated into the impact of the option on the WFD receptors. Each impact assessment has highlighted the receptors in each water body that may be particularly sensitive to an increase in discharge volume associated with the increase in treatment capacity.

Of the transfer options, the Askham to Sockbridge transfer (ASKHM-WW1- SOCKB-WWTRNSF1) option has been flagged as potentially non-compliant (low confidence) due to the potential for deterioration in the biological status elements in the Lowther (Lower) (GB102076071010) water body. The Mowpen Brow to High Leigh transfer (MOWPE-WW1- HGHLE-WWTRNSF1) has been assessed as compliant (low confidence). As with the increase capacity options, each of these assessments have

a low confidence rating and further, option specific, investigations are advocated in order to improve confidence in each assessment.

4 Cumulative Assessment

In order to understand the WFD compliance of the draft DWMP a cumulative assessment has been undertaken of the complex options and transfer options within the plan. The option-level assessments (Section 3) have been used to inform the cumulative assessment of the draft DWMP. For each WFD water body that is impacted by multiple options within the plan, an impact assessment has been undertaken to understand the cumulative impact on the receptors within that water body as a result of all of the options being in operation.

Table 4-1 displays the water bodies that have been assessed at the option-level and identifies those water bodies that are impacted by more than one option. In total there are four water bodies identified for cumulative assessment:

- Cumulative 1: GB112069060980 – Sinderland Brook (associated with ALTRI-ALTRI_001_Std-W2.n and PARTI-PARTI_001_Std-W2.n increase treatment capacity options)
- Cumulative 2: GB112069061452 - Irwell / Manchester Ship Canal (Irk to confluence with Upper Mersey) (associated with DAVYH-DAVYH_001_Std-W2.n and SALFO-SALFO_002_Std-W2.n increase treatment capacity options)
- Cumulative 3: GB112069061030 - Mersey (upstream of Manchester Ship Canal) (associated with SALEZ-SALEZ_002_Std-W2.n and STRET-STRET_001_Std-W2.n increase treatment capacity options)
- Cumulative 4: GB531206908100 – Mersey (associated with BURSC-BURSC_001_Std-W2.n and ELLES-ELLES_001_Std-W2.n increase treatment capacity options)

The cumulative impact assessment for each of these water bodies is available in Appendix B. Each of the cumulative impact assessments found the impact to be compliant (low confidence). Similar to the assessments at an option-level, it has been assumed that that any increase in wastewater treatment works discharge would be consented (either as within the headroom of an existing consent, or, if there was an increase in consented volume, that the Environment Agency would accept the changes in consent conditions) and therefore would be WFD regulations compliant. Due to the limited option information, these assessments have only been given a low confidence rating. In order to improve confidence in the assessments, scheme specific investigations are advocated into the cumulative impact of the options on the WFD receptors.

Table 4-1 Identification of cumulative impacts on water bodies associated with the strategic and complex options and transfer options in the draft DWMP

WFD water body		Option ID																								
Type	ID and Name	ALTRI-ALTRI_001_Std-W2.n	BLACK-BLACK_001_Std-W2.n	BROMB-BROMB_001_Std-W2.n	BURSC-BURSC_001_Std-W2.n	CARLI-CARLI_001_Std-W2.n	CRNFT-CRNFT_001_Std-W2.n	DAVYH-DAVYH_001_Std-W2.n	ELLES-ELLES_001_Std-W2.n	FLEET-FLEET_001_Std-W2.n	HILLH-HILLH_001_Std-W2.n	KNUTF-KNUTF_001_Std-W2.n	LANCA-LANCA_001_Std-W2.n	MACCL-MACCL_001_Std-W2.n	PARTI-PARTI_001_Std-W2.n	PENRT-PENRT_002_Std-W2.n	PREST-PREST_001_Std-W2.n	SALEZ-SALEZ_002_Std-W2.n	SALFO-SALFO_002_Std-W2.n	STRET-STRET_001_Std-W2.n	WHTHA-WHTHA_001_Std-W2.n	WIGAN-WIGAN_001_Std-W2.n	WORKI-WORKI_001_Std-W2.n	ASKHM-WW1- SOCKB-WWTRNSF1	MOWPE-WW1- HGHLE-WWTRNSF1
River	GB112069060980 – Sinderland Brook	✓													✓											
	GB112071065300 - Darwen - conf Roddlesworth to tidal		✓																							
	GB112070064880 – Black Drain and Sluice			✓																						
	GB102076073940 – Eden – Eamont to tidal					✓																				
	GB112069061452 - Irwell / Manchester Ship Canal (Irk to confluence with Upper Mersey)							✓											✓							
	GB641211630002 - Cumbria																									
	GB112069061442 – Alt DS Bull Bridge										✓															
	GB112069061340 – Birkin Brook – Source to Mobberley Brook											✓														
	GB112069061320 – Bollin (Source to Dean)													✓												
	GB102076070990 – Eamont (Lower)															✓										
	GB112069061030 - Mersey (upstream of Manchester Ship Canal)																	✓		✓						
	GB112074070040 – Lowca Beck																				✓					
	GB112070064820 – Douglas (Lower)																					✓				
	GB102076071010 – Lowther (Lower)																						✓			
	GB102076071020 – Eamont (Upper)																							✓		
	GB112069061382 - Bollin (Ashley Mill to Manchester Ship Canal)																									✓
Transitional water	GB531206908100 - Mersey				✓				✓																	
	GB531207312000 - Kent						✓																			
	GB531207212100 - Lune												✓													
	GB531207112400 - Ribble																✓									
Coastal	GB641211630002 - Cumbria									✓																
	GB641211630003 – Solway Outer South																								✓	

