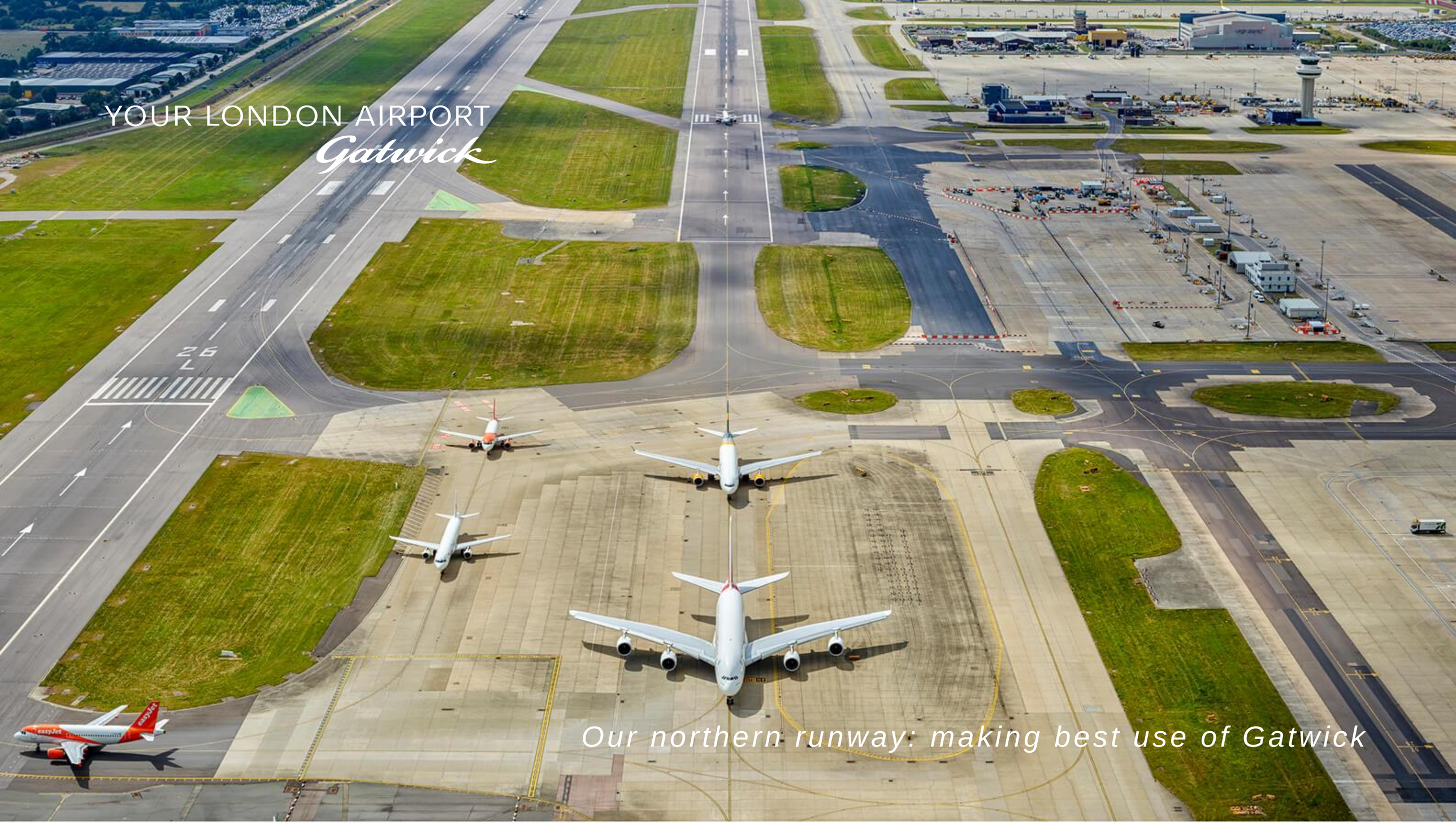

Preliminary Environmental Information Report
Appendix 11.9.2: Water Environment Regulations Compliance Assessment

September 2021

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1 Introduction

1.1 General

1.1.1 This document forms Appendix 11.9.2 of the Preliminary Environmental Information Report (PEIR) prepared on behalf of Gatwick Airport Limited (GAL). The PEIR presents the preliminary findings of the Environmental Impact Assessment (EIA) process for the proposal to make best use of Gatwick Airport's existing runways (referred to within this report as 'the Project'). The Project proposes alterations to the existing northern runway which, together with the lifting of the current restrictions on its use, would enable dual runway operations. The Project includes the development of a range of infrastructure and facilities which, with the alterations to the northern runway, would enable the airport passenger and aircraft operations to increase. Further details regarding the components of the Project can be found in the Chapter 5: Project Description.

1.1.2 This document provides the Preliminary Water Environment (Water Framework Directive (WFD)) Regulations 2017 (WER) compliance Assessment for the Project.

1.2 Purpose of this Report

1.2.1 Compliance with the provisions of the WER legislation needs to be taken into account in the planning of all new activities in the water environment. The Environment Agency (EA), as competent authority in England must exercise its relevant functions so as to secure compliance with the Regulations (including determining any authorisation for an Environmental Permit or a licence to abstract or impound water), and so as best to secure the achievement of the following environmental objectives:

- measures should be put in place to prevent deterioration of the surface water status or groundwater status of a body of water (subject to the application of Regulations 18 and 19), and
- measures should otherwise support the achievement of the environmental objectives set for a body of water (subject to the application of Regulations 16 to 19).

1.2.2 Regulations 16 to 19 set out the conditions relevant to extended deadlines for environmental objectives (Reg16), setting less stringent environmental objectives (Reg17), natural causes of change (Reg18) and modifications to physical characteristics of water bodies (Reg19).

1.3 Background

1.3.1 All water bodies should meet good ecological status (GES) (or good ecological potential (GEP) if an artificial or heavily modified water body) by a set timeframe. Overall ecological status (or potential) is made up of a number of biological, hydromorphological and chemical quality characteristics called elements. The overall status is determined by the lowest element status.

1.3.2 Any activity which has the potential to have an impact on ecology will need consideration in terms of whether it could cause deterioration in the ecological status or potential of a water body. It is, therefore, necessary to consider the possible changes associated with the proposed options for the Scheme.

1.3.3 Where there are sites protected under transposed and adopted regulations, WER aims for compliance with any relevant standards or objectives for these sites. including the Urban Waste Water Treatment (England and Wales) Regulations 1994, the Nitrate Pollution Prevention Regulations 2017 or the Conservation of Habitats and Species Regulations 2019

1.3.4 For those water bodies that are not already in 'good' condition, specific mitigation measures have been set for each River Basin District (RBD) to achieve the environmental objectives of the WER. These measures are to mitigate impacts that have been or are being caused by human activity and to enhance and restore the quality of the existing environment. These mitigation measures will be delivered through the River Basin Management Plan (RBMP) which also identifies the different organisations responsible for their delivery.

1.4 Project Description

Key Components of the Project

1.4.1 The Project proposes alterations to the existing northern runway which, along with lifting the current restrictions on its use, would enable dual runway operations. Together with the alterations to the northern runway, the Project would include the development of a range of infrastructure and facilities to allow increased airport passenger and aircraft operations and to allow Gatwick Airport to make best use of its existing runways.

1.4.2 The Project would include alterations to the existing northern runway and corresponding enhancements to the taxiway system and parking stands to accommodate an increase in aircraft movements.

1.4.3 The Project includes the following key components, which are described in further detail in Chapter 5: Project Description of the PEIR:

- amendments to the existing northern runway including repositioning its centreline 12 metres further north to enable dual runway operations;
- reconfiguration of taxiways;
- pier and stand alterations (including a proposed new pier);
- reconfiguration of other airfield facilities;
- extensions to the existing airport terminals (north and south);
- provision of additional hotel and office space;
- provision of reconfigured car parking, including new car parks;
- surface access (including highway) improvements;
- reconfiguration of existing utilities, including surface water, foul drainage and power; and
- landscape/ecological planting and environmental mitigation.

2 Water Environment Regulations Assessment stages

2.1.1 The following discrete stages need to be followed to complete the assessment of the proposed development for its compliance with the Regulations:

- **Data collection:** identification of relevant water bodies potentially affected by the proposed development
- **Scoping:** identifies the receptors and water body elements that are potentially at risk from the proposed development and need impact assessment
- **Impact Assessment:** considers the potential impacts of the proposed development, identifies ways to avoid or minimise impacts, and indicates if the proposed development may cause deterioration or jeopardise the water body achieving GES or GEP.

3 Scoping

3.1 Waterbody Screening

3.1.1 Table 3.1.1 is a baseline summary of the surface water, and groundwater water bodies within the study area that have been screened into the assessment based on proximity to the Project and hydrological connectivity. Data have been extracted from Environment Agency Catchment Data Explorer (2019).

3.1.2 The WER waterbodies and watercourses of the Project are shown in Figure 3.1.1.

Table 3.1.1: General Water Features and Baseline (Rivers and Groundwater Bodies)

Water Body Code	Name of water body in RBMP	Hydro-morphological Designation	Current Status/ Potential (2019)	Objective/ Status Potential-	Linked Protected Areas
Surface Water Bodies within the Study Area					
GB106039017481	Mole upstream of Horley	Heavily Modified	Moderate	Good 2015	No data to show
GB106039017500	Tilgate Brook and Gatwick Stream	Heavily Modified	Moderate	Moderate 2015	River Mole UKENRI58 Urban Wastewater Treatment Regulations
GB106039017520	Burstow Stream	River – not designated artificial or heavily modified	Bad	Poor 2027	Medway at Weir Wood NVZ S488 and Eden Brook East of Lingfield NVZ S487 Nitrates Regulations
GB106039017621	Mole (Horley to Hersham)	River – not designated artificial or heavily modified	Moderate	Moderate 2015	Wandle (Croydon to Wandsworth) and the R. Gravney NVZ S464, Hogsmill NVZ S450 and Law Brook S679 Nitrates Regulations. River Mole Urban Wastewater Treatment Regulations. Mole Gap to Reigate Escarpment Habitats Regulations
Groundwater Bodies within the Study Area					
GB40602G602400	Copthorne Tunbridge Wells Sands	N/A	Good	Good 2015	Drinking Water Protected Area
Upstream water bodies (upstream of those in the study area)					
GB106039017450	Stanford Brook	River – not designated artificial or heavily modified	Moderate	Good 2027	River Arun (u/s Pallingham) NVZ S523 Nitrates Regulations
Downstream water bodies					

Water Body Code	Name of water body in RBMP	Hydro-morphological Designation	Current Status/ Potential (2019)	Objective/ Status Potential-	Linked Protected Areas
GB106039017622	Mole Hersham to River Thames confluence at East Molesey	River – heavily modified	Moderate	Moderate 2015	No data to show

3.1.3 Table 3.1.2 includes a summary of relevant biological and hydromorphological elements for the water bodies within the study area. This information is carried forward in the assessment tables presented in Section 2 (Step 2).

Table 3.1.2: Biological and Supporting Elements for Water Bodies

Element	Current Status 2019	Overall status objective	Reasons for not achieving good status and reasons for deterioration
Surface Water Bodies			
Mole Upstream of Horley (includes Man's Brook, Withy Brook and Crawter's Brook)			
Ecological	Moderate	Good (2015)	No data available on Catchment Data Explorer
Biological quality element	Good	Good (2015)	
Hydromorphological Supporting Elements	Supports Good	Supports Good (2015)	
Physico-chemical quality elements	Moderate	Not assessed (2015)	
Specific pollutants	High	Not assessed (2015)	
Chemical	Fail	Good (2015)	
Tilgate Brook and Gatwick Stream at Crawley (includes Gatwick Stream)			
Ecological	Moderate	Moderate (2015)	▪ Physical modification, Flood protection - structures, Local and Central Government, Fish ▪ Point source, Sewage discharge (continuous), Water Industry, Fish ▪ Point source, Sewage discharge (continuous), Water Industry, Invertebrates ▪ Diffuse source, Urbanisation - urban development, Urban and transport, Invertebrates ▪ Diffuse source, Urbanisation - urban development, Urban and transport, Phosphate ▪ Diffuse source, Transport Drainage, Urban and transport, Invertebrates ▪ Diffuse source, Transport Drainage, Urban and transport, Fish ▪ Physical modification, Other (not in list, must add details in comments), Recreation, Mitigation Measures Assessment ▪ Physical modification, Other (not in list, must add details in comments), Urban and transport, Mitigation Measures Assessment ▪ Physical modification, Other (not in list, must add details in comments), Local and Central Government, Mitigation Measures Assessment ▪ Invasive non-native species, North American signal crayfish, No sector responsible, Fish ▪ Physical modification, Barriers - ecological discontinuity, Urban and transport, Fish ▪ Physical modification, Urbanisation - transport, Urban and transport, Fish ▪ Point source, Sewage discharge (continuous), Water Industry, Phosphate ▪ Physical modification, Urbanisation - transport, Urban and transport, Invertebrates ▪ Invasive non-native species, North American signal crayfish, No sector responsible, Invertebrates
Biological quality element	Bad	Moderate (2027)	
Hydromorphological Supporting Elements	Supports Good	Supports Good (2015)	
Physico-chemical quality elements	Good	Moderate (2015)	
Specific pollutants	High	High (2015)	
Chemical	Fail	Good (2015)	

Element	Current Status 2019	Overall status objective	Reasons for not achieving good status and reasons for deterioration
Burstow Stream (includes Burstow Stream and Burstow Stream Tributary)			
Ecological	Bad	Poor (2027)	▪ Physical modification, Barriers - ecological discontinuity, Domestic General Public, Fish ▪ Physical modification, Land drainage - operational management, Agriculture and rural land management, Fish ▪ Physical modification, Barriers - ecological discontinuity, Urban and transport, Fish ▪ Flow, Low Flow (not drought), No sector responsible, Invertebrates ▪ Physical modification, Urbanisation - urban development, Urban and transport, Fish ▪ Diffuse source, Riparian/in-river activities (inc. bankside erosion), Agriculture and rural land management, Invertebrates ▪ Point source, Sewage discharge (continuous), Water Industry, Fish ▪ Flow, Low Flow (not drought), No sector responsible, Fish ▪ Point source, Sewage discharge (continuous), Water Industry, Invertebrates ▪ Physical modification, Land drainage - operational management, Agriculture and rural land management, Invertebrates ▪ Physical modification, Barriers - ecological discontinuity, Other, Fish ▪ Physical modification, Land drainage - operational management, Agriculture and rural land management, Fish ▪ Physical modification, Reservoir / Impoundment - non flow related, Other, Invertebrates ▪ Flow, Low Flow (not drought), No sector responsible, Phosphate ▪ Point source, Sewage discharge (continuous), Water Industry, Phosphate ▪ Point source, Sewage discharge (intermittent), Water Industry, Phosphate ▪ Point source, Sewage discharge (intermittent), Water Industry, Macrophytes and Phytobenthos Combined ▪ Flow, Low Flow (not drought), No sector responsible, Macrophytes and Phytobenthos Combined ▪ Point source, Sewage discharge (continuous), Water Industry, Macrophytes and Phytobenthos Combined ▪ Invasive non-native species, North American signal crayfish, No sector responsible, Invertebrates
Biological quality element	Bad	Poor (2027)	
Hydromorphological Supporting Elements	Supports Good	Supports Good (2015)	
Physico-chemical quality elements	Moderate	Moderate (2015)	
Specific pollutants	High	Not assessed (2015)	
Chemical	Fail	Good (2015)	
Mole (Horley to Hersham) (includes River Mole and Withy Brook)			
Ecological	Moderate	Moderate (2015)	▪ Diffuse source, Poor nutrient management, Agriculture and rural land management, Phosphate ▪ Point source, Sewage discharge (continuous), Water Industry, Phosphate ▪ Point source, Sewage discharge (intermittent), Water Industry, Macrophytes and Phytobenthos Combined ▪ Diffuse source, Poor nutrient management, Agriculture and rural land management, Macrophytes and Phytobenthos Combined ▪ Point source, Sewage discharge (intermittent), Water Industry, Phosphate ▪ Point source, Sewage discharge (continuous), Water Industry, Invertebrates ▪ Point source, Sewage discharge (intermittent), Water Industry, Invertebrates ▪ Point source, Sewage discharge (continuous), Water Industry, Macrophytes and Phytobenthos Combined
Biological quality element	Moderate	Moderate (2015)	
Hydromorphological Supporting Elements	Supports Good	Supports Good (2015)	
Physico-chemical quality elements	Moderate	Moderate (2015)	
Specific pollutants	High	High (2015)	
Chemical	Fail	Good (2015)	

Element	Current Status 2019	Overall status objective	Reasons for not achieving good status and reasons for deterioration
			▪ Diffuse source, Poor Livestock Management, Agriculture and rural land management, Macrophytes and Phytobenthos Combined ▪ Diffuse source, Poor soil management, Agriculture and rural land management, Macrophytes and Phytobenthos Combined ▪ Point source, Private Sewage Treatment, Domestic General Public, Macrophytes and Phytobenthos Combined ▪ Diffuse source, Poor soil management, Agriculture and rural land management, Phosphate ▪ Diffuse source, Poor Livestock Management, Agriculture and rural land management, Phosphate ▪ Invasive non-native species, North American signal crayfish, No sector responsible, Invertebrates ▪ Point source, Private Sewage Treatment, Domestic General Public, Phosphate
Groundwater Bodies within the Study Area			
Copthorne Tunbridge Wells Sands			
Quantitative	Good	Good (2015)	N/A
Quantitative – saline intrusion	Good	Good (2015)	N/A
Quantitive water balance	Good	Good (2015)	N/A
Quantitative – GWDTE	Good	Good (2015)	N/A
Quantitative – dependent surface water body	Good	Good (2015)	N/A
Chemical	Good	Good (2015)	N/A
Chemical– saline intrusion	Good	Good (2015)	N/A
Chemical – water balance	Good	Good (2015)	N/A
Chemical – GWDTE	Good	Good (2015)	N/A
Chemical– dependent surface water body	Good	Good (2015)	N/A

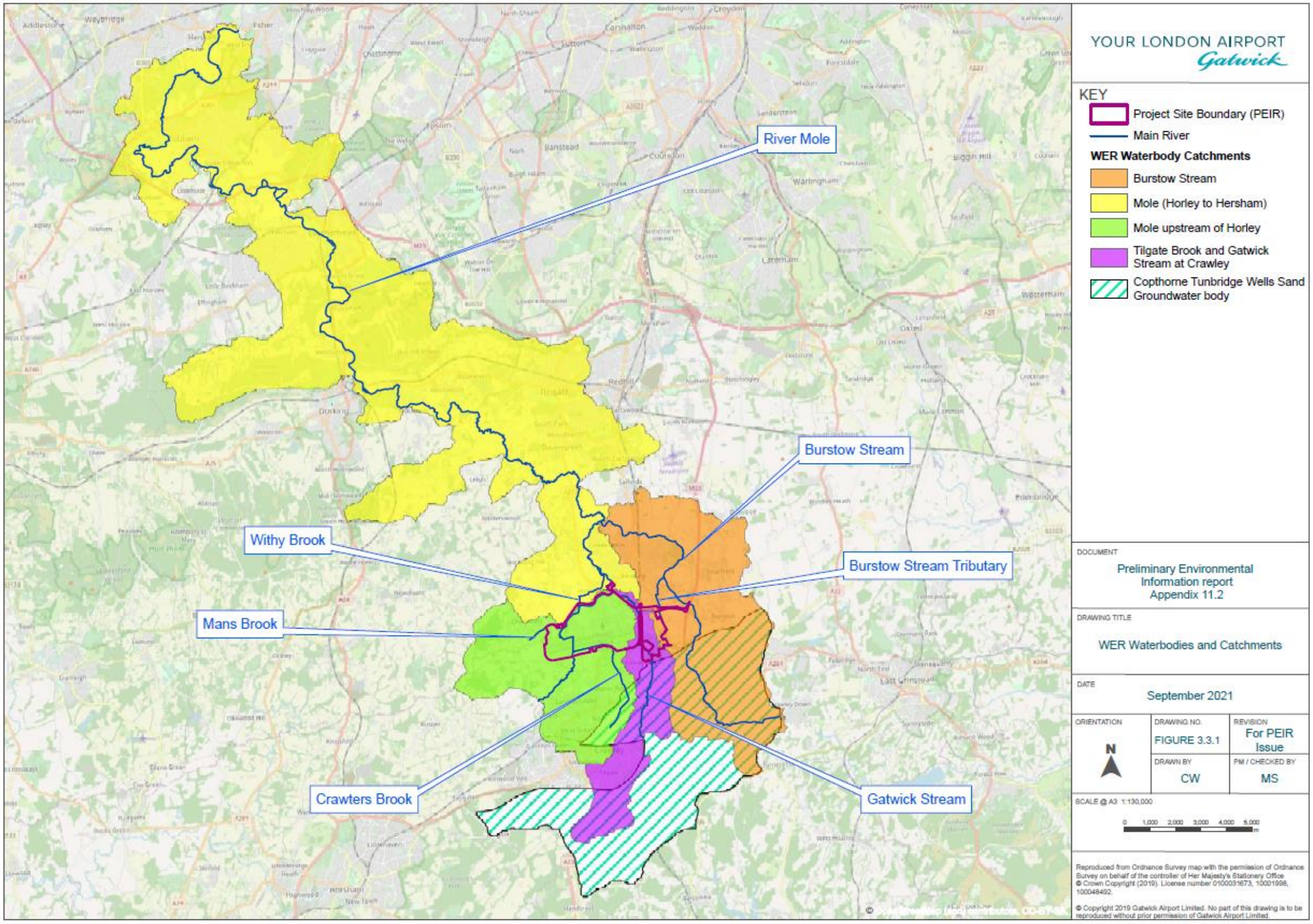

Figure 3.1.1: WER Waterbodies

3.2 Screening of Project Components

3.2.1 The elements of the Project are detailed in Section 5.2.3 of the Project Description (PEIR Chapter 5).

3.2.2 The following scheme components would need to be assessed:

- Increase in impermeable area
- Outfalls
- Earthworks
- Culverting
- Works within the floodplain

3.3 Scoping of Water Body Elements

3.3.1 Table 3.3.1 summarises the quality elements scoped into further assessment for surface water bodies, due to the possibility of the Project to impact on them. Table 3.3.2 summarises the quality elements scoped into further assessment for groundwater bodies, due to the possibility of the Project to impact on them.

Table 3.3.1: Surface water body elements for further consideration

Element	Scoped in or out
Fish	In
Benthic invertebrates	In
Macrophytes and phytobenthos combined	In
Thermal conditions	In
Oxygenation conditions	In
Acidification status	Out (no external environmental parameters to promote acidification)
Nutrient conditions	In
Connection to groundwater	In
Quantity and Dynamics of Flow	In
River Continuity	In
River depth and width variation	In
Structure and substrate of the river bed	In
Riparian zone	In
Chemical elements and Specific pollutants	In
Invasive Non-Native Species (INNS)	In
Protected areas	In

Table 3.3.2: Ground water body elements for further consideration

Element	Scoped in or out
Groundwater dependent terrestrial ecosystems	Out (no Groundwater dependent terrestrial ecosystems)
Saline intrusion	Out (no saline source)
Water balance	Out (no scheme interaction with water balance)
Surface water	In
Qualitative Elements	
Drinking Water Protected Area	In
Groundwater dependent terrestrial ecosystems	Out (no Groundwater dependent terrestrial ecosystems)
Saline intrusion	Out (no saline source)
Surface water	In
General quality	Out (no scheme interaction with water quality)

4 Impact Assessment

4.1 Assessment

4.1.1 The impact assessment is undertaken in Table 4.1.1 for surface water during construction and in 4.1.2 for surface water during operation and 4.1.3 for groundwater during construction and operation. The impact is for before mitigation. The table includes the possible ways to mitigate the impact to reduce the impact to negligible.

Table 4.1.1: Comparison of project against status objectives and elements for surface water bodies during construction

Key to Impact							
Negative		Negligible		Positive		No change	

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
Amendments to the existing northern runway including repositioning its centreline 12 metres further north to enable dual runway operations	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna Fish fauna	Construction impacts to water quality and therefore macrophytes, invertebrates and phytobenthos (if present in the water body). Potential increase in runoff; potential increase in suspended sediments and fines due to runway works and disturbance to substrate downstream of site, however limited potential for fine sediment to enter the River Mole (Mole upstream of Horley water body) on site as it flows under the runway. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. Code of Construction Practice (CoCP), application of relevant guidance, and Environmental Action Plan (EAP) to provide mitigation. Require survey data to account for species quantity and quality to fully account for implications to biological elements.
	Hydromorphological elements supporting the biological elements Hydrological regime Quantity and dynamics of water flow Structure of the riparian zone	Change to substrate in riparian zone – most likely to be made ground so no impact on riverine sediments. Potential contaminated ground under runway, however. Construction impacts on the hydrological regime, including quantity and dynamics of flow due to changes in substrate – discharge to gravity to River Mole only. However, there will be no significant impact at water body scale or to other water bodies outside of airport boundary and no discernible pathway to these as receptors. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation for de-icer pollutant risk.
	Chemical and physico-chemical elements supporting the biological elements: Oxygenation conditions Nutrient conditions	Water quality: Pollution is likely to be dust, increased suspended sediment concentrations from runoff and from plant machinery. Pollutants are more than likely to be intercepted via the drainage system and discharged away from the surface water bodies. If they are washed into the River Mole, impacts are likely to be temporary and localised. There is no direct entry as the river flows under the runway. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation for de-icer pollutant risk.
	Specific pollutants: Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	Potential contaminated ground under the runways which could release contaminants into the River Mole. Wash out into the River Mole could release sediment and soil, presenting a temporary but localised risk to overall water quality conditions. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation for de-icer pollutant risk.
Reconfiguration of taxiways	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna Fish fauna	Construction impacts to water quality and therefore macrophytes, invertebrates and phytobenthos (if present in the water body). Potential increase in runoff; potential increase in suspended sediments and fines due to runway works and disturbance to substrate downstream of site, however limited potential for fine sediment to enter the River Mole (Mole upstream of Horley water body) on site as it flows under the runway. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. Code of Construction Practice (CoCP), application of relevant guidance, and Environmental Action Plan (EAP) to provide mitigation. Require survey data to account for species quantity and quality to fully account for implications to biological elements.
	Hydromorphological elements supporting the biological elements	Change to substrate in riparian zone – most likely to be made ground so no impact on riverine sediments. Potential contaminated ground under runway, however.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation.

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
	Hydrological regime Quantity and dynamics of water flow Structure of the riparian zone	Construction impacts on the hydrological regime, including quantity and dynamics of flow due to changes in substrate – discharge to gravity to River Mole only. However, there will be no significant impact at water body scale or to other water bodies outside of airport boundary and no discernible pathway to these as receptors. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation for de-icer pollutant risk.
	Chemical and physico-chemical elements supporting the biological elements: Oxygenation conditions Nutrient conditions	Water quality: Pollution is likely to be dust, increased suspended sediment concentrations from runoff and from plant machinery. Pollutants are more than likely to be intercepted via the drainage system and discharged away from the surface water bodies. If they are washed into the River Mole, impacts are likely to be temporary and localised. There is no direct entry as the river flows under the runway. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation for de-icer pollutant risk.
	Specific pollutants: Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	Potential contaminated ground under the runways which could release contaminants into the River Mole. Wash out into the River Mole could release sediment and soil, presenting a temporary but localised risk to overall water quality conditions. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation for de-icer pollutant risk.
Pier and stand alterations (including a proposed new pier)	Biological elements: Invertebrates Fish	Construction impacts to water quality: Potential increase in runoff; potential increase in suspended sediments and fines due to works and disturbance to substrate, and potential for fines to enter the River Mole via drainage at high flows. Fines likely to settle in the margins and subsequently be colonised by macrophytes during lower flows and be re-suspended during higher flows. This could disturb benthic invertebrates and fish temporarily. However, distance of the works from River Mole and its situation under the runway would make this unlikely.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation. Require survey data to account for species quantity and quality to fully account for implications to biological elements. Require more information (to be done as part of ES) for corroboration of this.
	Hydromorphological elements supporting the biological elements Hydrological regime Quantity and dynamics of water flow Structure of the riparian zone	Construction impacts to the hydrological regime due to changes in substrate would be negligible as the discharge would be under gravity to the River Mole only. Overall, there would be no significant impact at water body scale or to other water bodies outside of airport boundary and no discernible pathway to these as receptors. Change to substrate in riparian zone – the substrate is most likely to be made ground but the riparian zone is already developed, so no overall change from present conditions. Potential contaminated ground on site, however which may need to be remediated. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation.
	Specific pollutants: Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	Potential contaminated ground which could release contaminants into the watercourse (River Mole) during construction. Wash out into the Mole could release sediment and soil, presenting a temporary but localised risk to overall water quality conditions. However, distance of works from the River Mole would make this unlikely.	CoCP, application of relevant guidance, and EAP to provide mitigation.
Reconfiguration of other airfield facilities	Biological elements: Macrophytes and phytobenthos	Construction impacts to biological elements due to water quality: Potential increase in runoff; potential increase in suspended sediments and fines due to works and disturbance to	CoCP, application of relevant guidance, and EAP to provide mitigation.

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
	Benthic invertebrate fauna	substrate, and potential for fines to enter the River Mole via drainage. Fines likely to settle in margins and subsequently be colonised by macrophytes during lower flows and be re-suspended during higher flows. This could disturb benthic invertebrates and fish temporarily. However, distance of works from the River Mole would make the impact of this negligible.	Require survey data to account for species quantity and quality.
	Hydromorphological elements supporting the biological elements Structure of the riparian zone	Change to substrate in riparian zone – most likely to be made ground but riparian zone is already developed, so no overall change from present conditions. Potential contaminated ground on site, however which may need to be remediated. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
	Specific pollutants: Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	Construction impacts to water quality: Potential increase in runoff; potential increase in suspended sediments and fines due to runway works and disturbance to substrate, and potential for fines to enter the River Mole. However, distance of works from River Mole would make this unlikely.	CoCP, application of relevant guidance, and EAP to provide mitigation.
Provision of reconfigured car parking, including new car parks	Hydromorphological elements supporting the biological elements Structure of the riparian zone	Potential disturbance/loss of riparian zones under footprint of internal routes. As this is unlikely to be large swathes of floodplain, impact is likely to be negligible, and therefore not causing deterioration to the status of the relevant water bodies within the Project's boundary.	N/A
Surface access (including highway) improvements. including: South Terminal roundabout works. Earthworks would support the approach to the bridge and reinforced earth-walls or retaining walls would be required between the Brighton-London mainline railway and slip roads North Terminal roundabout Replace the existing roundabout with a signalised junction arrangement Longbridge roundabout – expanded northwards and eastwards into flood zone, extended crossing of Mole on Barcombe Road	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna Fish fauna	Working within or close to the channel (including Gatwick Stream, Burstow Stream) could release large volumes of sediment and soil, presenting a temporary but localised risk to species within the channel during works. Risks could include smothering, loss of habitat and burial. Potential loss or relocation of some species under footprint of retaining walls and earthworks.	CoCP, application of relevant guidance, and EAP to provide mitigation. Impact to species quality and quantity to be determined at the ES stage following results from fish surveys and other ecological surveys.
		Disturbance to fish species within the river at this point, which could include temporary interruption to any migration (if occurring), potential for disturbance or loss of species over a localised and temporary event. Disturbance could be due to noise of construction, movement of substrate within or adjacent to channel or installation of structures within or adjacent to the channel. Overall impact likely to be negligible. Sediment could be remobilised during works with potential for smothering downstream channel bed features or in-channel habitat (localised and temporary sediment remobilisation so impact limited). Installation of cofferdam should mitigate this. Overall impact likely to be negligible.	Avoid spawning periods for working in the river.
	Hydromorphological elements supporting the biological elements Hydrological regime Quantity and dynamics of water flow Structure and substrate of the river bed Structure of the riparian zone	Removal/change to subsurface drainage systems as a result of earth works will loosen substrate in localised area, temporarily affecting porosity, cohesion, pore water and integrity of surface therefore potentially affecting the structure of the riparian zone. An increase in the length of the concrete lined channel further reduces the potential for naturalisation in Burstow Stream. Loss of riparian zone and structure under footprint of any newly created areas as part of the Project. Potential increase in loose non-cohesive material as works being excavated, and potential disturbance to substrate adjacent to the road works and the Burstow stream works.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation.

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
		However, this is short-term, temporary and localised. Overall, this is unlikely to cause a change in water body status.	
		Potential change to structure of channel substrate due to construction in the Burstow Stream. Changes in variability of flow will lead to increased sediment variability. Aggregation of fines (potential for) in slacker areas of water.	
		Potential disturbance/loss of riparian zones under footprint of internal routes. As this is unlikely to be large swathes of floodplain, the impact is likely to be negligible, and therefore not causing deterioration to the status of the relevant water bodies within the Project's boundary. Substrate most likely to be made ground but riparian zone is already developed, so no overall change from present conditions. Potential contaminated ground on site.	Limit journeys with plant on ground to avoid tracking repetitively on softer verges; provision of matting; utilisation of pollution prevention guidelines. CoCP, application of relevant guidance, and EAP to provide mitigation.
	Chemical and physico-chemical elements supporting the biological elements Oxygenation conditions Nutrient conditions	As these water bodies are connected via drainage capture and ditches, there could be a potential temporary increase in localised suspended sediment concentrations and therefore deterioration in water quality but not substantially greater than present background conditions. Fines likely to settle in margins and be re-suspended during higher flows. There will be no overall change in water body status.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation.
	Specific pollutants Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	Working within or close to the channel (including Gatwick Stream, Burstow Stream and balancing ponds close to M23) could release large volumes of sediment and soil, presenting a temporary but localised risk to species within the channel during works. As these water bodies are connected via drainage capture and ditches, there could be a potential temporary increase in localised suspended sediment concentrations but not substantially greater than present background conditions. Fines likely to settle in margins and be re-suspended during higher flows. There will be no overall change in water body status	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation.
Reconfiguration of existing utilities, including surface water, foul drainage and power. Including: Works to realign existing surface water drainage infrastructure along Taxiway Yankee, providing a connection to Pond D Creation of an additional runoff treatment and storage area (including runoff from deicing areas) to complement the existing	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna Fish	No change to Pond D as a result of works. Potential improvement to River Mole water quality as drainage is improved.	CoCP, application of relevant guidance, and EAP to provide mitigation.
		Working within or close to Pond D could release large volumes of sediment and soil, presenting a temporary but localised risk to species within the channel during works. Pond D is not a surface water body.	
		Underground works likely to involve excavation and piling. Disturbance to any species located in soils (if any). Fines likely to settle in margins and subsequently be colonised by macrophytes during lower flows and be re-suspended during higher flows if they are entrained across the surface to the Mole. This could disturb benthic invertebrates and fish temporarily. However, distance of works from River Mole would make this unlikely. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation.
		Potential contaminated ground under the original Pond A, which could release contaminants into the watercourse (River Mole) during construction. Wash out into the River Mole could release sediment and soil, presenting a temporary but localised risk to overall water quality conditions. However, distance of works from River Mole would make this unlikely.	CoCP, application of relevant guidance, and EAP to provide mitigation.

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
capacity provided by Pond D. Relocation of Pond A	Hydromorphological elements supporting the biological elements Hydrological regime Quantity and dynamics of water flow Morphological conditions River depth and width variation Structure and substrate of the river bed Structure of the riparian zone	Potential disturbance/loss of riparian zones under footprint of drainage routes. Impact is only likely to be negligible, and therefore not causing deterioration to the status of the relevant water bodies within the project's boundary (River Mole).	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation.
		Disturbance to riparian zone due to nature of works below surface. Change to substrate in riparian zone – most likely to be made ground but riparian zone is already developed, so no overall change from present conditions. Potential contaminated ground on site. Overall impact likely to be negligible. Disturbance to substrate due to excavation during construction. Construction impacts due to changes in substrate – discharge to gravity to River Mole only. However, there will be no significant impact at water body scale or to other water bodies outside of airport boundary and no discernible pathway to these as receptors. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation.
		Loss of substrate under footprint of any newly created areas as part of the Project. Potential increase in loose non-cohesive material as works being excavated, and potential disturbance to substrate. However, this is short-term, temporary and localised. Due to the proximity of water bodies, this is unlikely to cause a change in water body status and is likely to increase levels of biodiversity and green spaces. Relocation of Pond A provides extra floodplain capacity. Impacts to Pond A likely to be more site-specific due to connection to drainage system. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
	Chemical and physico-chemical elements supporting the biological elements Oxygenation conditions Nutrient conditions	Risk of discharging waste materials from the works into the water bodies due to proximity of the River Mole can cause deterioration to quality elements. Any impact is likely to be localised and temporary and depends on flood routes, so potential minor impact. Impact to Pond A likely to be greater due to connection of drainage. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
	Specific pollutants: Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	Construction impacts to water quality: Potential increase in runoff; potential increase in suspended sediments and fines due to runway works and disturbance to substrate, and potential for fines to enter the River Mole. However, distance of works from River Mole would make this unlikely.	CoCP, application of relevant guidance, and EAP to provide mitigation.
		Risk of discharging waste materials from the works into the water bodies depends on the likely flood routes, and containment of pollutants during works; therefore, the impacts to nutrient conditions during construction is largely controlled by this. Any impact is likely to be localised and temporary and depends on flood routes, so potential minor impact. Impacts to Pond A likely to be more site-specific due to connection to drainage system. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
Landscape/ecological planting and environmental mitigation. Including: Lowering of ground levels in Museum Field	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna Fish fauna	Potential direct effects on biological quality elements due to change in habitat structure within the River Mole (upstream of Horley) Loss of habitat under footprint of embankment and in area where floodplain is lowered so loss of benthic invertebrates and macrophytes/phytobenthos. Invertebrates: Potential negative effect on macrophytes and invertebrates because of water quality during construction and release of fines as substrate is lowered.	Habitat enhancement within flood storage area through integration of scrapes and other wetland habitat features. CoCP, application of relevant guidance, and EAP to provide mitigation. Any low points within the flood storage area should be connected to the River Mole by swales to encourage any fish

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
Provision of a new flood compensation area (FCA) to the east of Museum Field Diversion of the River Mole and Museum Field FCA / east of Museum Field FCA with re-meandering Lowering of the existing ground levels in car park X by 2.5 metres; installation of flapped culvert Provision of a new flood storage area to the east of Gatwick Stream, south of Crawley Sewage Treatment Works		Ecology and riparian habitat: Permanent loss of aquatic habitat under footprint of spillway but potential increase in areas where floodplain lowered due to removal of channel bank and lowering of floodplain to facilitate this structure.	that move with rising flood water to return to the river as flood waters recede. Further design information required to understand how fish will get over the spillway.
		Construction of the two-stage channel as part of river diversion: Potential change in habitat structure within the Mole (upstream of Horley). Potential effect on macrophytes and invertebrates because of water quality during construction and release of fines as substrate is lowered. Overall impact likely to be negligible.	Impoundment should not occur outside of flood events. Design culverts to have rough bed/baffles to maintain water depth at low flows to allow fish passage. CoCP, application of relevant guidance, and EAP to provide mitigation.
		Flap culvert installation: Invertebrates and macrophytes: Disturbance during construction and displacement of species during construction. No impact to water body overall.	CoCP, application of relevant guidance, and EAP to provide mitigation.
		Potential fish disturbance during construction works. Potential limited loss of habitat due to the siltation resulting from the works within the banks. However, this will be temporary. Potential disturbance to fish due to noise during construction. However, this will be temporary and localised. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
	Hydromorphological elements supporting the biological elements Hydrological regime Quantity and dynamics of water flow Morphological conditions River depth and width variation Structure and substrate of the river bed Structure of the riparian zone	Loss of riparian zone in areas under the spillway, and where floodplain substrate lowered. Hydromorphology and habitat development: Limiting the maximum flow downstream of the Museum Field flood storage area could reduce sediment transport in the channel downstream. This could theoretically see a reduction in reworking of the channel bed and an increase in the extent and duration of smothering of the river bed by fine sediment supplied from upstream. This could then in turn cause the channel bed to become more compact and stable and this will reduce the habitat suitability of the channel bed. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
		Structure and substrate of the river bed and riparian zone: The impacts could include reduced or increased sediment supply downstream of the structure; destabilisation of bed and banks downstream of culvert;	Design flow control structure to reduce water levels behind the embankment slowly (if the water level receded rapidly fish are more likely to be stranded). CoCP, application of relevant guidance, and EAP to provide mitigation.
	Chemical and physico-chemical elements supporting the biological elements Thermal conditions Oxygenation conditions Nutrient conditions	Thermal conditions: Flood water held in the storage basin would be held temporarily and is likely to have a negligible impact on water temperature of the water body. Oxygenation conditions. Flood water held in the storage basin artificially would be temporary and is likely to have a negligible impact on dissolved oxygen levels of the water body.	N/A
	Specific pollutants: Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	Water quality: Pollution by other substances identified as being discharged in significant quantities into the body of water. There is a temporary potential pollution risk if working in or adjacent to channel particularly where floodplain is being lowered to make way for this element of the Project. Overall impact likely to be negligible.	All works to be undertaken in accordance with relevant Pollution Prevention Guidelines. Riparian planting could be used as buffer strips to reduce diffuse pollution.
Construction compounds	Biological elements: Macrophytes and phytobenthos	Disturbance to species within substrate and potential smothering of species and disturbance of habitat due to plant movements. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
	Invertebrates		
	Hydromorphological elements supporting the biological elements Structure of the riparian zone	Risk of discharging waste materials from the works into the watercourses. Works could release large volumes of sediment and soil, presenting a temporary but localised risk particularly where plant movement is frequent. Potential indirect impacts from construction stage of the development can be managed and no likely significant effects are anticipated on the water environment depending on whether there is a pathway to the receptor. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
		Potential loss of riparian zone under footprint of any newly created areas as part of the Project. Overall impact likely to be negligible.	
		Potential increase in loose non-cohesive material as works being excavated, and potential disturbance to substrate. However, this is short-term, temporary and localised. Overall, this is unlikely to cause a change in water body status. Overall impact likely to be negligible.	
	Chemical and physico-chemical elements supporting the biological elements Oxygenation conditions Nutrient conditions	Risk of discharging waste materials from the works into the watercourses. Works could release large volumes of sediment and soil, presenting a temporary but localised risk particularly where plant movement is frequent. Potential indirect impacts from construction stage of the development can be managed and no likely significant effects are anticipated on the water environment depending on whether there is a pathway to the receptor. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
	Specific pollutants: Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	Risk of discharging waste materials from the works into the watercourses. Works could release large volumes of sediment and soil, presenting a temporary but localised risk particularly where plant movement is frequent. Potential indirect impacts from construction stage of the development can be managed and no likely significant effects are anticipated on the water environment depending on whether there is a pathway to the receptor. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
Non-Native Invasive Species	All quality elements	Risk of spread of invasive species. Reportable on sighting. The presence of American signal crayfish has been confirmed in Gatwick Stream. New Zealand mud snail was identified at both the River Mole and Gatwick Stream. Need to be removed if possible.	Invasives are reportable to DEFRA. Best practice guidelines should be used to prevent spread of species.
Connection to European sites	River Mole UWWT. Nitrates Regulations: Medway at Weir Wood NVZ S488, Eden Brook East of Lingfield NVZ S487, Wandle (Croydon to Wandsworth) and the R. Gravney NVZ S464, Hogsmill NVZ S450, Law Brook S679. Mole Gap to Reigate Escarpment Habitats Regulations.	No effect.	N/A

Table 4.1.2: Comparison of project against status objectives and elements for surface water bodies during operation

Key to Impact							
Negative		Negligible		Positive		No change	

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
Amendments to runway, holding area and reconfiguration of taxiways – including de-icer and drainage	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna Fish fauna	Increase in impermeable area. Potential increase in discharge to gravity into the River Mole. However, no impact to All biological elements as discharge would only occur when water levels are high in the River Mole to meet pollution prevention elements of discharge consent from Pond D. Increased discharge would not be enough to change species numbers, quality and the habitat that they colonise downstream. Overall impact likely to be negligible.	N/A
		De-icer is not discharged to the Mole so no impact as a result of operation. Pond D is the key drainage pond receiving the majority of runoff from Gatwick including that transferred from the 'dirty' side of the Dog Kennel Pond. Runoff from the Pond D catchment drains to Pond D (lower) and is then raised by three Archimedes Screws. If the water quality meets the required standard, or if there is no capacity in the downstream storage lagoons, runoff enters Pond D (upper) via a series of separator channels and discharges to the River Mole. Discharge to the River Mole is at a consented rate, controlled by a series of hydrobrakes and pumps. The actual rate of discharge is determined by the volume of flow in the River Mole. Higher flow rates in the River Mole permit a higher discharge rate from Pond D (upper).	N/A. Will need further information at the Environmental Statement (ES) stage to further support this.
	Hydromorphological elements supporting the biological elements Hydrological regime Quantity and dynamics of water flow Structure of the riparian zone	Resurfacing and removal of redundant hardstanding – potential change in impermeable areas. Increased discharge (attenuated to greenfield discharge) would not impact on hydrological regime sufficiently to cause deterioration in status. Overall impact likely to be negligible.	N/A
	Chemical and physico-chemical elements supporting the biological elements: Oxygenation conditions Nutrient conditions	De-icer has a very large biological oxygen demand (BOD), which would be discharged into Pond D but not into the River Mole. Pollution storage lagoons are impacted by current and future conditions, mainly as a result of pollution from de-icer and the discharge of pollutants from aircraft during takeoff, landing and taxiing. No change to River Mole as pollutants treated in Pond D or additional treatment in a storage tank beneath car park Y or via pollution lagoons.	N/A
Pier and stand alterations (including a proposed new pier)	Biological elements: Invertebrates Fish	Project results in an increase in impermeable surface area. However, no impact to ALL biological elements as discharge increase due to changes in impermeable area would only occur when water levels are high in the Mole – due to the nature of the discharge of water under gravity.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation. Require survey data to account for species quantity and quality to fully account for implications to biological elements.

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
			Require more information (to be done as part of ES) for corroboration of this.
	Hydromorphological elements supporting the biological elements Hydrological regime Quantity and dynamics of water flow Structure of the riparian zone	Potential change in impermeable areas. Increased discharge would not impact on hydrological regime sufficiently to cause deterioration in status. Overall impact likely to be negligible.	N/A
Reconfiguration of existing airport facilities, including fire training	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna	Fire training drainage - if polluted – would be diverted to a reed bed and then to foul drainage; if not polluted, it would be diverted to Pond A. In future operation, there would be no change to this.	CoCP, application of relevant guidance, and EAP to provide mitigation. Require survey data to account for species quantity and quality.
	Hydromorphological elements supporting the biological elements Structure of the riparian zone	potential change in impermeable areas. Increased discharge would not impact on hydrological regime sufficiently to cause deterioration in status. Overall impact likely to be negligible.	N/A
Extensions to the existing airport terminals (north and south); provision of additional hotel and office space	Hydromorphological elements supporting the biological elements Structure of the riparian zone	Substrate most likely to be made ground but riparian zone is already developed, so no overall change from present conditions during operation. Potential contaminated ground on site. Overall impact likely to be negligible.	N/A
Provision of reconfigured car parking, including new car parks	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna	All: if surface runoff increased due to increased impermeability, there is a likely increased risk of pollutants such as dust, traffic pollutants etc. being conveyed into any adjacent water body (e.g. River Mole, Gatwick Stream). Any impact is likely to be localised and temporary (usually after rain) and depends on flood routes and attenuation, so potential minor impact but insignificant at the water body scale.	CoCP, application of relevant guidance, EAP to provide mitigation.
	Hydromorphological elements supporting the biological elements Structure of the riparian zone	Substrate most likely to be made ground but riparian zone is already developed, so no overall change from present conditions.	
	Specific pollutants: Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	If surface runoff is increased due to increased impermeability, there is a likely increased risk of pollutants such as dust, traffic pollutants etc. being conveyed into any adjacent water body (e.g. The River Mole, Gatwick Stream). Any impact is likely to be localised and temporary (usually after rain) and depends on flood routes, and attenuation so potential minor impact but insignificant at the water body scale. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
Surface access (including highway) improvements. Including: South Terminal roundabout works. Earthworks would support the approach to the bridge and reinforced earth-walls or retaining walls would	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna Fish fauna	All - Drainage has the potential to provide a contamination pathway to a river from road dust and contaminants if not intercepted by better road drainage under current conditions, where it is discharged into toe drains. With an improved drainage strategy, there is likelihood of betterment to all water bodies connected to the Mole, Burstow and Gatwick Streams. Overall impact likely to be negligible.	Drainage strategy to prevent contaminant loads discharging into the water bodies.
	Hydromorphological elements supporting the biological elements Hydrological regime	Where land take would be required, the riparian zone would be lost under the footprint of the works. Overall impact likely to be negligible.	N/A

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
be required between the Brighton-London mainline railway and slip roads Longbridge roundabout – expanded northwards and eastwards into flood zone, extended crossing of Mole on Barcombe Road	Quantity and dynamics of water flow Structure and substrate of the river bed Structure of the riparian zone		
	Chemical and physico-chemical elements supporting the biological elements Oxygenation conditions Nutrient conditions	Potential improvement on water quality within the watercourse if surface water which normally flows into river from flooding runoff carries pollutants and silts, e.g. by running off road surfaces. Improvement dependent on drainage design. Drainage has the potential to provide a contamination pathway to the water bodies (Burstow Stream, River Mole) from road dust and contaminants if not intercepted by the road drainage under current conditions - where it is discharged into toe drains. With an improved drainage strategy, there is the likelihood of betterment in water quality to all water bodies connected to the Mole, Burstow and Gatwick Streams.	Drainage strategy in place to provide betterment.
	Specific pollutants Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	Drainage: Potential to provide a contamination pathway to river from road dust and contaminants if not intercepted by road drainage under current conditions, where it is discharged into toe drains. With an improved drainage strategy, likelihood of betterment to all water bodies connected to the River Mole, Burstow Stream and Gatwick Stream.	N/A
		Internal access routes: No change from present conditions.	N/A
Reconfiguration of existing utilities, including surface water, foul drainage and power. Including: Works to realign existing surface water drainage infrastructure along Taxiway Yankee, providing a connection to Pond D Creation of an additional runoff treatment and storage area (including runoff from deicing areas) to complement the existing capacity provided by Pond D. Relocation of Pond A	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna	No change to Pond D. Potential improvement to River Mole water quality as drainage is improved.	CoCP, application of relevant guidance, and EAP to provide mitigation.
		Relocation of Pond A could increase levels of biodiversity and green spaces. Relocation of pond A provides extra floodplain capacity.	
	Hydromorphological elements supporting the biological elements Structure of the riparian zone	Potential disturbance/loss of riparian zones under footprint of drainage routes. Impact is only likely to be negligible, and therefore not causing deterioration to the status of the relevant water bodies within the project's boundary (River Mole).	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation.
		Potential change in impermeable areas. Increased discharge would not impact on hydrological regime sufficiently to cause deterioration in status.	N/A
		Improvement due to less runoff in places where it has previously caused a problem. Decreased runoff discharged to water bodies.	N/A
		Loss of substrate under footprint of any newly created areas as part of the Project. Potential increase in loose non-cohesive material as works being excavated, and potential disturbance to substrate. However, this is short-term, temporary and localised. Due to the proximity of water bodies, this is unlikely to cause a change in water body status and is likely to increase levels of biodiversity and green spaces. Relocation of Pond A provides extra floodplain capacity. Impacts to Pond A likely to be more site-specific due to connection to drainage system. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
	Nutrient conditions	No change to Pond D. Potential improvement to River Mole water quality as pollutants are not discharged directly into the water body.	N/A

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
	Specific pollutants: Pollution by all priority substances identified as being discharged into the body of water Pollution by other substances identified as being discharged in significant quantities into the body of water	If surface runoff is increased due to increased impermeability, there is a likely increased risk of pollutants such as dust, traffic pollutants etc. being conveyed into any adjacent water body (e.g. the River Mole). Any impact is likely to be localised and temporary (usually after rain) and depends on flood routes, so potential minor impact but insignificant at the water body scale. Overall impact likely to be negligible.	N/A
Landscape/ecological planting and environmental mitigation Lowering of ground levels in Museum Field Provision of a new flood compensation area (FCA) to the east of Museum Field Diversion of the River Mole and Museum Field FCA / east of Museum Field FCA with re-meandering Lowering of the existing ground levels in car park X by 2.5 metres; installation of flapped culvert Provision of a new flood storage area to the east of Gatwick Stream, south of Crawley Sewage Treatment Works	Biological elements: Macrophytes and phytobenthos Benthic invertebrate fauna Fish fauna	Potential direct effects on biological quality elements due to change in habitat structure within the River Mole (upstream of Horley) Potential fish stranding during operation, and therefore potential fish kills. Loss of habitat under footprint of embankment and in area where floodplain is lowered so loss of benthic invertebrates and macrophytes/phytobenthos.	Habitat enhancement within flood storage area through integration of scrapes and other wetland habitat features. CoCP, application of relevant guidance, and EAP to provide mitigation. Further design information required to understand how fish will get over the spillway.
		Potential direct effects on biological quality elements due to change in habitat structure within the River Mole (upstream of Horley) Potential fish stranding during operation, and therefore potential fish kills. Loss of habitat under footprint of embankment and in area where floodplain is lowered so loss of benthic invertebrates and macrophytes/phytobenthos. Ecology and riparian habitat: Permanent loss of aquatic habitat under footprint of spillway but potential increase in areas where floodplain lowered due to removal of channel bank and lowering of floodplain to facilitate this structure.	Habitat enhancement within flood storage area through potential integration of scrapes and other wetland habitat features. Any low points within the flood storage area should be connected to the River Mole by swales to encourage any fish that move with rising flood water to return to the river as flood waters recede. Further design information required to understand how fish will get over the spillway.
		Ecology: invertebrates. Potential effect on macrophytes and invertebrates because of water quality, Dissolved Oxygen and artificial holding of water within the FCA. Loss of habitat under footprint of embankment and in area where floodplain is lowered so loss of benthic invertebrates and macrophytes/phytobenthos. Ecology and riparian habitat: Permanent loss of aquatic habitat under footprint of spillway but potential increase in areas where floodplain lowered due to removal of channel bank and lowering of floodplain to facilitate this structure.	Design culverts to be as short as possible to avoid tunnelling effect and light-dark barrier at threshold. Design culverts to have rough bed / baffles to maintain water depth at low flows to allow fish passage. Fish refuges on floodplain. For example, low points within the FCA could be connected to the watercourse by swales to encourage any fish that move with rising flood water to return to the river as flood waters recede. Design flow control structure to reduce water levels behind the embankment slowly (if the water level receded rapidly fish are more likely to be stranded). Any low points within the flood storage area should be connected by swales to encourage any fish that move with rising flood water to return to the river as flood waters recede. Loss of aquatic habitat for fish should be mitigated by in-channel habitat elsewhere. CoCP, application of relevant guidance, and EAP to provide mitigation. Need species data and ecology survey results.
		Potential direct effects on biological quality elements due to change in habitat structure within the River Mole (upstream of Horley). Loss of habitat under footprint of embankment and in area where floodplain is lowered so loss of benthic invertebrates and macrophytes/phytobenthos. Permanent loss of aquatic habitat under footprint of spillway but potential increase in areas where floodplain lowered due to removal of channel bank and lowering of floodplain to facilitate this structure. Potential fish stranding during operation, and therefore potential fish kills.	

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
		Potential improvement in habitat for all species due to two stage channel and variability in channel form. Improved heterogeneity in channel form improves water quality and therefore has the potential to improve the quantity and quality of species within the channel.	Impact to species quality and quantity to be determined at the ES stage following results from fish surveys and other ecological surveys.
		Facilitates fish passage and prevents kills due to fish being stranded out of river (potentially).	N/A
		Fish: Potential direct effects on biological quality elements due to change in habitat structure. Impacts can include potential impediment to fish passage (if any fish in the water body); potential fish stranding during FSA operation; potential fish kills during operation. Flap valve should reduce this. Loss of area for macrophytes and phytobenthos under footprint of works.	Design flow control structure to reduce water levels behind the embankment slowly (If the water level receded rapidly fish are more likely to be stranded). Consider habitat creation within the flood storage area e.g. multi-stage channel, scrapes etc. CoCP, application of relevant guidance, and EAP to provide mitigation.
	Hydromorphological elements supporting the biological elements Hydrological regime Quantity and dynamics of water flow Morphological conditions River depth and width variation Structure and substrate of the river bed Structure of the riparian zone	Loss of riparian zone in areas under the spillway, and where floodplain substrate lowered. Hydromorphology and habitat development: Limiting the maximum flow downstream of the Museum Field flood storage area could reduce sediment transport in the channel downstream. This could theoretically see a reduction in reworking of the channel bed and an increase in the extent and duration of smothering of the river bed by fine sediment supplied from upstream. This could then in turn cause the channel bed to become more compact and stable and this will reduce the habitat suitability of the channel bed. Additionally, there could be a destabilisation in the bed and banks downstream of the works. This will depend on how often the Museum Field flood storage area is in operation.	CoCP, application of relevant guidance, and EAP to provide mitigation.
		Increased turbidity and scour potential during operation. Impacts are short-lived, temporary and localised. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
		Loss of riparian zone under the spillway, and where floodplain substrate lowered. Hydromorphology and habitat development: Limiting the maximum flow downstream of the field could reduce sediment transport in the channel downstream. This could theoretically see a reduction in reworking of the channel bed and an increase in the extent and duration of smothering of the river bed by fine sediment supplied from upstream. This could then in turn cause the channel bed to become more compact and stable and this will reduce the habitat suitability of the channel bed. Additionally, there could be a destabilisaiton in the bed and banks downstream of the works. This will depend on how often the Museum Field flood storage area is in operation. Overall impact likely to be negligible.	The riparian zone within the flood storage area could be improved with fencing, buffer strips and/or planting and tree management and installation of woody debris (all subject to landowner agreement).
		Increased turbidity and scour potential during operation. Impacts are short-lived, temporary and localised. Overall impact likely to be negligible.	Installation of scour protection measures or stilling basin downstream of the spillway. CoCP, application of relevant guidance, and EAP to provide mitigation.
		Riparian zone: hydromorphology and ecology. Potential for gullying as water drains back into the watercourse from the floodplain and outflanking at spillway edges. Potential for bank destabilisation due to excess wetting leading to potential for sediments to be transported from floodplain to channel as the FCA drains.	Scour protection and toe protection along bankside installation of erosion control methods.

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
		Hydromorphology and habitat development: Limiting the maximum flow downstream of the FCA could reduce sediment transport in the channel downstream. This could theoretically see a reduction in reworking of the channel bed and an increase in the extent and duration of smothering of the river bed by fine sediment supplied from upstream. This could then in turn cause the channel bed to become more compact and stable and this will reduce the habitat suitability of the channel bed should this be reinstated. This depends on how often the FCA is in operation. Overall impact likely to be negligible.	Habitat enhancement within flood storage area through integration of scrapes and other wetland habitat features. Increase 'bed' roughness of culvert to provide opportunity for deposition of materials. Diverse and multi-stage channel profiles in the realigned watercourse to maximise the transport of coarse sediment through the impounded section, reduce the impact of flow impoundment on coarse sediment transport and minimise the accumulation of such material. Minimise length of culverted channel. Use natural gravel substrate to provide small-scale variations in water depth. Use baffles to retain sediment, create resting areas for fish and invertebrates and improve flow diversity. CoCP, application of relevant guidance, and EAP to provide mitigation.
		Morphology: The reduction of flow velocities is likely to lead to altered morphology both upstream and downstream of the two-stage channel structure. This could lead to reduced or increased sediment supply downstream of the structure; destabilisation of bed and banks downstream of culvert where unlined, which could be designed out; potential siltation downstream of culvert if flow velocities are reduced, as well as impacting upon invertebrate populations; and higher rates of siltation/blockages above the culvert than anticipated, affecting the operation of the culvert.	
		River depth and width: The opportunity to vary channel form could improve channel width and depth. However, there is unlikely to be much variation if culverted, so variability needs to be added to detailed design. Overall impact likely to be negligible.	
		Structure and substrate: The opportunity to vary channel form through the development of a meandering two-stage channel could provide an additional benefit of improving the structure of the channel bed and the substrate also. At present, the sediments are silty which promotes poor water quality. Overall impact likely to be negligible.	
		Flow: The development of a sinuous channel promotes variable channel flow and improved heterogeneity in all channel characteristics. This is an opportunity for betterment. It improves water quality and potentially improves oxygen levels. Overall impact likely to be negligible.	
		Potential disturbance/loss of riparian zones under footprint. Impact is likely to be negligible, and therefore not causing deterioration to the status of the relevant water bodies within the Project's boundary.	CoCP, application of relevant guidance, and EAP to provide mitigation.
		Hydrological regime: Discharge likely to be more controlled, and intermittent compared to previous without flap. Overall, no deterioration in water body elements.	N/A
		Around outfall outlet: Temporary effect to substrate due to works in progress; no change in morphology within the river. Smaller rates of discharge via flapped outfall could lead to differential rates of repeated sediment deposition and erosion at outfall.	
		Structure and substrate of the river bed and riparian zone: The impacts could include reduced or increased sediment supply downstream of the structure; destabilisation of bed and banks downstream of culvert; potential siltation downstream of culvert if flow velocities are reduced, reducing the availability of clean spawning gravels for fish (if present, as well as impacting upon invertebrate populations (food of fish); higher rates of siltation/blockages above the culvert than anticipated, affecting the operation of the culvert.	Design flow control structure to reduce water levels behind the embankment slowly (if the water level receded rapidly fish are more likely to be stranded). CoCP, application of relevant guidance, and EAP to provide mitigation.

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
		Hydrological regime, flow of water: Limiting the maximum flow downstream of the FSA could have an impact on sediment transport in the channel downstream. This could theoretically see a reduction in reworking of the channel bed and an increase in the extent and duration of smothering of the river bed by fine sediment supplied from upstream. This could then in turn cause the channel bed to become more compact and stable and this will reduce the habitat suitability of the channel bed. This is a consequence of the Project. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation. Need species surveys to be undertaken to confirm potential risk.
	Chemical and physico-chemical elements supporting the biological elements Thermal conditions Oxygenation conditions Nutrient conditions	Thermal conditions: Flood water held in the storage basin would be held temporarily and is likely to have a negligible impact on water temperature of the water body. Oxygenation conditions. Flood water held in the storage basin artificially would be temporary and is likely to have a negligible impact on dissolved oxygen levels of the water body.	N/A
		Thermal conditions: Flood water held in the storage basin would be held temporarily and is likely to have a negligible impact on water temperature of the water body.	
		Oxygenation conditions: Flood water held in the storage basin would be temporary and is likely to have a negligible impact on dissolved oxygen levels of the water body.	
		Oxygenation conditions in the diversion could be improved due to variability in channel form and improvement to channel flow.	Positive impact. Mitigation not required.
		Thermal conditions: Flood water would be held temporarily and is likely to have a negligible impact on water temperature of the water body as a result of the car park.	N/A
		Oxygenation conditions: Flood water held in the car park area would be temporary and is likely to have a negligible impact on dissolved oxygen levels of the water body as a result of the car park.	
		Thermal conditions: Flood water held in the FSA would be held temporarily and is likely to have a negligible impact on water temperature of the water body.	
		Oxygenation conditions: Flood water held in the FSA would be temporary and is likely to have a negligible impact on dissolved oxygen levels of the water body.	
	All quality elements	Potential to cause temporary species displacement but overall this is neutral because of the benefits to the floodplain that this will bring.	Positive impact. Mitigation not required.
Connection to European sites	River Mole UWWT. Nitrates Regulations: Medway at Weir Wood NVZ S488, Eden Brook East of Lingfield NVZ S487, Wandle (Croydon to Wandsworth) and the R. Gravney NVZ S464, Hogsmill NVZ S450, Law Brook S679. Mole Gap to Reigate Escarpment Habitats Regulations.	No effect.	N/A

Table 4.1.3: Comparison of Project against Status Objectives and Elements for groundwater bodies

Key to Impact							
Negative		Negligible		Positive		No change	

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
Amendments to the existing northern runway including repositioning its centreline 12 metres further north to enable dual runway operations	Quantitative Dependent Surface Water Body Status Chemical Dependent Surface Water Body Status	During construction and operation: No significant change to the groundwater body because works are surficial. The geology in the vicinity of the airfield does not include a primary aquifer or a groundwater body; the depth of the groundwater body is unknown but considered to be much deeper than penetration by machinery. Alterations to the surface of the runway are shallow and therefore unlikely to form a pathway to the groundwater receptor.	N/A
Pier and stand alterations (including a proposed new pier	Quantitative Dependent Surface Water Body Status Chemical Dependent Surface Water Body Status	During construction and operation: No significant change to the groundwater body because works are surficial. Piling would not be deep enough to create a pathway to the groundwater body. The geology here is not a primary aquifer or a groundwater body; the depth of the groundwater body is unknown. Alterations to the surface of the runway are shallow and therefore will not form a pathway to the groundwater receptor.	N/A
Reconfiguration of other airfield facilities, including fire training	Quantitative Dependent Surface Water Body Status Chemical Dependent Surface Water Body Status	During construction and operation: No significant change to the groundwater body because works are surficial. Piling would not be deep enough to create a pathway to the groundwater body. The geology here is not a primary aquifer or a groundwater body; the depth of the groundwater body is unknown. Alterations to the surface of the runway are shallow and therefore would be not form a pathway to the groundwater receptor. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
extensions to the existing airport terminals (north and south). Provision of additional hotel and office space	Quantitative Dependent Surface Water Body Status Chemical Dependent Surface Water Body Status	During construction and operation: No significant change to the groundwater body because works are surficial. Piling would not be deep enough to create a pathway to the groundwater body. The geology here is not a primary aquifer or a groundwater body; the depth of the groundwater body is unknown. Alterations to the surface of the runway are shallow and therefore will not form a pathway to the groundwater receptor. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
Provision of reconfigured car parking, including new car parks	Quantitative Dependent Surface Water Body Status Chemical Dependent Surface Water Body Status	During construction and operation: No significant change to the groundwater body because works are surficial. Piling would not be deep enough to create a pathway to the groundwater body. Local geology does not include a primary aquifer or a groundwater body; the depth to groundwater table is unknown. Alterations to the surface of the runway are shallow and therefore will not form a pathway to the groundwater receptor. Will need further data to support this.	N/A
Surface access (including highway) improvements. Including: South Terminal roundabout works. Earthworks would	Quantitative Dependent Surface Water Body Status Chemical Dependent Surface Water Body Status	During construction and operation of the carriageways: Groundwater quality: negligible potential for pollution pathway to receptor during piling (if piling is the preferred method over spread footings). No impact to both quality and quantity. Works unlikely to impact on quantity and quality of the water body. