



Appendix K

Water Framework Directive Compliance Assessment: Second Re-screening

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Introduction

This second Water Framework Directive (WFD) re-screening assessment has been prepared for the proposed River Thames Scheme (RTS), here forth referred to as 'the project', which will form part of the WFD Assessment for the Development Consent Order (DCO) application for the project.

This second re-screening assessment has been completed with reference to previous work undertaken for previous iterations of the project design:

- Water Framework Directive Compliance Assessment, 2018¹
- Water Framework Directive Compliance Assessment: First Re-screening Assessment², 2022
- Lower Thames Strategy Strategic Environmental Assessment: Environmental Report (2009)³
- Lower Thames Strategy Study (LTSS) Water Framework Directive Compliance Assessment⁴
- River Thames Scheme Capacity Improvements and Flood Channel Project, Water Framework Directive Compliance Assessment⁵

WFD Background

The Water Framework Directive (WFD) (2000/60/EC) sets objectives for water bodies to achieve Good status or potential within a set timeframe. The Environment Agency, as competent authority in England and Wales, are responsible for delivering the Directive through the Environment (Water Framework Directive) (England and Wales) Regulations 2017.

The WFD stipulates that all water bodies should meet good ecological status (GES) (or good ecological potential (GEP) if an artificial or heavily modified water body) by

¹ GBV (2018) Water Framework Directive Compliance Assessment, September 2018, Doc ref: 122368-BVL-Z0-SW-RP-V-00106.docx

² GBV (2022) Water Framework Directive Compliance Assessment: First Re-screening Assessment. IMSE500260, 12 May 2022

³ Environment Agency (2009) Lower Thames Strategy Strategic Environmental Assessment: Environmental Report, September 2009.

⁴ Environment Agency (2010), Lower Thames Strategy Stage WFD Assessment, 28 June 2010.

⁵ GBV (2018), River Thames Scheme Capacity Improvements and Flood Channel Project Water Framework Directive Compliance Assessment, IMSE500260-0016.

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a set timeframe. A deadline has been set within River Basin Management Plans (RBMPs) for these water bodies to achieve the required status, unless alternative arrangements (e.g. exemptions due to cost and technical feasibility) can be justified. The RBMP WFD cycle of assessments takes place every six years and therefore objectives which have not been achieved by 2015 may roll on to the 2021 cycle, and so on to the 2027 assessment.

The 2017 Regulations place a general duty on the Secretary of State (SoS), the Welsh Ministers, the Environment Agency (EA), and Natural Resources Wales (NRW) to exercise their 'relevant functions' so as to secure compliance with the WFD. The SoS will need to consider the implications of the RTS, firstly in relation to the specific duty to have regard to the RBMP and supplementary plans, and secondly, in more general terms in relation to the UK's ability to comply with the WFD, including (if applicable) the derogation provisions of Regulation 19⁶.

A WFD Compliance Assessment is being undertaken to assess whether the project is compliant with the objectives of the WFD and will support the Environmental Impact Assessment (EIA) and Development Consent Order (DCO) application for the project.

⁶ The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, Part 5, Regulation 19 (formally known as Article 4.7)

The WFD Compliance Assessment Process

WFD Assessments follow a three-stage approach⁷:

- **Stage 1 – WFD Screening:** to determine if there are any activities associated with the RTS that don't require further consideration
- **Stage 2 – WFD Scoping (Preliminary Assessment):** to identify risks of the RTS's activities to receptors based on the relevant water bodies and their water quality elements (including information on status, objectives, and the parameters for each water body)
- **Stage 3 – WFD Impact Assessment (Compliance Assessment):** a detailed assessment of water bodies and their quality elements that are considered likely to be affected by the RTS, identification of any areas of noncompliance; consideration of mitigation measures, enhancements and contributions to the RBMP objectives.

This second rescreening assessment (stage 1) has been prepared in parallel with an EIA scoping exercise to determine likely significant effects of the project that need to be scoped into the EIA and associated assessments.

The Planning Inspectorate (PINS) Advice Note Eighteen⁸ states that 'decisions taken at the WFD screening stage should be considered and reviewed periodically. This will be particularly important as and when more detailed information regarding the RTS becomes available'. On that basis, this second rescreening assessment will inform a first preliminary assessment (stage 2) and first compliance assessment (stage 3), which will be presented alongside the Preliminary Environmental Information Report (PEIR) as part of consultation on the EIA and associated assessments for the project. A third rescreening assessment (stage 1) will be completed after consultation on the PEIR based on a refined design and any updated information on relevant River Basin Management Plans (RBMPs) and water bodies. The third rescreening will inform a second preliminary assessment and second compliance assessment (, which will part of the information accompanying the DCO application for the project.

⁷ WFD stages as per PINS Advice Note Eighteen (National Infrastructure Planning (2017): The Water Framework Directive and Environment Agency Guidance 'Water Framework Directive assessment: estuarine and coastal waters'. Preliminary assessment and compliance assessment terminology aligns with previous WFD Compliance Assessment completed at the outline design stage (GBV, 2018).

⁸ National Infrastructure Planning (2017), Advice Note Eighteen: The Water Framework Directive.

Further work such as updated flow modelling, water quality and level monitoring, and consultation with key stakeholders such as Thames Water, to confirm interactions with the project, is ongoing. Once further information is available it will be used to inform decision making in future stages of the WFD compliance assessment.

Assumptions made in this second rescreening assessment are based on current design detail, available model outputs and existing reports (as of July 2022). The assessment has also considered the outputs from the Invasive Non-Native Species (INNS) and aquatic pathogen gap analysis exercises^{9 10} and any potential impacts on the identified waterbodies. Both the INNS and aquatic pathogens assessments review existing information and identify any required surveys to determine the current and future spread of INNS and aquatic pathogens.

For this second re-screening assessment, the current design includes the following components:

- Runnymede and Spelthorne Channels (previously referred to as Channel Sections 2 (CS2) and 3 (CS3) respectively), with proposed flows of up to 150 m³/s during flood conditions (when River Thames flows exceed 200m³/s), and a 0.5 – 1.5m³/s augmented flow during normal and low flow (non-flooding) conditions (operating mode for at least 95% of the time);
- Sunbury, Molesey and Teddington weir capacity improvements;
- Fish passage improvements on Sunbury, Molesey, Teddington, Chertsey and Abbey Chase weirs;
- Bed lowering in the River Thames for approximately 1km downstream of Desborough Cut to below Walton Marina;
- 11 habitat creation areas (HCAs) locations including Land South of Wraysbury Reservoir, Laleham Reach, Land between Desborough Cut and Engine River, Drinkwater Pit, Grove Farm, Norlands Lane, Laleham Golf Course, Littleton Lane (Brett's Land), Chertsey Road Tip, Land South of Chertsey Road, and Desborough Island;
- New areas of green open space (five being considered) and areas of active travel;
- Environmental mitigation (such as lake edge shallowing)
- Material storage;

⁹ GBV (2022) Aquatic and Terrestrial Invasive Non-Native Species Gap Analysis, 13 April 2022

¹⁰ GBV (2022) Aquatic Pathogens Gap Analysis, 11th April 2022

- Compounds;
- Flood embankments;
- scour protection;
- Flow control structures on inlets, outfalls and gated structures on Spelthorne and Runnymede Channels; and
- New road bridges for passage of Spelthorne and Runnymede Channels below existing highways.

The extent to which the augmented flow for the flood relief channel will impact the current Thames Water abstraction regime is currently unknown, however the maximum augmented flow will be limited to 1.5 m³/s. Current modelling studies are investigating a range of augmentation flow scenarios. In addition to this, there are ongoing conversations with Thames Water regarding changes to abstraction pumping from the River Thames into the existing reservoirs in the period shortly prior to the peak of large floods to reduce the peak flood levels. Once changes to Thames Water's abstraction regime are fully understood, they will be incorporated into future iterations of the WFD compliance assessment.

Project components considered for this re-screening assessment are shown in Appendix A, Figures 1 (WFD surface water bodies) and 2 (WFD ground water bodies).

In developing this re-screening assessment, reference has been made to European commission 'Common Implementation Strategy' guidance documents and technical reports, which provide information to assist stakeholders to implement the Water Framework Directive¹¹.

Screening Methodology

Overview

Regulation 5(2) (l) (iii) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) (the APFP Regulations)¹² requires each Nationally Significant Infrastructure Project (NSIP) Applicant (where applicable) to provide with their application 'a plan with accompanying information identifying ... water bodies in a river basin management plan, together with an assessment of any effects on such ... bodies likely to be caused by the RTS'.

¹¹ European Commission, Common Implementation Strategy' guidance, [Guide - Water Framework Directive - Environment - European Commission \(europa.eu\)](https://ec.europa.eu/eia/eia_en).

¹² The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 as amended) (the APFP Regulations).

PINS Advice Note Eighteen transposes the legislative requirements of those Regulations and the Water Framework Directive and Regulations into guidance for each stage of the WFD Compliance Assessment. The Advice Note states that WFD screening for NSIPs should address and identify the following:

- the relevant RBMPs and water bodies;
- the Zol based on aspects of the RTS that could affect the identified water bodies;
- any aspects of the RTS that have been screened out and why.

This second rescreening assessment identifies the relevant RBMPs, water bodies and Zol based on aspects of the RTS included in the current design stage (presented in Appendix A, Figures 1 and 2). A precautionary approach has been taken. As such, all project components (listed above) are therefore screened in for further assessment due to the presence in the Zol, and subsequent direct and indirect impact pathways.

Due to the scale and complexity of the project and the various changes in environmental variables, it has been difficult to confirm the likely resulting effects with certainty. Consequently, expert judgement and a precautionary approach have been taken and will continue to be applied as the project develops.

Zone of Influence

The Zol for this assessment is concurrent with the surface water and groundwater study areas used for EIA scoping; the extent of the surface and groundwater water bodies that lie within the project boundary for EIA scoping plus a 500m buffer combined with the area of the 1 in 100-year floodplain that will experience a change in flood extent due to the RTS (whichever is the greater area). This includes waterbodies that intersect with, and could be impacted by, the proposed project, including: flood relief channels, River Thames weir capacity improvement works, HCAs, new areas of open green space, flow control structures and other works. It also considers upstream and downstream water bodies connected to those intersecting the project. The Zol includes the extent to which potential changes to water flows, water levels, water quality, spread of INNS and aquatic pathogens, and any additional impacts to aquatic ecology or WFD and other water body designated sites may occur.

In addition, potential effects arising from the change in flood risk resulting from the project have been considered. Updated flood risk modelling for the current project design assumes that a change in flood risk is likely to be seen as far upstream as

Datchet. This has therefore been used as the upstream extent for the Zol for potential changes to water flows and water levels. This will be verified when the new flood risk model becomes available for the third re-screening exercise.

As per Environment Agency Guidance¹³, 'temporary effects' considered in this document refer to those effects from short-duration activities like construction or maintenance, that are not considered to result in deterioration in WFD status if the water body would recover in a short time without any restoration measures (less than three years).

Screening Assessment

The water bodies considered in this screening exercise are presented in Table 1. Their locations in relation to the project components are presented in Appendix A, Figures 1 and 2. Table 1 summarises the relevant River Basin District (RBD) / RBMP and Environment Agency management catchment for each waterbody, with the current status (2019 RBMP Cycle 2) and current Reasons For Deterioration (RFD) / Reasons For Not Achieving Good (RNAG). The relevant RBMP for the project at present is the Thames River Basin District 2019 RBMP (Cycle 2). Draft objectives for RBMP Cycle 3 have been released and incorporated in this assessment.¹⁴

A total of 36 surface water bodies and two groundwater bodies were identified as being in the Zol for the project and were included in the screening assessment (Appendix A). An additional six surface water bodies were outside the Zol for the current project design but have been included in Table 1 as they formed part of the previous screening decisions made during the assessment of the Lower River Thames Strategy (2010) and Outline Design Stage (2018) which included an additional channel section (CS1). For the purpose of this rescreening exercise, these previous screening decisions have been included in the screening table with any supporting text, to provide an audit trail and further context where screening outcomes have changed.¹⁵

¹³ Environment Agency (2016) Water Framework Directive assessment: estuarine and coastal waters guidance, <https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters>. Last updated 9 November 2017.

¹⁴ Once RBMP Cycle 3 objectives are confirmed, these will be incorporated into future re-screening assessments and further WFD Compliance Assessment deliverables.

¹⁵ These columns are added to provide additional context and an audit trail. Columns referring to previous project designs will be removed before submission of the final WFD compliance assessment to support the DCO application.

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Of these water bodies, 31 are categorised as Artificial / Heavily Modified Water Bodies (A/HMWB). A total of 20 surface water bodies and two groundwater bodies have been screened in for further assessment and the potential effects on these water bodies will be considered in more detail at Stage 2 (Preliminary Assessment).

Table 1 Screening assessment of water bodies within the RTS study area

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorph -ological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
Chertsey Bourne (Chertsey to River Thames confluence)	GB10 60390 17030	River	Thames, Wey and Trib	Not A / HMWB (Supports Good)	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Moderate Ecological Status Chemical Status – Does not require assessment	Poor Ecological Status Hydromorphological Supporting Elements – Supports good Chemical Status - Fail	Fish - Physical modification (urban and transport - urbanisation – urban development) Macrophytes and Phytobenthos Combined – Point source (sewage discharge - continuous) Dissolved oxygen – Point sources (sewage discharge – continuous, Water Industry - incidents), Natural (other natural conditions) Phosphate – Point source (sewage discharge - continuous)	Moderate Ecological Status by 2039 (Disproportionately expensive: Disproportionate burdens. Natural conditions: Ecological recovery time for Macrophytes and Phytobenthos Combined element. Technically infeasible: No known technical solution is available for Phosphate element). Good Chemical Status by 2063	Upstream - The Moat at Egham, Addlestone Bourne (Mill/Hale to Chertsey Bourne) and Chertsey Bourne (Virginia Water to Chertsey). Downstream - River Thames (Egham to Teddington)	"New structure to formalise existing overflow into St Ann's Lake. This will reduce flood flows down the river through Chertsey town, altering the hydrological regime, but there is no likely impact on the chemical or ecological status of this river."	Screened Out - There will be no change in flow conditions in this water body, except during periods of flood. Flow from the flood relief channel will not reach this water body and although water will be diverted away from this water body as a result of the formalisation of the existing overflow into St Ann's Lake this will only occur during periods of high flows which will be temporary and infrequent.	In	No works are proposed within this WFD water body. No flow from the Runnymede Channel will enter this water body. Previous analysis of the potential impacts the project will have on the interactions between the River Thames and Chertsey Bourne ¹⁸ and Chertsey Bourne works options testing using the Thames Lower 1D-2D model ¹⁹ was undertaken in 2017. These outputs have been used to inform this screening decision. When Chertsey Bourne floods, water will be diverted away from Chertsey Bourne (Chertsey to River Thames Confluence) as a result of the formalisation of the existing overflow into St Ann's Lake (FCS8) in the upstream water body (see Appendix A). This flow will then be diverted to the Runnymede Channel via a new flow control structure between St Ann's Lake and Abbey Lake (FCS7), or return from St Ann's lake, back into this WFD water body downstream via FCS9, reducing the impacts of flooding on Chertsey Bourne. When the River Thames floods at the same time as Chertsey Bourne, less water will be diverted away from Chertsey Bourne than when Chertsey Bourne alone floods due to the increased flows through the Runnymede Channel from the River Thames, preventing flow from St Ann's Lake to Abbey Lake. Flows from Chertsey Bourne will continue to flow into St Ann's lake, then back into Chertsey Bourne. In these larger flood conditions (1 in 50, 75, 100 and 200-year floods), the project is still anticipated to improve flooding conditions on Chertsey Bourne, as it will prevent flows from the River Thames entering St Ann's Lake and entering Chertsey Bourne. Changing the hydrological regime can impact on the ecological status. Change in hydrological regime is only anticipated during flood events which will be temporary and infrequent (as per predicted flood frequencies already mentioned). No other components of the project are anticipated to impact the hydrological regime of this water body. The INNS gap analysis has identified several 'high risk' INNS within Fleet Lake, Abbey Lake and St. Ann's Lake. Although the existing hydraulic connection will not change as a result of the scheme, there is a risk that the prevalence of INNS could increase within this water body. During flood events, INNS could spread from Fleet Lake, Abbey Lake and St. Ann's Lake via FCS9 and into the northern Twyners Lakes and then into this water body. Further discussion with stakeholders will be undertaken and management plans produced to reduce the risk of increased INNS prevalence.

¹⁶ Environment Agency (2010). Lower Thames Strategy Stage WFD Assessment. 28 June 2010.

¹⁷ GBV (2018). River Thames Scheme Capacity Improvements and Flood Channel Project, Water Framework Directive Compliance Assessment. March 2018.

¹⁸ GBV (2017). River Thames Scheme Capacity Improvements and Flood Channel Project, Chertsey Bourne – Interaction with the River Thames Scheme. September 2017.

¹⁹ GBV (2017). River Thames Scheme Chertsey Bourne Option Testing Modelling Report. July 2017.

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorphological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
														<p>At present, no pathogen records are known within this water body. Records have previously been found upstream on lakes connected to the Thames (Egham to Teddington) water body. There may be a connection to this water body as a result of the scheme, however this is unknown at the time of writing. Further investigations are ongoing to ascertain any potential increase in risk of pathogens within this water body as a result of construction activities and operation of the scheme.</p> <p>The potential for increased prevalence of INNS in this water body could therefore cause measurable direct / indirect impacts to the current ecological or chemical status of this water body. This could affect its ability to achieve future RBMP objectives. This water body was previously screened Out at the first re-screening stage but is now screened into the preliminary assessment following a review of the INNS gap analysis results.</p>
Addlestone Bourne (Mill / Hale to Chertsey Bourne)	GB10 60390 17020	River	Thames, Wey and Trib	Not A / HMWB	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Good Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Hydromorphological Supporting Elements – Supports good Chemical Status - Fail	Macrophytes and Phytobenthos Combined – Point source (sewage discharge - continuous) Phosphate – Point source (sewage discharge - continuous)	Good Ecological Status by 2027 Good Chemical Status by 2063	Upstream - Addlestone Bourne (West End to Hale/Mill Bourne confluence at Mimbridge) and Hale/Mill Bourne (Bagshot to Addlestone Bourne confluence near Chobham) Downstream - Chertsey Bourne (Chertsey to River Thames confluence)	Not mentioned in Strategy WFD Assessment.	<p>Screened Out - There will be no impact on this river as there will be no modification or change to connectivity of the river to existing water bodies or the proposed channel.</p> <p>No change in hydrology or water quality anticipated from any changes in the flood regime as a result of the project.</p>	Out	<p>This water body is upstream of the proposed works. There will be no modification or change to the connectivity of the river to existing water bodies or the proposed channels.</p> <p>It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.</p>

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorphological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
Chertsey Bourne (Virginia Water to Chertsey)	GB10 60390 17070	River	Thames, Wey and Trib	HMWB	SPA (South West London Waterbodies (St Ann's Lake water body adjacent) - UK9012171), Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016) and SAC (Thursley, Ash, Pirbright & Chobham SAC - UK0012793, upstream of the study area)	Good Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Hydromorphological Supporting Elements – Supports good Chemical Status - Fail	Fish - Physical modifications (Reservoir/ Impoundment – non flow related, barriers – ecological discontinuity) Dissolved oxygen - Physical modification (barriers-ecological discontinuity) Mitigation Measures Assessment - Physical modification (recreation)	Good Ecological Status by 2027 Good Chemical Status by 2063	Upstream – Chertsey Bourne (Ascot to Virginia Water) and Chertsey Bourne (Sunningdale to Virginia Water). Downstream - Chertsey Bourne (Chertsey to River Thames confluence)	Not mentioned in Strategy WFD Assessment.	Screened In - Footprint of new flow control structure/bank protection for spill structure will be within this water body. The formalisation of the existing overspill into St Ann's lake is not expected to change hydrological conditions in this water body as the informal overspill already diverts flows away from this section of the Chertsey Bourne.	In	<p>Previous analysis of the potential impacts the project will have on the interactions between the River Thames and Chertsey Bourne and Chertsey Bourne works options testing using the Thames Lower 1D-2D model was undertaken in 2017. These outputs have been used to inform this screening decision. The footprint of the new flow control structure/bank protection for spill structure will be within this water body, therefore this water body is screened in for further assessment.</p> <p>Changing the hydrological regime can impact on the ecological status. However, the formalisation of the existing overspill into St Ann's Lake (FCS8) (see Appendix A) is not expected to change hydrological conditions in this water body as the informal overspill already diverts flows away from this section of the Chertsey Bourne during flood conditions. The INNS gap analysis has identified several 'high risk' INNS within Fleet Lake, Abbey Lake and St. Ann's Lake. There is a risk that the prevalence of INNS could increase within this water body. INNS could spread from Fleet Lake, Abbey Lake and St. Ann's Lake during flood events into the northern Twynersh Lakes and into this water body. Further discussion with stakeholders will be undertaken and management plans produced to reduce the risk of increased INNS prevalence.</p> <p>At present, no pathogen records are known within this water body. Records have previously been found upstream on lakes connected to the Thames (Egham to Teddington) water body. There may be a connection to this water body as a result of the scheme, however this is unknown at the time of writing. Further investigations are ongoing to ascertain any potential increase in risk of pathogens within this water body as a result of construction activities and operation of the scheme.</p> <p>Works are proposed within this water body and there is potential for increased prevalence of INNS; therefore, it is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.</p>
Colne Brook	GB10 60390 23010	River	Thames, Colne	HMWB	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Moderate Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Hydromorphological Supporting Elements – Supports good Chemical Status - Fail	Phosphate - Point source (sewage discharge - continuous), Diffuse sources (contaminated land, urbanisation – urban development) Fish - Physical modification (flood protection – structures)	Moderate Ecological Status by 2015 (Disproportionately expensive: Unfavourable balance of costs and benefits for Phosphate element) Good Chemical Status by 2063	Upstream - Horton Brook and Alderbourne Downstream - Thames (Cookham to Egham)	"No likely direct impact (earlier strategy options that would have severely impacted this waterbody were rejected)"	Screened Out - There will be no direct impact on Colne Brook, as there will be no modification or change to connectivity of the river to existing water bodies or the proposed channel. Colne Brook's confluence with River Thames is between Channel Sections 1 and 2. This water body is	In	<p>This water body is approximately 3km upstream of the Runnymede Channel. There will be no modification or change to connectivity of the river to existing water bodies or the proposed channels. During 1 in 100-year flood events on the River Thames, this water body may experience a reduction in flood risk, and subsequent changes to hydrological regime. These changes are anticipated to be temporary and infrequent (1 in 100-years).</p> <p>This water body was previously screened out in first rescreening assessment.</p>

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorph -ological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
								Mitigation Measures Assessment - Physical modification (Local and Central Government)				close to the proposed flood embankment (FW2b), but good construction practices will avoid any effect. No change or measurable indirect impact in hydrology or water quality anticipated from any changes in the flood regime as a result of the project..		The Land South of Wraysbury Reservoir HCA lies within the water body boundary. The enabling and construction works for this HCA may lead to impacts on the ecology and water quality of the water body. Works are proposed within this water body. HCA enabling and construction works could impact the current WFD status of this water body, as well as its ability to meet future WFD objectives, based on proximity to the water body. This water body is therefore screened in for further assessment.
Datchet Common Brook	GB10 60390 23520	River	Thames, Maidenhead and Sunbury	HMWB	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016) and SPA (South West London Waterbodies (Wraysbury Lake within 200m of water body) – UK9012171)	Poor Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Hydromorpho logical Supporting Elements – Supports good Chemical Status - Fail	Fish - Diffuse source (urbanisation – urban development), Physical modification (urbanisation – urban development and transport) Macrophytes and Phytobenthos Combined - Diffuse source (transport drainage), Point source (Water Industry) Dissolved oxygen - Unknown Phosphate -Point source (Water Industry), Diffuse source (transport drainage) Mitigation Measures Assessment - Physical modification (agriculture and rural land management, and urban and transport)	Good Ecological Status by 2027 Good Chemical Status by 2063	Downstream - Thames (Cookham to Egham)	"This stream may be incorporated into Channel Section 1. Up to 1km of impacted brook."	Screened In - Datchet Common Brook would be intersected by proposed channel between Datchet and Sunnymeads (CS1).	Out	This water body is approximately 8.5km upstream of the Runnymede Channel. There will be no modification or change to connectivity of the river to existing water bodies or the proposed channels. During 1 in 100-year flood events on the River Thames, this water body may experience a slight reduction in flood risk, and subsequent changes to hydrological regime. These changes are anticipated to be temporary and infrequent (1 in 100-years). It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorphological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
Horton Brook	GB10 60390 23040	River	Thames, Colne	Not A / HMWB	SPA - Horton Brook flows into Wraysbury No. 2 water body Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Moderate Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Hydromorphological Supporting Elements – Supports good Chemical Status - Fail	Phosphate - Diffuse source (urbanisation – urban development), Point source (misconnections) Invertebrates - Physical modifications (Reservoir / Impoundment – non flow related, urbanisation – urban development), Point sources (Trade/Industry discharge, misconnections), Diffuse source (urbanisation – urban development)	Good Ecological Status by 2027 Good Chemical Status by 2063	Wraysbury No. 2 water body intersects Horton Brook. Downstream - Colne Brook	"This stream is likely to be incorporated into Channel Section 1. Up to 1km of impacted brook."	Screened In - Horton Brook would be intersected by proposed channel north of Wraysbury No. 2 water body - note the river already flows into Wraysbury No. 2 water body in north-east corner of the lake. In addition, Horton Brook will be canalised between the east and west halves of Kingsmead Island lake with penstock or tilting weir at inlet to the lake.	Out	This water body is approximately 3km upstream of the Runnymede Channel. There will be no modification or change to connectivity of the river to existing water bodies or the proposed channels. Following design changes, this water body is no longer within the ZoI, and is therefore screened out from further assessment. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.
Surrey Ash	GB10 60390 23480	River	Thames, Colne	HMWB	SPA (King George VI Reservoir within 200m of water body), Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Moderate Ecological Status Good Chemical Status	Moderate Ecological Status Hydromorphological Supporting Elements – Supports good Chemical Status - Fail	Phosphate - Point sources (sewage discharge – continuous, misconnections), Diffuse source (urbanisation – urban development) Mitigation Measures Assessment - Physical modifications (urban and transport, Local and Central Government)	Moderate Ecological Status by 2015 (Disproportionately expensive: Unfavourable balance of costs and benefits for Phosphate element) Good Chemical Status by 2063	Upstream - River Colne (confluence with Chess to River Thames). Downstream - Thames (Egham to Teddington)	Not mentioned in Strategy WFD Assessment.	Screened Out - There will be no direct impact on this river as there will be no modification or change to connectivity of the river to existing water bodies or the proposed channel. The River Surrey Ash's confluence with River Thames is downstream of the flood relief channel and upstream of Sunbury Weir. A change in flood risk is as a result of the Project (during a 1 in 100-year flood event) is expected, however this effect will be temporary and infrequent and therefore the effects are considered to be negligible.	Out	There will be no modification or change to connectivity of the river to existing water bodies or the proposed channels, therefore no direct impact in water quality is anticipated as a result of the project. The Surrey Ash's confluence with River Thames is downstream of the Shepperton Channel and the bed lowering downstream of Desborough Cut, and downstream of Sunbury Weir. A change in flood risk in this water body as a result of the Project is expected, this effect will be temporary and infrequent (only during a 1 in 100-year flood event) and therefore the potential effects on hydrological, ecological and chemical elements are considered to be negligible. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorph -ological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
Thames (Cookham to Egham)	GB10 60390 23231	River	Thames, Maidenhead and Sunbury	HMWB	Drinking Water Protected Area (UKGB106039 023231), Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016) , Nitrates Directive (Roundmoor Ditch to Boveney Ditch NVZ S466 – ID S466), Urban Waste Water Treatment Directive (River Thames - UKENR117), SPA (South West London Waterbodies – UK9012171)	Moderate Ecological Status Chemical Status – Fail	Moderate Ecological Status Hydromorpho logical Supporting Elements – Not assessed Chemical Status - Fail	Phosphate - Diffuse sources (transport drainage, agriculture and rural land management), Point source (sewage discharge - continuous) Mitigation Measures Assessment - Physical modification (navigation, Water Industry, Local and Central Government) Hydrological Regime (flow – surface water abstraction)	Moderate Ecological Status by 2015 (Disproportionately expensive: Unfavourable balance of costs and benefits for Phosphate element) Good Chemical Status by 2063	Upstream - Thames (Reading to Cookham) plus other tributaries. Downstream - Thames (Egham to Teddington)	"Modification in the areas of the channel offtakes and outfalls. Potential water quality and ecological issues due to return of diversion channel water. Potential entrainment of fish within diversion channels. Overall improved connectivity of River with its floodplain in Reach 3 [Datchet to Walton Bridge] due to presence of new channels."	Screened In - Point modification at Channel Section inlet and outlet. Changes to flow quantity during channel operation although only at high flows. There will also be an augmented flow of 0.5-1.5m ³ /s into the flood relief channel during normal conditions. There may be changes in water quality through the lakes and excavated land, this may affect this WFD water body where the flood relief channel re-enters River Thames. Operation of the scheme may result in changes to hydromorphological conditions; reducing stream power, the movement of coarser materials and potentially reducing habitat forming opportunities. Note that Channel Section 1 re-enters River Thames 1.6km upstream of the boundary between the Cookham to Egham and Egham to Teddington water bodies, so this water body is unlikely to be substantially influenced by water quality changes.	In	No works are proposed within this water body. There will be no change to connectivity of the water body to existing water bodies or the proposed channels therefore no direct or indirect impacts to water quality are anticipated as a result of the project. This water body is immediately upstream of the WFD water body the Runnymede and Spelthorne Channels intersect (Thames (Egham to Teddington)). The downstream boundary of this water body is approximately 1.5km upstream of the Runnymede Channel intake, therefore, operation of the project could result in changes to hydromorphological conditions; reducing stream power, the movement of coarser materials and potentially reducing habitat forming opportunities, which may have subsequent impacts on biological quality elements. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.
Thames (Egham to Teddington)	GB10 60390 23232	River	Thames, Maidenhead and Sunbury	HMWB	Drinking Water Protected Area (UKGB106039 023232), Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016) , Urban Waste Water Treatment Directive (River Thames - UKENR117),	Poor Ecological Status Chemical Status – Fail	Poor Ecological Status Hydromorpho logical Supporting Elements – Not assessed Chemical Status - Fail	Macrophytes and Phytobenthos Combined - Diffuse source (agriculture and rural land management – poor nutrient management), Point source (sewage discharge - continuous) Phosphate - Diffuse sources	Poor Ecological Status by 2015 (Disproportionately expensive: Disproportionate burdens; and Technically infeasible: No known technical solution is available for Phosphate and Macrophytes and Phytobenthos Combined elements)	Upstream - Thames (Cookham to Egham) plus other tributaries. Downstream - Thames Upper (Transitional Water Body)	"Modification in the areas of the channel offtakes and outfalls. Potential water quality and ecological issues due to return of diversion channel water. Potential entrainment of fish within diversion channels. Overall improved	Screened In - Point modification at Channel Section 2 and 3 inlets and outlets and the capacity improvements at Desborough Cut, Sunbury weir, Molesey weir and Teddington weir. Changes to flow quantity during channel operation although only at high flows as water will be diverted into the flood relief channels when flows exceed	In	The following proposed works fall within the boundary of this WFD water body: point modification at Runnymede and Spelthorne Channel intakes and outfalls, bed lowering downstream of Desborough Cut, and capacity improvements at Sunbury Weir, Molesey Weir and Teddington Weir. Seven HCAs also lie within this water body (Laleham Reach, Laleham Golf Course, Chertsey Road Tip, Land South of Chertsey Road, Desborough Island and the Land Between Desborough Cut and Engine River. Operation of the project will result in alterations to the hydrological regime. Changes to flow quantity during channel operation are anticipated, during flood conditions as water will be diverted into the flood relief

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					SPA (South West London Waterbodies – UK9012171)			(agriculture and rural land management - poor nutrient management, urban and transport), Point source (sewage discharge - continuous) Temperature - Low flow (not drought), Physical modification (water level management in impounded water bodies), Point source (sewage discharge - continuous) Mitigation Measures Assessment - Physical modification (Local and Central Government, Water Industry, navigation) Hydrological Regime (flow – surface water abstraction)	Good Chemical Status by 2063		connectivity of River with its floodplain in Reach 3 due to presence of new channels. Additional modification through Reach 4 (Desborough Cut, weir improvements). Possible bankside improvements (e.g. lowering) and habitat creation in localised areas such as Hurst Park."	200m ³ /s. There will be an augmented flow of 0.5-1.5m ³ /s into the flood relief channels during normal conditions. There may be changes in water quality through the lakes and excavated land, this may affect this WFD water body where the flood relief channels re-enters River Thames. Operation of the scheme may result in changes to hydromorphology conditions; reducing stream power, the movement of coarser materials and potentially reducing habitat forming opportunities.		channels when flows exceed 200m ³ /s. There will be an augmented flow of up to 1.5m ³ /s into the flood relief channels during normal and low flow conditions. Operation of the project may result in changes to hydromorphology conditions; reducing stream power, the movement of coarser materials and potentially reducing habitat forming opportunities, which may have subsequent impacts on biological quality elements. This augmented flow may also pose risks to the water quality and ecology of the River Thames by impacting flow and dilution at times of normal/low flow. There may be changes in water quality as a result of construction and operational activities as it will create new connections to other water bodies the proposed channels will intersect. The flood relief channels will create new transport pathways between sources of potentially contaminated sediment and the River Thames, including through disturbance to lake surface sediment the channels intersect, through excavated land for the channel creation, and through bed lowering downstream of Desborough Cut. The construction and operation (through management and maintenance) of the HCAs may also present a risk to the ecology and water quality of this water body. There is also a risk of introducing aquatic INNS and fish pathogens into the River Thames as a result of the connections with new water bodies the Runnymede and Spelthorne Channels will intersect. Further work is ongoing to investigate the potential risk of increased INNS prevalence. Further discussion with stakeholders will be undertaken, and management plans produced to reduce this risk. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.
The Moat at Egham	GB10 60390 17060	River	Thames, Wey and Trib	HMWB	SPA (South West London Waterbodies (St Ann's Lake water body adjacent) - UK9012171), Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Poor Ecological Status Chemical Status – Does not require assessment	Poor Ecological Status Hydromorpho logical Supporting Elements – Does not support good Chemical Status – Fail	Invertebrates – Point source (sewage discharge – intermittent), Natural (drought), Physical modification (barriers – ecological discontinuity, agriculture and rural land management – land drainage) Macrophytes and Phytobenthos Combined – Diffuse source (urban and transport – transport	Good Ecological Status by 2027 Good Chemical Status by 2063	Thorpe Park Lakes, St Ann's Lake (the river intersects these lakes). Downstream - Chertsey Bourne (Chertsey to River Thames confluence)	"This river flows into St Ann's Lake, but would not be directly impacted by the scheme."	Screened Out - The Moat at Egham will not be directly impacted by the Scheme upstream (west of) of St Ann's Lake. It also flows out of the Thorpe Park lakes in the south east corner before flowing into the Chertsey Bourne. Replacement of an existing control structure in this downstream section (400m from the confluence with the Chertsey Bourne) is not expected to affect the hydrological conditions of the water body. Furthermore, flows from the flood relief channel	In	Works are located within this water body. The footprint of the replacement flow control structure (FCS9) will be within this water body, downstream of St Ann's Lake. The flow control structure may have the potential to result in hydromorphological changes. Norlands Lane HCA also lies within this water body boundary. There is potential that construction and operation of this HCA may impact upon ecology and water quality of the water body. The INNS gap analysis has identified several 'high risk' INNS within Fleet Lake, Abbey Lake and St. Ann's Lake. Although the existing hydraulic connection will not change as a result of the scheme, there is a risk that the prevalence of INNS could increase within this water body. During flood events, INNS could spread from Fleet Lake, Abbey Lake and St. Ann's Lake via FCS9 and into the northern Twynersh Lakes which form part of this water body. Further discussion with stakeholders will be undertaken and management plans produced to reduce the risk of increased INNS prevalence.

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								drainage), Natural (drought), Point source (sewage discharge – intermittent), Physical modification (agriculture and rural land management – land drainage) Phosphate – Point sources (sewage discharge – continuous, and sewage discharge – intermittent), Diffuse source (urban and transport – transport drainage) Dissolved oxygen – Natural (drought) Mitigation Measures Assessment – Physical modification (recreation) Hydrological Regime – Flow (surface water abstraction)				will not reach this water body. No measurable affect is anticipated.		At present, no pathogen records are known within this water body. Records have previously been found upstream on lakes connected to the Thames (Egham to Teddington) water body. There may be a connection to this water body as a result of the RTS, however this is unknown at the time of writing. Further investigations are ongoing to ascertain any potential increase in risk of pathogens within this water body as a result of construction activities and operation of the project. Therefore, it is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.
Mole (Hersham to River Thames Conf at East Molesey)	GB10 60390 17622	River	Thames, Mole	HMWB	N/A	Moderate Ecological Status Good Chemical Status	Moderate Ecological Status Hydromorphological Supporting Elements – Supports good Chemical Status - Fail	Phosphate – Point source (sewage discharge – continuous) Mitigation Measures Assessment – Physical modification (recreation, Local and Central Government, urban and transport)	Moderate Ecological Status by 2015 (Disproportionately expensive: Disproportionate burdens; and Technically infeasible: No known technical solution is available for Phosphate element) Good Chemical Status by 2063	Upstream - River Mole (Horley to Hersham) Downstream - Thames (Egham to Teddington)	Not included.	Screened Out - There will be no direct impact on the River Mole as there will be no modification or change to connectivity of the river to existing water bodies or the proposed channel. No change in hydrology or water quality anticipated from any changes in the flood regime as a result of the project as the Mole flows into River Thames downstream of Molesey Weir. A change in flood risk is as a result of the Project (during a 1 in 100-year flood event) is expected, however this	In	There will be no modification or change to connectivity of the river to existing water bodies or the proposed channels. No change in hydrology or water quality is anticipated from any changes in the flood regime as a result of the project as the Mole flows into River Thames downstream of Molesey Weir. A change in flood risk as a result of the project is expected, this effect will be temporary and infrequent (only during a 1 in 100-year flood event) and therefore the potential effects on hydrology, ecological and chemical elements are considered to be negligible. This water body was previously screened out during the first rescreening assessment prior to confirmation of the proposed HCAs. The Grove Farm HCA lies within the water body boundary. The northern boundary of the HCA lies adjacent to the river. The construction and operation (through management and maintenance) of the HCA may lead to impacts on the ecology and water quality of the water body. This water body was previously screened out at the first re-screening stage. However, works are

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorphological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
												effect will be temporary and infrequent and therefore the effects are considered to be negligible.		now proposed within this water body. HCA enabling and construction works could impact the current WFD status of this water body, as well as its ability to meet future WFD objectives, based on proximity to the water body. This water body is therefore screened in for further assessment.
Wey (Shalford to River Thames confluence at Weybridge)	GB10 60390 17630	River	Thames, Wey and Trib	HMWB	Drinking Water Protected Area (Wey (Shalford to River Thames confluence at Weybridge) – UKGB1060390 17630), and Drinking Water Safeguard Zones (Surface Water) (SWSGZ4016 and SWSGZ4015)	Moderate Ecological Status Chemical Status - Fail	Moderate Ecological Status Hydromorphological Supporting Elements – Supports good Chemical Status - Fail	Fish – Physical modification (Urban and transport – urbanisation, navigation – inland boating and structures, navigation – impoundment – u/s elevated water level, barriers – ecological discontinuity, navigation – reservoir / impoundment – non flow related) Macrophytes and Phytobenthos Combined – Point source (sewage discharge – continuous) Phosphate – Point source (sewage discharge – continuous) Mitigation Measures Assessment – Physical modification (Local and Central Government, navigation, recreation)	Good Ecological Status by 2039 Good Chemical Status by 2063	Upstream - Wey Navigation (Pyrford Reach), Wey (Tilford to Shalford) and other tributaries. Downstream - Thames (Egham to Teddington)	Not included.	Screened Out - There will be no direct impact on this river as there will be no interaction between the flood relief channel and the Wey. A change in flood risk is as a result of the Project (during a 1 in 100-year flood event) is expected, however this effect will be temporary and infrequent and therefore the effects are considered to be negligible.	Out	The Wey confluence with the River Thames is approximately 2.5km upstream of the proposed dredging in the River Thames, downstream of Desborough Cut. Flow control structures are in place on the Wey upstream of the point of confluence with the Thames, A change in flood risk is as a result of the Project is expected, this effect will be temporary and infrequent (only during a 1 in 100-year flood event) and therefore the potential effects on hydrology, ecological and chemical elements are considered to be negligible. No impacts to hydrological regime, or subsequent impacts to ecological or chemical elements in the Wey are anticipated. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.
Colne (Confluence with Chess to	GB10 60390 23090	River	Thames, Colne	HMWB	Drinking Water Safeguard Zone (Surface	Poor Ecological Status	Moderate Ecological Status	Macrophytes and Phytobenthos Combined –	Moderate Ecological Status by 2015	Upstream - Colne (from Confluence	Not included.	Screened Out - There will be no direct impact on this river as there	In	This water body is approximately 1.5km upstream of the Runnymede Channel. There will be no

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River Thames)					Water) (SWSGZ4016) SPA (Wraysbury Reservoir adjacent)	Chemical Status - Fail	Hydromorpho logical Supporting Elements: Does not support good Chemical Status - Fail	Natural (drought), Flow (groundwater abstraction), Physical modification (urban and transport – urbanisation), Diffuse source (urban and transport – urbanisation), Point sources (sewage discharge – continuous, private sewage treatment, sewage discharge – intermittent, misconnections – Domestic General Public) Hydrological Regime – Flow (groundwater abstraction), Physical modification (urban and transport – urbanisation) Phosphate – Point sources (misconnections – Domestic General Public, private sewage treatment, sewage discharge – continuous, sewage discharge – intermittent), Diffuse source (urban and transport – urbanisation) Mitigation Measures Assessment – Physical modification (recreation, Local and Central Government)	(Disproportionately expensive: Unfavourable balance of costs and benefits for Phosphate and Hydrological Regime elements. Good status for Fish element prevented by A/HMWB designated use: Action to get biological element to good would have significant adverse impact on use) Good Chemical Status by 2063	with Ver to Gade), Chess, Pinn, and Misbourne. Downstream - Thames (Egham to Teddington)		will be no modification or change to connectivity of the river to existing water bodies or the proposed channel. The Colne flows into River Thames between Channel Sections 1 and 2. A change in flood risk is as a result of the Project (during a 1 in 100 year flood event) is expected, however this effect will be temporary and infrequent and therefore the effects are considered to be negligible.		modification or change to connectivity of the river to existing water bodies or the proposed channels. During 1 in 100-year flood events on the River Thames, this water body may experience a reduction in flood risk, and subsequent changes to hydrological regime. However, these changes are anticipated to be temporary and infrequent (1 in 100-years). This water body was previously screened out in the first rescreening assessment. The Land South of Wraysbury Reservoir HCA lies within the water body boundary. The enabling and construction works for this HCA may lead to impacts on the ecology and water quality of the water body. Works are proposed within this water body. HCA enabling and construction works could impact the current WFD status of this water body, as well as its ability to meet future WFD objectives, based on proximity to the water body. This water body is therefore screened in for further assessment.

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Heron Lake	GB30 64253 8	Lake	Thames, Colne	Artificial	Drinking Water Protected Area (Heron Lake – UKGB3064253 8), Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Good Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Chemical Status - Fail	Mitigation Measures Assessment – Physical modification (Water Industry)	Good Ecological Status by 2027 Good Chemical Status by 2063	None (County Ditch (not WFD water body) flows in and out of Heron Lake)	"No likely direct impact."	Screened Out - There are not expected to be any interactions or connectivity between the flood relief channel and Heron Lake and therefore no impact is expected.	Out	No works are proposed within or adjacent to this water body. There are not expected to be any interactions or connectivity between the flood relief channel and Heron Lake. Following updated design changes, this water body is no longer within the ZoI, and is therefore screened out from further assessment. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.
The Queen Mother Reservoir	GB30 64233 4	Lake	Thames, Colne	Artificial	Drinking Water Protected Area (The Queen Mother Reservoir – UKGB3064233 4), Urban Waste Water Treatment Directive (Queen Mother Reservoir – UKENLK176), Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Poor Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Chemical Status - Fail	Mitigation Measures Assessment – Physical modification (Water Industry)	Good Ecological Status by 2021 Good Chemical Status by 2063	None	Not mentioned in Strategy WFD Assessment.	Screened Out - There are not expected to be any interactions or connectivity between the flood relief channel and the reservoir and therefore no impact is expected.	Out	No works are proposed within or adjacent to this water body. There are not expected to be any interactions or connectivity between the flood relief channel and The Queen Mother Reservoir. Following updated design changes, this water body is no longer within the ZoI, and is therefore screened out from further assessment. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.
Queensmead	GB30 64256 9	Lake	Thames, Colne	Artificial	Drinking Water Protected Area (Queensmead – UKGB3064256 9), Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Good Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Chemical Status - Fail	Mitigation Measures Assessment – Physical modification (Water Industry, recreation)	Good Ecological Status by 2027 Good Chemical Status by 2063	None	Not mentioned in Strategy WFD Assessment.	Screened Out - There are not expected to be any interactions or connectivity between the flood relief channel and Queensmead Lake and therefore no impact is expected.	Out	No works are proposed within or adjacent to this water body. There are not expected to be any interactions or connectivity between the flood relief channel and Queensmead Lake. Following updated design changes, this water body is no longer within the ZoI, and is therefore screened out from further assessment. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.
Thorpe Park Lakes	GB30 64275 3	Lake	Thames, Wey and Trib	Artificial	SPA (St Ann's Lake, South West London Waterbodies – UK9012171)	Moderate Ecological Status Chemical Status – Does not require assessment	Poor Ecological Status Chemical Status - Fail	Macrophytes and Phytobenthos Combined – Physical modification (rural land management – land drainage)	Good Ecological Status by 2027 Good Chemical Status by 2063	Downstream - The Moat at Egham	"Channel would pass through Fleet and Abbey Lakes, which would become online lakes incorporated into the diversion channel. There is likely to be a significant change in the water quality of these lakes, due to inputs of water from River	Screened In - Potential for changes in lake residence times, water quality and sediment regime, mainly from flood channel and from Chertsey Bourne formalised spill. Part of water body is SPA designated and other areas are SPA supporting sites, so it is an important site to join	In	The Runnymede Channel will pass through Fleet and Abbey Lakes, incorporating the lakes into the flood relief channel. Manor Lake will be separated from Fleet Lake. St. Ann's Lake will be separated from Fleet and Abbey Lakes (and the Runnymede Channel), there will be a formalisation of the existing overflow into St Ann's lake from Chertsey Bourne (FCS8), a flow control structure between St Ann's and Abbey Lakes (FCS7) and replacement of a control structure to allow flows back into the Chertsey Bourne downstream (FCS9) are proposed. There will likely be changes in lake residence times, water quality and sediment regime, mainly from the Runnymede Channel and Chertsey Bourne. Part of

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											Thames. Structures will be added to St Ann's Lake to formalise existing flood spills from the Chertsey Bourne into St Ann's Lake, to allow them to be diverted down the flood relief channel. There are no likely impacts on Manor Lake."	up WFD and HRA assessments.		<p>the water body is an SPA designation and other areas are SPA supporting sites. There is also a risk of introducing aquatic INNS and fish pathogens from upstream water bodies to Abbey and Fleet Lakes once the Runnymede Channel is in operation, and from the Chertsey Bourne during flood events. Further work is ongoing to investigate the potential risk of increased INNS prevalence. Further discussion with stakeholders will be undertaken, and management plans produced to reduce this risk.</p> <p>At present, no pathogen records are known within this water body. Records have previously been found upstream on lakes connected to the Thames (Egham to Teddington) water body. There may be a connection to this water body as a result of the RTS, however this is unknown at the time of writing. Further investigations are ongoing to ascertain any potential increase in risk of pathogens within this water body as a result of construction activities and operation of the project.</p> <p>Manor Lake will be separated from the other Thorpe Park Lakes as part of the project, and therefore have no connectivity with the Runnymede Channel. There may be impacts to ecological quality elements in the Thorpe Park Lakes, as the connectivity between the lakes is lost. Construction of this bund between Manor and Fleet lake will be within the footprint of the water bodies.</p> <p>It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.</p>
Wraysbury Lake	GB30642430	Lake	Thames, Maidenhead and Sunbury	Artificial	SPA (Wraysbury Lake, South West London Waterbodies – UK9012171)	Moderate Ecological Status Chemical Status – Does not require assessment	Poor Ecological Status Chemical Status - Fail	Phytoplankton – Diffuse sources (other) Macrophytes and Phytobenthos Combined – Diffuse sources (other) Mitigation Measures Assessment – Physical modification (other)	Good Ecological Status by 2027 Good Chemical Status by 2063	None	"No likely direct impact although the likely site for mitigation works for the SPA."	Screened Out - There are not expected to be any interactions or connectivity between the flood relief channel and the lake and therefore no impact is expected. Although this lake is close to the flood relief channel, it is separated by a railway line and all construction works will be on the other side of the railway and good construction practices (detailed in a CEMP) will ensure this water body is not effected.	Out	<p>No works are proposed within or adjacent to this water body. There are not expected to be any interactions or connectivity between the flood relief channel and Wraysbury Lake.</p> <p>Following updated design changes, this water body is no longer within the ZoI, and is therefore screened out from further assessment.</p> <p>It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.</p>

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorph -ological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
Wraysbury No. 2	GB30642489	Lake	Thames, Colne	Artificial	SPA (Wraysbury No. 2 water body, South West London Waterbodies – UK9012171), Urban Waste Water Treatment Directive (Wraysbury II Gravel Pit/ Wellapool Lake), Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Poor Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Chemical Status - Fail	Mitigation Measures Assessment – Physical modification (other)	Good Ecological Status by 2027 Good Chemical Status by 2063	Existing inflow and outflow from/back into Horton Brook	"The flood relief channel will run through this lake, with a new separation embankment to separate the channel from the lake. The remainder of the lake that lies outside the channel could see improvements in water quality, through reduced spillages of nutrient rich water from the Colne Brook."	Screened In - Changes to the hydrological regime and water quality are expected as the channel will flow through the Lake. The new separation embankment to separate the channel from the lake in the north western section of the northern lake; and the removal of the separation embankment between the northern and southern lake will lead to water quality effects. Part of water body is SPA designated and other areas are SPA supporting sites, so it is an important site to join up WFD and HRA assessments.	Out	No works are proposed within or adjacent to this water body. There are not expected to be any interactions or connectivity between the flood relief channels and Wraysbury No. 2 Lake. Following updated design changes, this water body is no longer within the Zol, and is therefore screened out from further assessment. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.
Wraysbury Reservoir	GB30642417	Lake	Thames, Colne	Artificial	SPA (Wraysbury Reservoir, South West London Waterbodies – UK9012171), Drinking Water Protected Area (Wraysbury Reservoir – UKGB30642417), Urban Waste Water Treatment Directive (Wraysbury Reservoir – UKENLK177), Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Poor Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Chemical Status - Fail	Total Phosphorous – Point sources (sewage discharge – intermittent, sewage discharge – continuous), Diffuse sources (urban and transport – urbanisation, agriculture and rural land management – poor livestock management) Mitigation Measures Assessment – Physical modification (Water Industry)	Moderate Ecological Status by 2015 (Technically infeasible: No known technical solution is available for Total Phosphorus element) Good Chemical Status by 2063	Abstraction inflow from Thames (Cookham to Egham)	Not mentioned in Strategy WFD Assessment.	Screened Out - There are not expected to be any interactions or connectivity between the flood relief channel and the reservoir and therefore no impact is expected.	In	There is not expected to be any connectivity between the flood relief channels and Wraysbury Reservoir. This water body remains in the Zol due to its proximity to the Habitat Creation Area (HCA) 'Land South of Wraysbury Reservoir'. Works are proposed immediately adjacent to this water body. It is anticipated that HCA enabling and construction works could impact the current WFD status of this water body, as well as its ability to meet future WFD objectives, based on proximity to the water body. This water body is therefore screened in for further assessment.

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Thames Upper	GB53 06039 11403	Transitional	Thames, Thames TraC	HMWB	Urban Waste Water Treatment Directive (River Wandle – UKENRI157)	Moderate Ecological Status Chemical Status - Fail	Moderate Ecological Status Hydromorphological Supporting Elements: Does not support good Chemical Status - Fail	Chemical elements (Cypermethrin (Priority hazardous), Zinc, Benzo(b)fluoranthene, Benzo(g-h-i)perylene, Benzo(k)fluoranthene) – Unknown Tributyltin Compounds – Diffuse sources (urban and transport – contaminated water body bed sediments, urban and transport – urbanisation), Point sources (navigation – use of restricted substances, Industry – contaminated land, Waste treatment and disposal – landfill leaching, sewage discharge – continuous) Mitigation Measures Assessment – Physical modification (Local and Central Government) Phytoplankton (High to Good deterioration, no action required, RFD only) Hydrological Regime (Flow – surface water abstraction)	Good Ecological Status by 2027 Good Chemical Status by 2063	Upstream - Thames (Egham to Teddington) and other tributaries. Downstream - Thames Middle	Not mentioned in Strategy WFD Assessment however SEA States3: "Waterbodies downstream on River Thames could be subject to minor temporary adverse impacts during the construction phase (e.g. through release of sediment) however it is not considered that this would be significant or compromise the objectives of the RBMP for that waterbody. The Strategic Appropriate Assessment for example, scoped out potential impacts on River Thames Estuary SPA due to its distance downstream."	Screened In - This water body is 15km downstream of Desborough Cut, where the last section of flood relief channel returns to River Thames, and therefore no direct impact from the new flood relief channel is expected. The proposed works at Teddington Weir are on the boundary between River Thames (Egham to Teddington) WFD water body and this transitional water body. Therefore, there is potential for an effect on this water body. Consideration of the change in the sediment regime will need to be undertaken to ascertain if there will be any indirect effects from the flood relief channel and the weir works from increases in suspended sediment.	In	This water body is approximately 14km downstream of the bed lowering works at Desborough Cut, and approximately 15km downstream of the Spelthorne Channel Outfall. The proposed works at Teddington Weir are on the boundary between River Thames (Egham to Teddington) WFD water body and this transitional water body. There may be changes in water quality as a result of new connections to other water bodies the channels will intersect as a result of construction and operation of the project. The Runnymede and Spelthorne Channels will create new transport pathways between the River Thames and sources of potentially contaminated sediment and potentially contaminated water bodies, including through disturbance to lake sediments, excavation of land for the channel creation, and through bed lowering downstream of Desborough Cut. This water body is currently failing for Chemical Status, therefore using a precautionary approach, 'any deterioration' in quality elements in the lowest class constitutes deterioration as defined by the WFD, as per the CJEU Bund Case ruling. There is also a risk of introducing aquatic INNS and fish pathogens into the River Thames as a result of the connections with new water bodies the Runnymede and Spelthorne Channels will intersect. Further discussion with stakeholders will be undertaken and management plans produced to reduce this risk. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.
Thames Middle	GB53 06039 11402	Transitional	Thames, Thames TraC	HMWB	Urban Waste Water Treatment Directive (Lea Navigation & River Lea – EKENRI59), SPA (Thames	Moderate Ecological Status Chemical Status – Fail	Moderate Ecological Status Hydromorphological Supporting Elements: Not assessed	Chemical elements (Zinc, Benzo(b)fluoranthene, Benzo(g-h-i)perylene, – Unknown Tributyltin Compounds –	Moderate Ecological Status by 2015 (Disproportionately expensive: Unfavourable balance of costs and benefits for	Upstream – Thames Upper Downstream – Thames Lower	Not mentioned in Strategy WFD Assessment.	Not included.	In	This transitional water body is downstream of all works. There may be changes in water quality as a result of new connections between the water body upstream (Thames (Egham to Teddington)) and other water bodies the channels will intersect as a result of construction and operation of the project. As there is a risk of creating new pollutant pathways to the upstream water body, this water body is

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorph -ological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
					Estuary & Marshes – UK9012021)		Chemical Status – Fail	Diffuse sources (urban and transport – contaminated water body bed sediments, urban and transport – urbanisation), Point sources (navigation – use of restricted substances, Industry – contaminated land, Waste treatment and disposal – landfill leaching, sewage discharge – continuous) Mitigation Measures Assessment – Physical modification (Local and Central Government) Phytoplankton (High to Good deterioration, no action required, RFD only) Angiosperms – Physical modification (Local and Central Government – land drainage structures)	Dissolved Inorganic Nitrogen element. Good status for Angiosperms element prevented by A/HMWB designated use: Action to get biological element to good would have significant adverse impact on use). Good Chemical Status by 2063					considered for further assessment on a precautionary basis. Due to the proximity to the project, as well as the increased dilution effects of the tidal extent downstream of this transitional water body, no further downstream water bodies are considered in the zone of influence. This water body is currently failing for Chemical Status, therefore using a precautionary approach, 'any deterioration' in quality elements in the lowest class would constitute deterioration as defined by the WFD, as per the CJEU Bund Case ruling. There is also a risk of introducing aquatic INNS and fish pathogens into the River Thames as a result of the connections with new water bodies the Runnymede and Spelthorne Channels will intersect. Further work is ongoing to investigate the potential risk of increased INNS prevalence. Further discussion with stakeholders will be undertaken, and management plans produced to reduce this risk. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.
Queen Mary Reservoir	GB30642639	Lake	Thames, Colne	Artificial	Drinking Water Safeguard Zone (SWSGZ4016), Drinking Water Protected Area (Queen Mary Reservoir – UKGB30642639)	Poor Ecological Status Chemical Status – Does not require assessment	Poor Ecological Status Chemical Status - Fail	Mitigation Measures Assessment – Physical modification (Water Industry) Total Phosphorus – Point sources (sewage discharge – continuous, sewage discharge – intermittent), Diffuse sources (urban and transport – urbanisation,	Poor Ecological Status by 2015 (Technically infeasible: No known technical solution is available for Macrophytes and Phytobenthos Combined, Phytoplankton, and Total Phosphorus elements) Good Chemical Status by 2063	Abstraction inflow (Laleham Intake) from Thames (Egham to Teddington)	Not mentioned in Strategy WFD Assessment.	Not included.	In	No works are proposed within or adjacent to this water body. The intake to this reservoir is on the water body 'Thames (Egham to Teddington)', downstream of the Runnymede Channel intake and upstream of the Spelthorne Channel intake and Runnymede Channel outlet. There is therefore potential to be reduced abstraction allowances during low flows, as the Runnymede and Spelthorne Channels will require an augmented flow of 0.5-1.5m³/s into the flood relief channels from the River Thames during normal conditions. This has the potential to impact water levels in the reservoir, which may have subsequent impacts on hydromorphological, physicochemical and ecological quality elements. It is anticipated that the project could impact the current status or future WFD objectives of this

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorph -ological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
								agriculture and rural land management – poor livestock management) Phytoplankton – Point sources (sewage discharge continuous, sewage discharge – intermittent), Diffuse source (agriculture and rural land management – poor livestock management) Macrophytes and Phytobenthos Combined - Point sources (sewage discharge continuous, sewage discharge – intermittent), Diffuse source (agriculture and rural land management – poor nutrient management)						water body. This water body is therefore screened in for further assessment.
Knight Reservoir	GB30642791	Lake	Thames, Maidenhead and Sunbury	Artificial	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016), SPA (South West London Waterbodies – UK9012171)	Moderate Ecological Status Good Chemical Status	Moderate Ecological Status Chemical Status - Fail	Total Phosphorus – Point source (sewage discharge – intermittent)	Moderate Ecological Status by 2015 (Disproportionately expensive: Unfavourable balance of costs and benefits for Total Phosphorus element) Good Chemical Status by 2063	Abstraction inflow from Thames (Egham to Teddington)	Not mentioned in Strategy WFD Assessment.	Not included.	In	The intake to this water body is on 'Thames (Egham to Teddington)', downstream of the bed lowering works at Desborough Cut, and the Spelthorne Channel Outfall. There may therefore be changes in water quality in this reservoir due to changes to quality of abstracted water as a result of new connections to other water bodies the channels will intersect as a result of construction and operation of the project. The Runnymede and Spelthorne Channels will create new transport pathways between the River Thames and sources of potentially contaminated sediment and potentially contaminated water bodies, including through disturbance to intersected lake sediments, through excavated land for the channel creation, and through bed lowering downstream of Desborough Cut. This water body is currently failing for Chemical Status, therefore 'any deterioration' in quality elements in the lowest class would constitute deterioration as defined by the WFD, as per the CJEU Bund Case ruling. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.

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Bessborough Reservoir	GB30 64277 9	Lake	Thames, Maidenhead and Sunbury	Artificial	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016) , SPA (South West London Waterbodies – UL9012171)	Moderate Ecological Status Good Chemical Status	Moderate Ecological Status Chemical Status – Fail	Total Phosphorus – Point source (sewage discharge – intermittent)	Moderate Ecological Status by 2015 (Disproportionately expensive: Unfavourable balance of costs and benefits for Total Phosphorus element) Good Chemical Status by 2063	Abstraction inflow from Thames (Egham to Teddington)	Not mentioned in Strategy WFD Assessment.	Not included.	In	The intake to this water body is on 'Thames (Egham to Teddington)', downstream of the bed lowering works at Desborough Cut, and the Spelthorne Channel Outfall. There may therefore be changes in water quality in this reservoir due to changes to quality of abstracted water as a result of new connections to other water bodies the channels will intersect. The Runnymede and Spelthorne Channels will create new transport pathways between the River Thames and sources of potentially contaminated sediment and potentially contaminated water bodies, including through disturbance to intersected lake sediments, through excavated land for the channel creation, and through bed lowering downstream of Desborough Cut. This water body is currently failing for Chemical Status, therefore 'any deterioration' in quality elements in the lowest class would constitute deterioration as defined by the WFD, as per the CJEU Bund Case ruling. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.
Kempton Park East Reservoir	GB30 64261 4	Lake	Thames, London	Artificial	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016) , SPA (South West London Waterbodies – UK9012171)	Good Ecological Status Chemical Status – Does not require assessment	Good Ecological Status Chemical Status - Fail	N/A	Good Ecological Status by 2015 Good Chemical Status by 2063	Abstraction inflow from Thames (Egham to Teddington)	Not mentioned in Strategy WFD Assessment.	Not included.	In	The intake to this water body is on 'Thames (Egham to Teddington)', downstream of the bed lowering works at Desborough Cut, and the Spelthorne Channel Outfall. There may therefore be changes in water quality in this reservoir due to changes to quality of abstracted water as a result of new connections to other water bodies the channels will intersect. The Runnymede and Spelthorne Channels will create new transport pathways between the River Thames and sources of potentially contaminated sediment and potentially contaminated water bodies, including through disturbance to intersected lake sediments, through excavated land for the channel creation, and through bed lowering downstream of Desborough Cut. This water body is currently failing for Chemical Status, therefore 'any deterioration' in quality elements in the lowest class would constitute deterioration as defined by the WFD, as per the CJEU Bund Case ruling. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.

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Queen Elizabeth 2 Storage Reservoir	GB30642813	Lake	Thames, Mole	Artificial	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016), Urban Waste Water Treatment Directive (Queen Elizabeth II Storage Reservoir – UKENLK175)	Moderate Ecological Status Chemical Status – Does not require assessment	Good Ecological Status Chemical Status – Fail	N/A	Good Ecological Status by 2015 Good Chemical Status by 2063	Abstraction inflow from Thames (Egham to Teddington)	Not mentioned in Strategy WFD Assessment.	Not included.	In	The intake to this water body is on 'Thames (Egham to Teddington)', downstream of the bed lowering works at Desborough Cut, and the Spelthorne Channel Outfall. There may therefore be changes in water quality in this reservoir due to changes to quality of abstracted water as a result of new connections to other water bodies the channels will intersect. The Runnymede and Spelthorne Channels will create new transport pathways between the River Thames and sources of potentially contaminated sediment and potentially contaminated water bodies, including through disturbance to intersected lake sediments, through excavated land for the channel creation, and through bed lowering downstream of Desborough Cut. This water body is currently failing for Chemical Status, therefore 'any deterioration' in quality elements in the lowest class would constitute deterioration as defined by the WFD, as per the CJEU Bund Case ruling. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.
Island Barn Reservoir	GB30642841	Lake	Thames, Mole	Artificial	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	Moderate Ecological Status Good Chemical Status	Moderate Ecological Status Chemical Status - Fail	Total Phosphorus – Point source (sewage discharge – intermittent)	Moderate Ecological Status by 2015 (Disproportionately expensive: Unfavourable balance of costs and benefits for Total Phosphorus element). Good Chemical Status by 2063	Abstraction inflow from Thames (Egham to Teddington)	Not mentioned in Strategy WFD Assessment.	Not included.	In	The intake to this water body is on 'Thames (Egham to Teddington)', downstream of the bed lowering works at Desborough Cut, and the Spelthorne Channel Outfall. There may therefore be changes in water quality in this reservoir due to changes to quality of abstracted water as a result of new connections to other water bodies the channels will intersect. The Runnymede and Spelthorne Channels will create new transport pathways between the River Thames and sources of potentially contaminated sediment and potentially contaminated water bodies, including through disturbance to intersected lake sediments, through excavated land for the channel creation, and through bed lowering downstream of Desborough Cut. This water body is currently failing for Chemical Status, therefore 'any deterioration' in quality elements in the lowest class would constitute deterioration as defined by the WFD, as per the CJEU Bund Case ruling. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.

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Lockwood Reservoir	GB30 64186 5	Lake	Thames, London	Artificial	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4006) , Nitrates Directive (LEE NVZ S443), SPA (Lee Valley – UK9012111), Drinking Water Protected Area (Lockwood Reservoir – UKGB3064186 5)	Moderate Ecological Status Good Chemical Status	Moderate Ecological Status Chemical Status - Fail	Mitigation Measures Assessment – Physical modification (Water Industry) Total phosphorus – Point source (sewage discharge – continuous)	Moderate Ecological Status by 2015 (Disproportionately expensive: Unfavourable balance of costs and benefits; and Technically infeasible: No known technical solution is available for Total Phosphorus element). Good Chemical Status by 2063	Abstraction inflow from Thames (Egham to Teddington) via Thames-Lee Tunnel	Not mentioned in Strategy WFD Assessment.	Not included.	In	The intake to this water body (Thames-Lee Tunnel) is on 'Thames (Egham to Teddington)', downstream of the bed lowering works at Desborough Cut, and the Spelthorne Channel Outfall. There may therefore be changes in water quality in this reservoir due to changes to quality of abstracted water as a result of new connections to other water bodies the channels will intersect. The Runnymede and Spelthorne Channels will create new transport pathways between the River Thames and sources of potentially contaminated sediment and potentially contaminated water bodies, including through disturbance to intersected lake sediments, through excavated land for the channel creation, and through bed lowering downstream of Desborough Cut. This water body is currently failing for Chemical Status, therefore 'any deterioration' in quality elements in the lowest class would constitute deterioration as defined by the WFD, as per the CJEU Bund Case ruling. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.
Banbury Reservoir	GB30 64700 3	Lake	Thames, London	Artificial	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4006) , Nitrates Directive (LEE NVZ S443), SPA (Lee Valley – UK9012111), Drinking Water Protected Area (Banbury Reservoir – UKGB3064700 3)	Good Ecological Status Chemical Status – Does not require assessment	Moderate Ecological Status Chemical Status – Fail	N/A	Good Ecological Status by 2021 Good Chemical Status by 2063	Abstraction inflow from Thames (Egham to Teddington) via Thames-Lee Tunnel	Not mentioned in Strategy WFD Assessment.	Not included.	In	The intake to this water body is on 'Thames (Egham to Teddington)', downstream of the bed lowering works at Desborough Cut, and the Spelthorne Channel Outfall. There may therefore be changes in water quality in this reservoir due to changes to quality of abstracted water as a result of new connections to other water bodies the channels will intersect. The Runnymede and Spelthorne Channels will create new transport pathways between the River Thames and sources of potentially contaminated sediment and potentially contaminated water bodies, including through disturbance to intersected lake sediments, through excavated land for the channel creation, and through bed lowering downstream of Desborough Cut. This water body is currently failing for Chemical Status, therefore 'any deterioration' in quality elements in the lowest class would constitute deterioration as defined by the WFD, as per the CJEU Bund Case ruling. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorphological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
Portlane Brook	GB10 60390 23451	River	Thames, London	HMWB	Drinking Water Safeguard Zone (Surface Water) (SWSGZ4016)	N/A	Moderate Ecological Status Hydromorphological Supporting Elements: Supports good Chemical Status – Fail	Phosphate – Point source (Trade/Industry discharge), Diffuse source (urban and transport – urbanisation) Invertebrates – Natural (drought), Diffuse source (urban and transport – urbanisation)	Good Ecological Status by 2027 Good Chemical Status by 2063	Downstream – Thames (Egham to Teddington)	Not mentioned in Strategy WFD Assessment.	Not included.	Out	There will be no modification or change to connectivity of the river to existing water bodies or the proposed channels. No change in hydrology or water quality is anticipated from any changes in the flood regime as a result of the project as the Portlane Brook flows into River Thames downstream of Sunbury Weir. A change in flood risk as a result of the Project is expected, however this effect will be temporary and infrequent (only during a 1 in 100-year flood event) and therefore the potential effects on hydrological, ecological and chemical elements are considered to be negligible. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.
Longford River	GB80 61001 09	Surface water transfer	Thames, Thames AWB	Artificial	None	N/A	Moderate Ecological Status Chemical Status - Fail	Mitigation Measures Assessment – Physical modification (urban and transport)	Good Ecological Status by 2027 Good Chemical Status by 2063	Downstream – Thames Egham to Teddington	Not mentioned in Strategy WFD Assessment.	Not included.	Out	There will be no modification or change to connectivity of the river to existing water bodies or the proposed channels. No change in hydrology or water quality is anticipated from any changes in the flood regime as a result of the project as the Longford River flows into River Thames downstream of Sunbury Weir. A change in flood risk as a result of the Project is expected, however this effect will be temporary and infrequent (only during a 1 in 100-year flood event) and therefore the potential effects on hydrology, ecological and chemical elements are considered to be negligible. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.
Rythe	GB10 60390 17650	River	Thames, Mole	HMWB	None	Bad Ecological Status Chemical Status – Does not require assessment	Poor Ecological Status Hydromorphological Supporting Elements: Supports good Chemical Status - Fail	Mitigation Measures Assessment - Physical modification (Local and Central Government, urban and transport) Invertebrates - Point sources (Water Industry – incidents, Domestic General Public – misconnections, Water Industry – leaking utility sewers), Physical modification	Good Ecological Status by 2027 Good Chemical Status by 2063	Downstream – Thames (Egham to Teddington)	Not mentioned in Strategy WFD Assessment.	Not included.	Out	There will be no modification or change to connectivity of the river to existing water bodies or the proposed channels. No change in hydrology or water quality is anticipated from any changes in the flood regime as a result of the project as the Rythe flows into River Thames downstream of Molesey Weir. A change in flood risk as a result of the Project is expected, however this effect will be temporary and infrequent (only during a 1 in 100-year flood event) and therefore the potential effects on hydrology, ecological and chemical elements are considered to be negligible. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorphological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
								(urban and transport – urbanisation) Phosphate - Point sources (Water Industry – incidents, Domestic General Public – misconnections, Water Industry – leaking utility sewers) Fish - Physical modification (barriers – ecological discontinuity, Local and Central Government – flood protection - structures), Diffuse source (urban and transport – urbanisation) Macrophytes and Phytobenthos Combined - Point sources (Water Industry – incidents, Domestic General Public – misconnections, Water Industry – leaking utility sewers)						
Hogsmill	GB10 60390 17440	River	Thames, London	HMWB	Nitrates Directive (Hogsmill NVZ S450)	Moderate Ecological Status Good Chemical Status	Moderate Ecological Status Supporting Elements: Supports good Chemical Status - Fail	Fish – Unknown Phosphate – Point source (Domestic General Public – misconnections, sewage discharge – continuous, sewage discharge – intermittent) Invertebrates – Physical modification (urban and transport – urbanisation, flood protection structures), Point sources (sewage discharge –	Moderate Ecological Status by 2015 (Disproportionately expensive: Disproportionate burdens; Good status for Fish element prevented by A/HMWB designated use: Action to get biological element to good would have significant adverse impact on use. Technically infeasible: No known technical solution is available	Downstream – Thames (Egham to Teddington)	Not mentioned in Strategy WFD Assessment.	Not included.	Out	There will be no modification or change to connectivity of the river to existing water bodies or the proposed channels. No change in hydrology or water quality is anticipated from any changes in the flood regime as a result of the project as the Hogsmill flows into River Thames downstream of Molesey Weir. A change in flood risk as a result of the Project is expected, however this effect will be temporary and infrequent (only during a 1 in 100-year flood event) and therefore the potential effects on hydrology, ecological and chemical elements are considered to be negligible. It is not anticipated that the project will result in changes or measurable direct / indirect impacts to the current ecological or chemical status of this water body. In addition, it is also not anticipated to affect its ability to achieve future RBMP objectives.

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorphological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
								continuous, Domestic General Public – misconnections, sewage discharge – intermittent, Water Industry – leaking utility sewers) Dissolved oxygen – High to Good deterioration, no action required (RFD only) Ammonia (Phys-chem) - High to Good deterioration, no action required (RFD only) Mitigation Measures Assessment – Physical modification (Local and Central Government – other) Cypermethrin (Priority hazardous) - Unknown	for Phosphate element). Good Chemical Status by 2063					
Chobham Bagshot Beds	GB40602G601400	Groundwater	Thames, Thames GW	N/A	Drinking Water Protected Area (Chobham Bagshot Beds – UKGB40602G601400), Nitrates Directive (Emm Brook Nitrate Vulnerable Zone (NVZ) S460)	Good Overall Status Good Quantitative Status Good Chemical Status	Poor Overall Status Good Quantitative Status Poor Chemical Status	Trend Assessment – Diffuse source (Agriculture and rural land management – poor nutrient management)	Good Overall Status by 2015 Good Quantitative Status by 2015 Good Chemical Status by 2015	N/A	Not mentioned in Strategy WFD Assessment however SEA States3: 'Potential for poorer River Thames flood water to infiltrate to ground waters which could also lead to fluctuations in ground water levels. Potential mobilisation of contaminants in and around landfill sites. Potential impacts on groundwater fed sources at Heron Lake, Abbeymeads	Screened In - Construction of the channel has the potential to alter the hydraulic connectivity between surface waters and groundwater levels and also to cause changes in water quality. Potential mobilisation of contaminants in and around landfill sites risks affecting groundwater.	In	Construction and operation of the channels (during low flow, and flood conditions) has the potential to alter the hydraulic connectivity between surface waters and groundwater levels. There may also be alteration to groundwater flows from construction activities and operation of the RTS. There is also potential to mobilise contaminants in and around landfill sites and other contaminated land within the project extent, and cause changes to groundwater quality. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.

Water body Name (Draft RBMP WFD Cycle 3)	Water body ID	Water body type	RBD / RBMP and Environment Agency Management Catchment	Hydromorphological Designation	Protected/ Designated sites (e.g. SPA)	Cycle 1 2009 RBMP Status	Current Cycle 2 2019 RBMP Status	Cycle 2 reasons for not achieving good (RNAG) and reasons for deterioration (RFD)	Draft Cycle 3 2021 RBMP Objectives	Upstream / downstream water bodies	Lower River Thames Strategy WFD Assessment outcomes (2010) ¹⁶	Outline Design WFD Assessment Screening outcomes and reasoning (2018) ¹⁷	Screened In / Out of Preliminary WFD Assessment	Screening assessment reasoning (based on proposed works and hydraulic connectivity)
Lower Thames Gravels	GB40603G000300	Groundwater	Thames, Thames GW	N/A	Drinking Water Protected Area (Lower Thames Gravels – UKGB40603G000300), Nitrates Directive (Roundmoor Ditch and Boveney Ditch NVZ S460)	Good Overall Status Good Quantitative Status Good Chemical Status	Poor Overall Status Poor Quantitative Status Poor Chemical Status	Trend Assessment – Point source (sewage discharge – continuous)	Good Overall Status by 2015 Good Quantitative Status by 2015 Good Chemical Status by 2015	N/A	(Chertsey) and Walton." Not mentioned in Strategy WFD Assessment however SEA States3: 'Potential for poorer River Thames flood water to infiltrate to ground waters which could also lead to fluctuations in ground water levels. Potential mobilisation of contaminants in and around landfill sites. Potential impacts on groundwater fed sources at Heron Lake, Abbeymeads (Chertsey) and Walton."	Screened In - Construction of the channel has the potential to alter the hydraulic connectivity between surface waters and groundwater levels and also to cause changes in water quality. Potential mobilisation of contaminants in and around landfill sites risks affecting groundwater.	In	Construction and operation of the channels (during low flow and flood conditions) has the potential to alter the hydraulic connectivity between surface waters and groundwater levels. There may also be alteration to groundwater flows from construction activities and operation of the RTS. There is also potential to mobilise contaminants in and around landfill sites and other contaminated land within the project extent, and cause changes to groundwater quality. It is anticipated that the project could impact the current status or future WFD objectives of this water body. This water body is therefore screened in for further assessment.

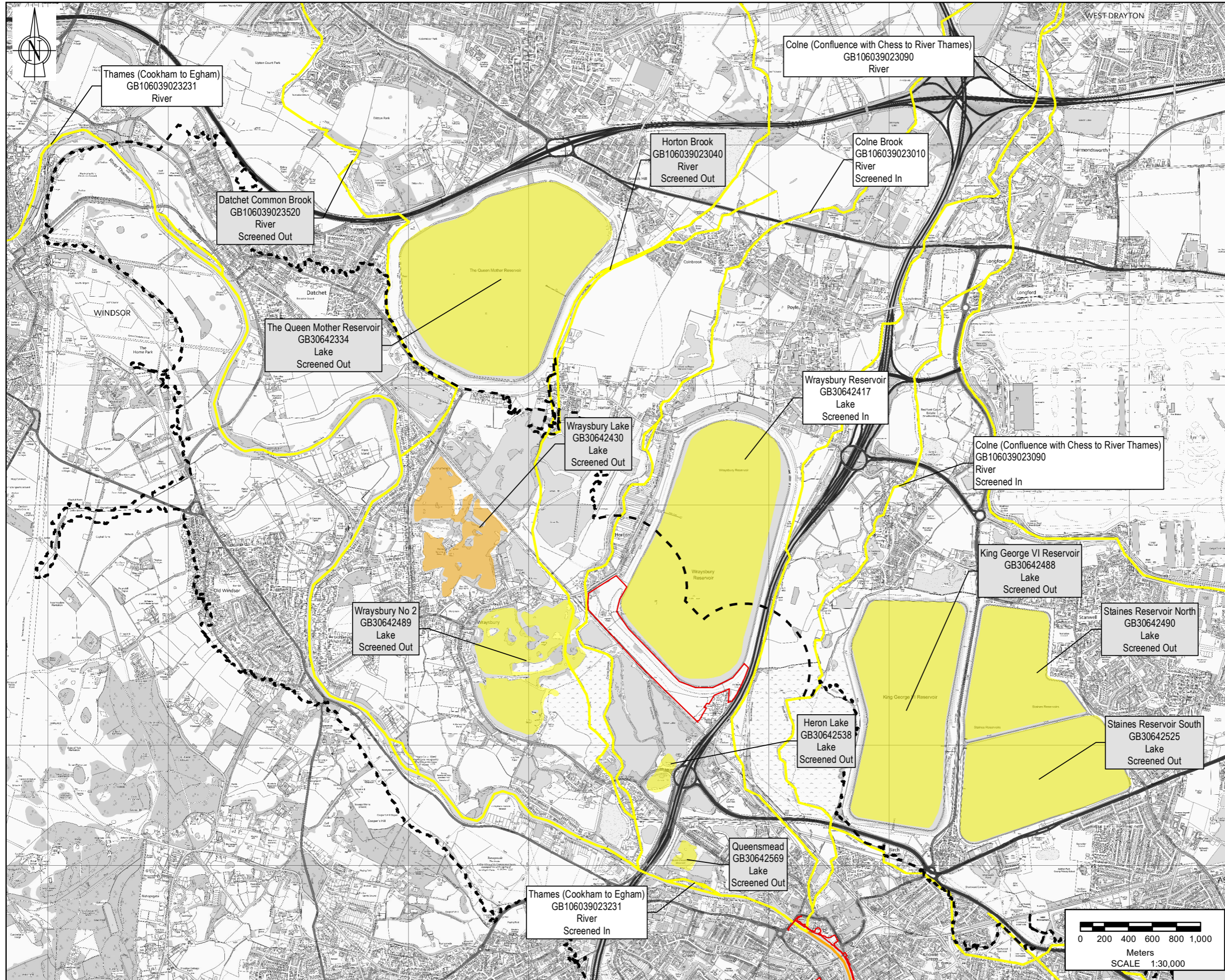
References

Please refer to 'References' section at the end of the River Thames Scheme Environmental Impact Assessment Scoping Report for full details.

Appendix A: WFD Screening – Water Bodies in the Zol

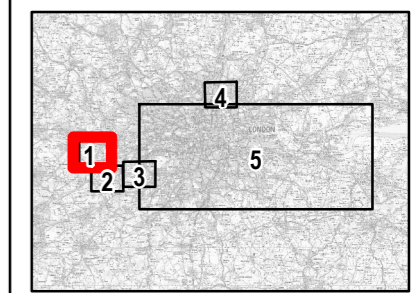
Figure 1: Surface water bodies within the Zone of Influence. Figure ref:
ENVIMSE500260-GBV-ZZ-3ZZ-DR-EN-10016

Figure 2: Groundwater bodies within the Zone of Influence. Figure ref:
ENVIMSE500260-GBV-ZZ-3ZZ-DR-EN-10017



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- WATERCOURSE/ WATER BODY STATUS**
- WATERCOURSE/WATER BODY OVERALL STATUS
- MODERATE
 - POOR



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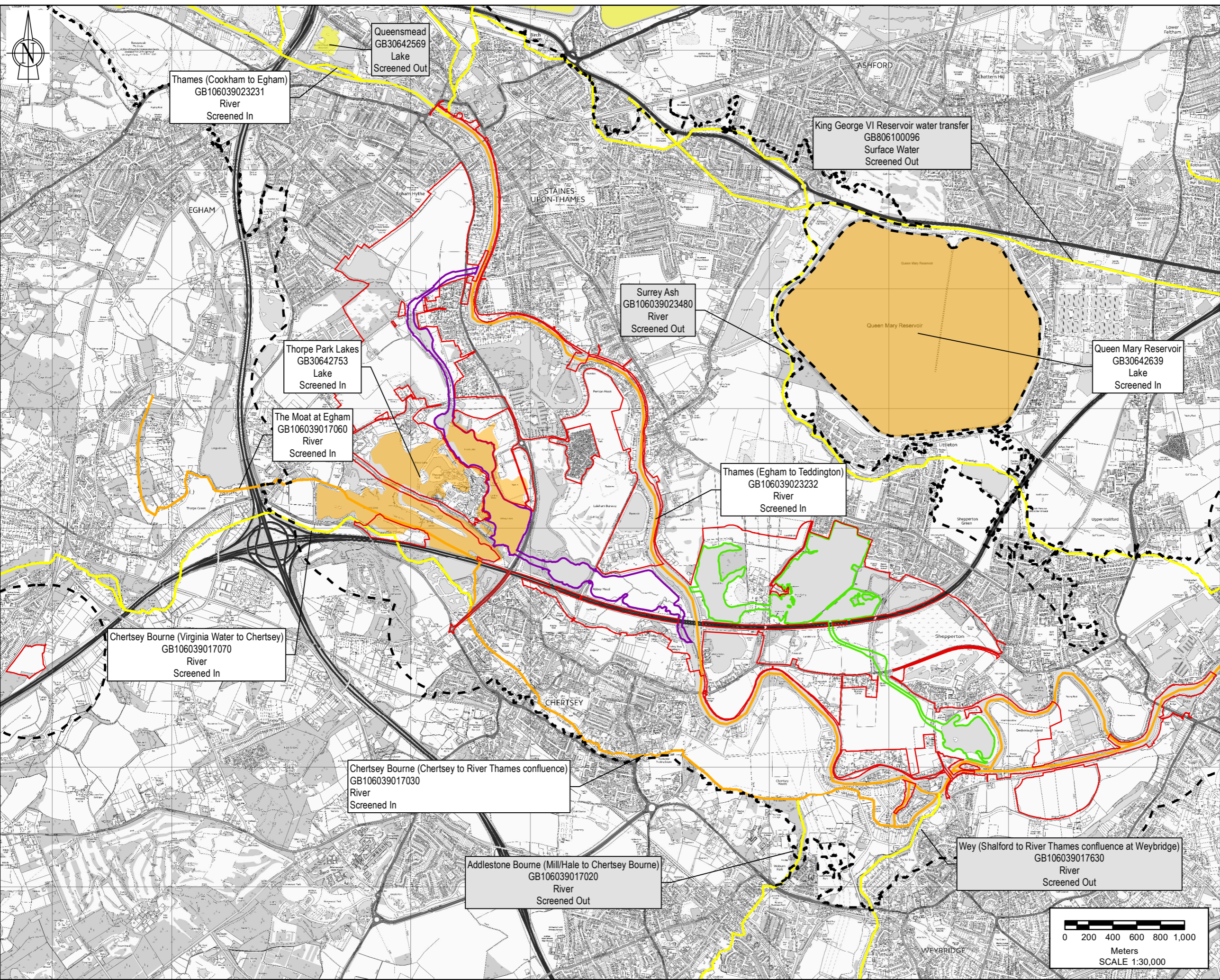


Project: THE RIVER THAMES SCHEME

Drawing title: WFD COMPLIANCE ASSESSMENT: SURFACE WATER BODIES WITHIN THE ZONE OF INFLUENCE
 PAGE 1 OF 5

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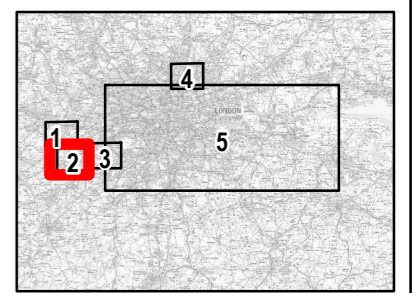
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 - RUNNYMEDE CHANNEL
 - SPELTHORNE CHANNEL
- WATERCOURSE/ WATER BODY STATUS**
- WATERCOURSE/WATER BODY OVERALL STATUS**
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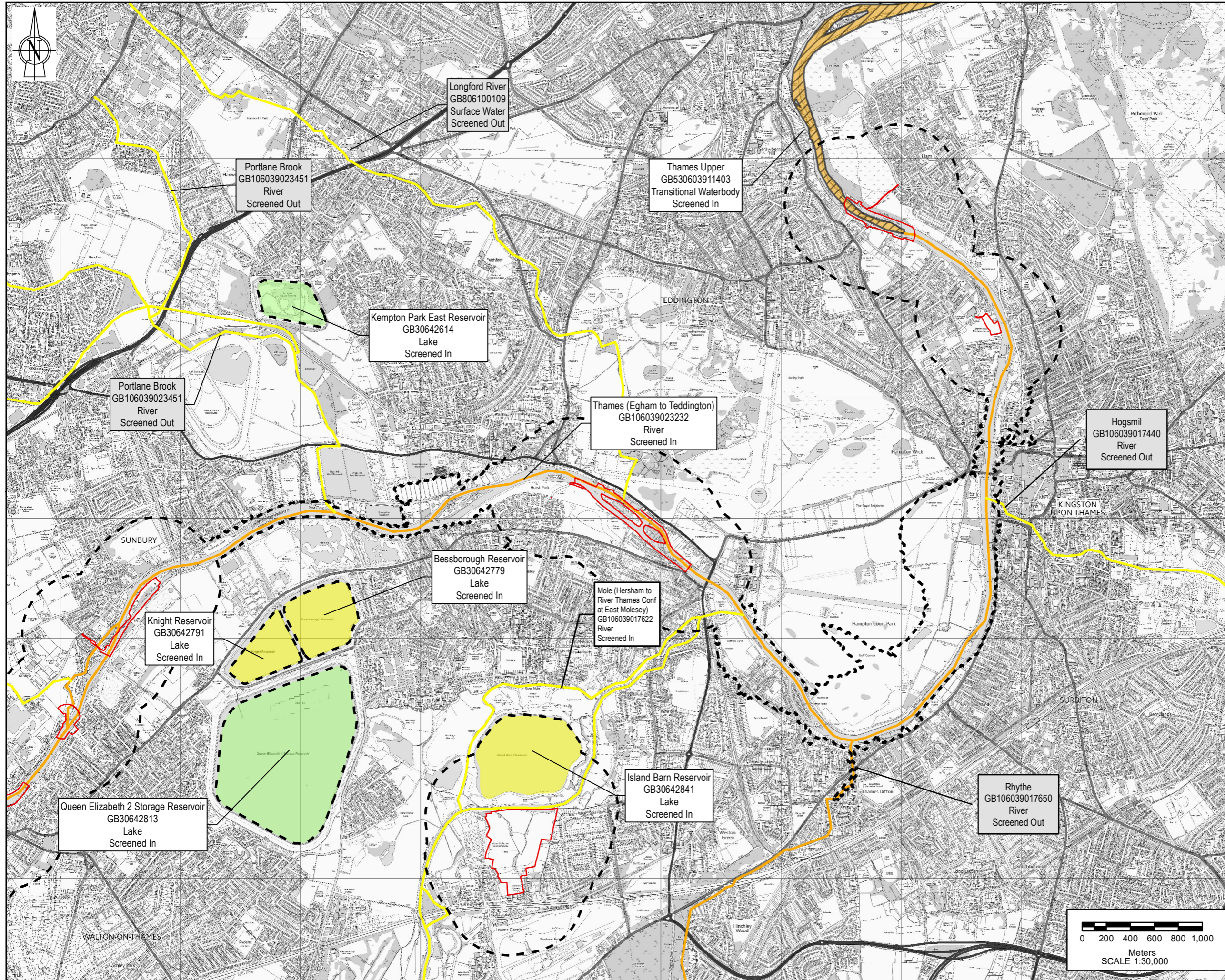


Project: THE RIVER THAMES SCHEME

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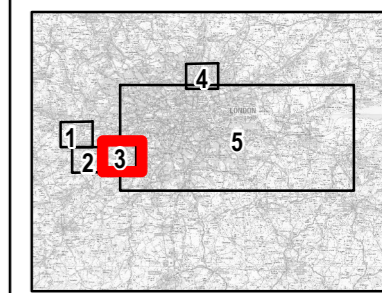
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- WATERCOURSE/WATER BODY OVERALL STATUS
- GOOD
 - MODERATE
- TRANSITIONAL WATER BODY
- TRANSITIONAL WATER BODY



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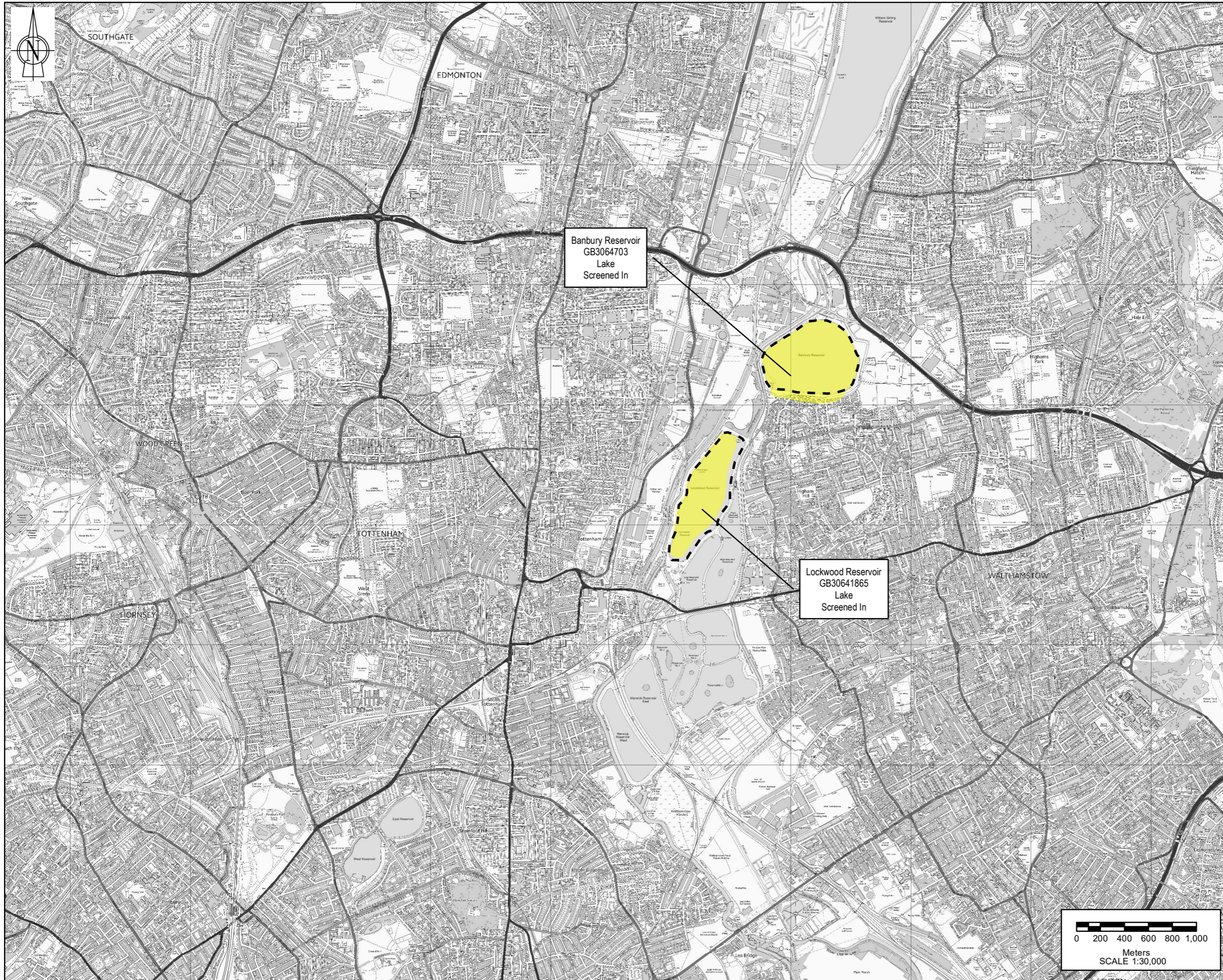
Project: THE RIVER THAMES SCHEME

Drawing title: WFD COMPLIANCE ASSESSMENT: SURFACE WATER BODIES WITHIN THE ZONE OF INFLUENCE PAGE 3 OF 5

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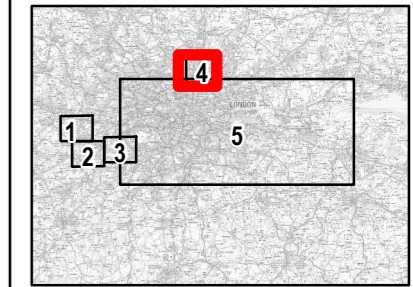
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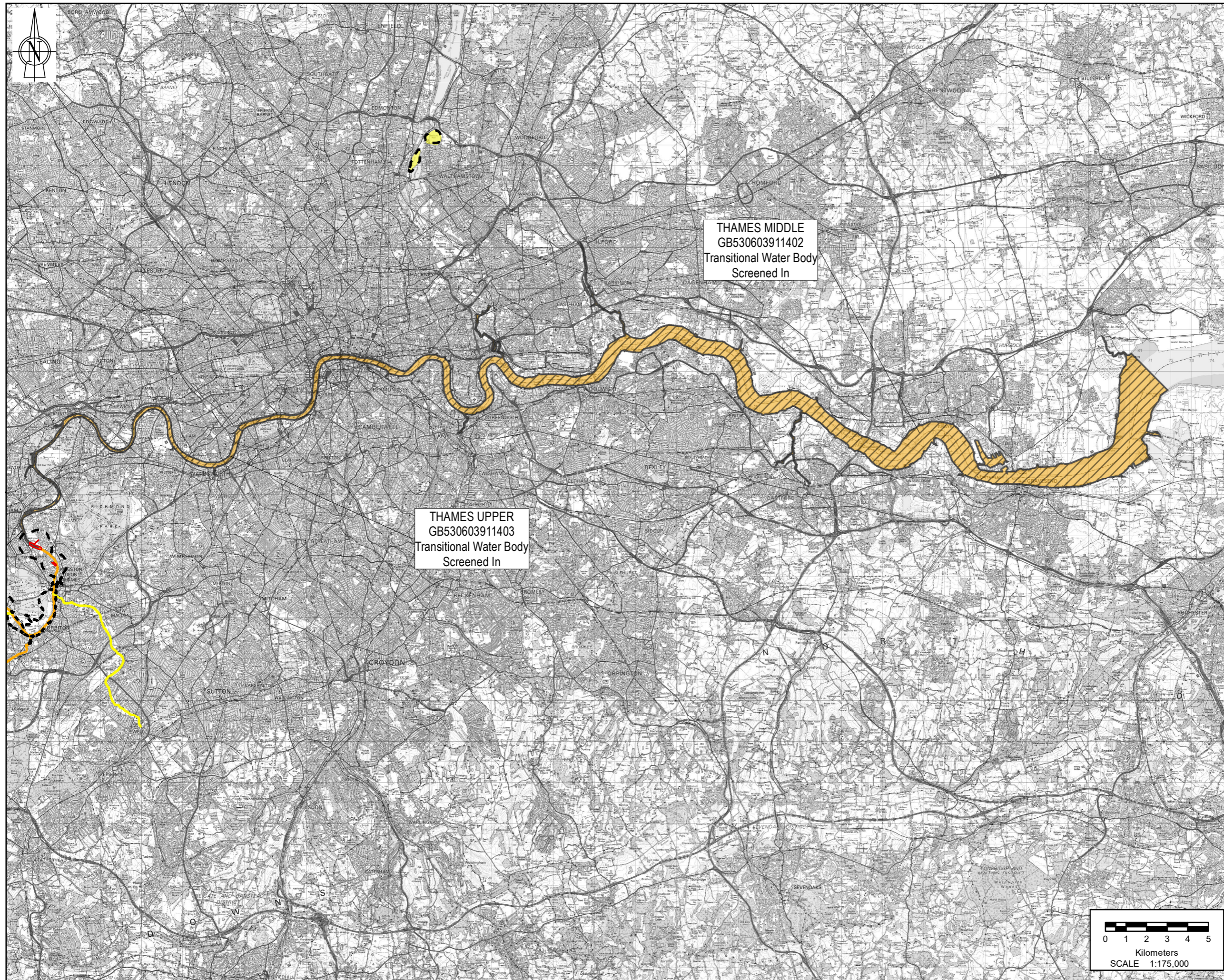


Project: THE RIVER THAMES SCHEME

Drawing title: WFD COMPLIANCE ASSESSMENT: SURFACE WATER BODIES WITHIN THE ZONE OF INFLUENCE PAGE 4 OF 5

Drawing scale: 1:30,000 Sheet size: A3
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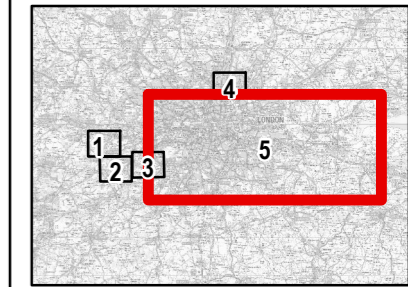


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- MODERATE
- TRANSITIONAL WATER
- ▨ TRANSITIONAL WATER



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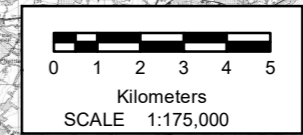
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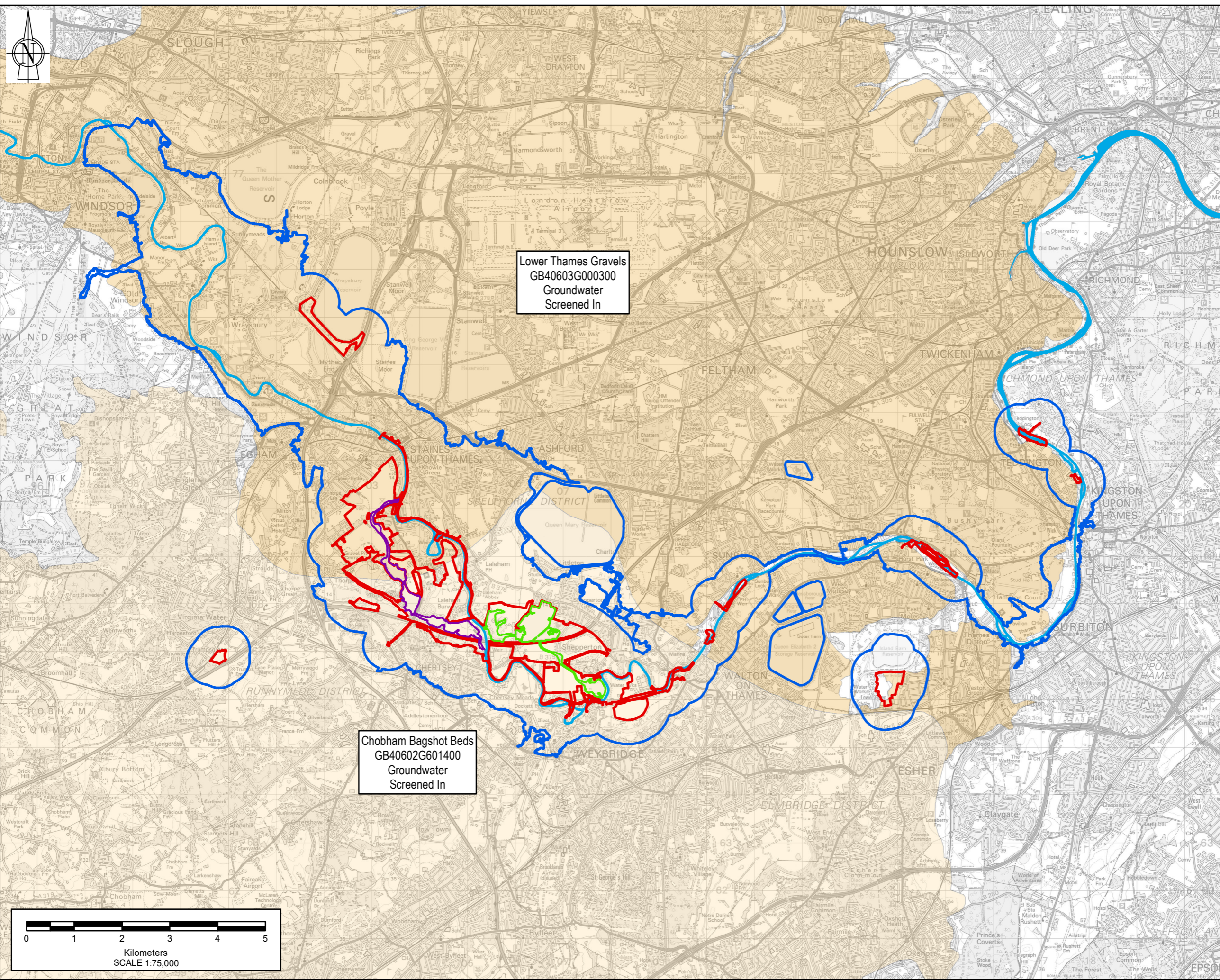
THE RIVER THAMES SCHEME

Drawing title:
**WFD COMPLIANCE ASSESSMENT:
 SURFACE WATER BODIES
 WITHIN THE ZONE OF INFLUENCE**
 PAGE 5 OF 5

Drawing scale: 1:175,000 Sheet size: A3
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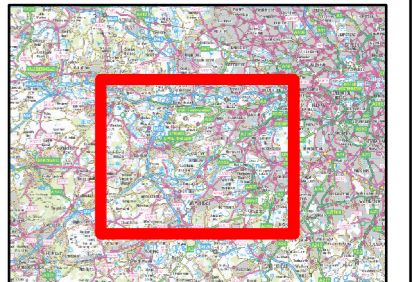


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- ▬ PROJECT BOUNDARY FOR EIA SCOPING
 - ▬ RUNNYMEDE CHANNEL
 - ▬ SPELTHORNE CHANNEL
 - ▬ GROUNDWATER STUDY AREA FOR EIA SCOPING

- GROUNDWATER BODY STATUS**
- GOOD
 - MODERATE
 - POOR



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS OR RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, THE FOLLOWING SIGNIFICANT RESIDUAL RISKS SHOULD BE NOTED. FURTHER DETAILS ARE INCLUDED IN THE CDM DESIGN RISK MANAGEMENT REGISTER

CONSTRUCTION :	NOT APPLICABLE
MAINTENANCE, CLEANING AND OPERATION :	NOT APPLICABLE
DECOMMISSIONING OR DEMOLITION :	NOT APPLICABLE

Rev	Drawn	Chkd	Rvwd	Apprvd	Date	Description
P04	AA	CP	LS	EB	01/09/2022	FOR INFORMATION
P03	AA	NH	LS	EB	01/08/2022	FOR INFORMATION
P02	TW	RA	JME	EB	24/02/2022	FOR INFORMATION
P01	TW	RA	JME	EB	31/01/2022	FOR INFORMATION

Designed by: AA Date: SEPTEMBER 2022

Client: **River Thames Scheme**

Client Drawing No: ENVIMSE000260-GBV-ZZ-3ZZ-DR-EN-10017 Revision: P04

gb A GALLIFORD TRY & BINNIES JOINT VENTURE

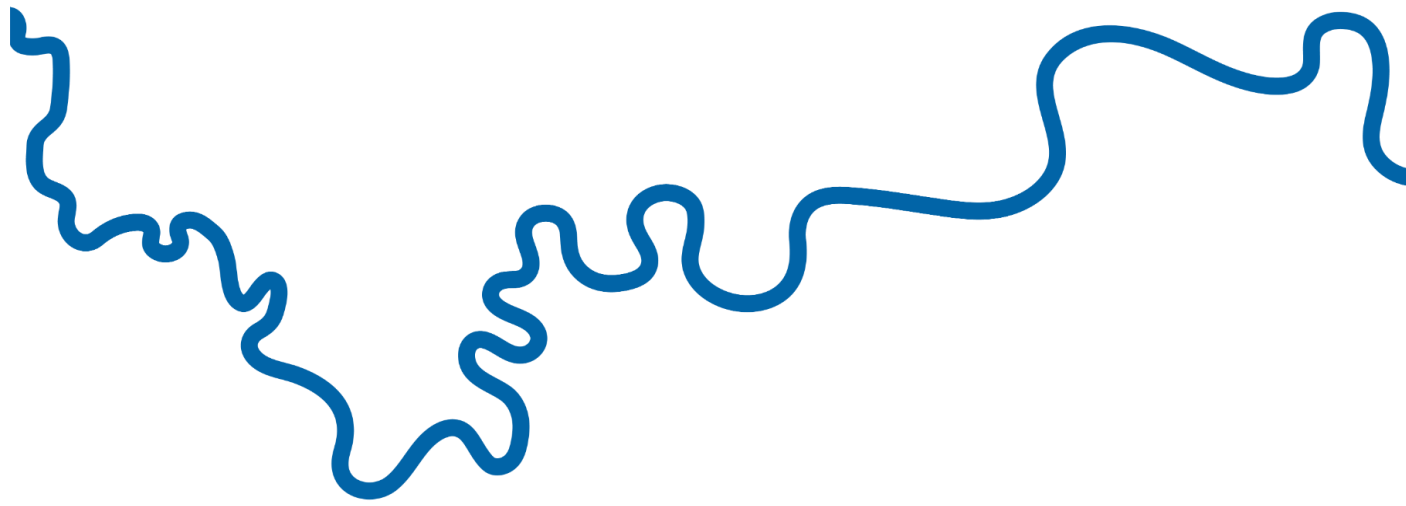
Registered office: Cowley Business Park, Cowley, Uxbridge, Middlesex, UB8 2AL, UK
 Registered in England and Wales: Company no. 08584398

THE RIVER THAMES SCHEME

Drawing title:
**WFD COMPLIANCE ASSESSMENT:
 GROUNDWATER BODIES
 WITHIN THE ZONE OF INFLUENCE**

Drawing scale: 1:75,000 Sheet size: A3
 Drawing no: ENVIMSE000260-GBV-ZZ-3ZZ-DR-EN-10017 Revision: P04

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The River Thames Scheme, delivered in a partnership led by the Environment Agency and Surrey County Council, will reduce flood risk for residents and businesses and improve the surrounding area.