✓	Cumulative 1	✓	Cumulative 2	✓	Cumulative 3	✓	Cumulative 4

5 Summary of WFD Compliance of the UUW draft DWMP

This report presents the WFD compliance assessment of the draft DWMP.

Each of the strategic and complex and transfer options within the draft DWMP have been assessed in isolation and cumulatively against each of the principle WFD Assessment Objectives set out in Section 2.1.1. The majority of the options have been found to be compliant against the principle WFD Assessment Objectives, however, these assessments are low confidence and further, bespoke, investigations into the hydroecological and water quality impacts are likely to be required to improve this confidence.

It was found that the Askham to Sockbridge transfer option (ASKHM-WW1- SOCKB-WWTRNSF1) may potentially not comply with WFD Assessment Objective 1 as there is the potential for the option to cause deterioration to the biological status elements in the Lowther (Lower) water body (GB102076071010). Again, this is low confidence and further investigations are advocated to improve the confidence in this assessment.

Through its very purpose, the draft DWMP intends to identify and lead to environmental water quality improvements. As such the progressive WFD Assessment Objectives for both water bodies (WFD Assessment Objective 4) and protected areas (WFD Assessment Objective 5) are likely to be assisted by the draft DWMP. It is worth highlighting that these progressive WFD Assessment Objectives help to inform decision making and do not contribute to the overall WFD compliance.

A summary of the assessment against each of the WFD Assessment Objectives is reported in Table 5-1 below.

Table 5-1 Summary of plan level WFD compliance for the UUW DWMP

WFD Assessment Objective	Summary of WFD compliance	Explanation
1) To prevent deterioration of any WFD element of any water body - in line with Regulation 13(2)a and 13(5)a	Potentially non-compliant with WFD Assessment Objective	All options in the draft DWMP have been assessed in isolation and cumulatively against this WFD Assessment Objective 1.The Askham to Sockbridge transfer option (ASKHM-WW1- SOCKB-WWTRNSF1) has been found to potentially not comply with WFD Assessment Objective 1 as there is the potential for the option to cause deterioration to the biological status elements in the Lowther (Lower) water body (GB102076071010). All other increase treatment capacity and transfer options in the plan have been found to be complaint (low confidence) against this WFD Assessment Objective. It is worth noting that all of these assessments are high level and have low confidence ratings associated with them. Further, option bespoke, assessments are likely required in order to improve confidence in these assessments.
2) To prevent the introduction of impediments to the attainment of 'Good' WFD status or potential for any water body -in line with Regulation 13(2)b and 13(5)c.	Compliant with WFD Assessment Objective	All options in the draft DWMP have been assessed in isolation and cumulatively and all have been assessed as being WFD compliant against WFD Assessment Objective 2. It is worth noting that all of these assessments are high level and have low confidence ratings associated with them. Further, option bespoke, assessments are likely required in order to improve confidence in these assessments.
3) To ensure that the planned programme of water body measures in RBMP2 to protect and enhance the status of water bodies are not compromised.	Compliant with WFD Assessment Objective	All options in the draft DWMP have been assessed in isolation and cumulatively and all have been assessed as being WFD compliant against WFD Objective Assessment 3.
4) To assist the attainment of the WFD objectives for the water body – in line with Regulation 13(2)b and 13(2)c	Likely to assist WFD Assessment Objective	Key issues for the DWMP include looking at areas that may be prone to environmental effects that can be benefited by changes to drainage and wastewater management; and looking at providing resilience to future pressures.

WFD Assessment Objective	Summary of WFD compliance	Explanation
5) To assist the attainment of the WFD objectives for associated WFD protected areas – in line with Regulation 13(6)	Likely to assist WFD Assessment Objective	At a water body level, the WFD compliance assessment of the increased treatment capacity and transfer options has not specifically reviewed improvements to physico-chemical water quality or biological status elements. Water quality improvements associated with the draft DWMP – from current continuous and intermittent discharges are assessed elsewhere in the DWMP.
6) To progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment	Does not assist WFD Assessment Objective	None of the options within the draft DWMP make steps to phase out the pollutants that present a significant threat to the aquatic environment.

Appendix A: Option-level impact assessments

Appendix B: Cumulative impact assessment

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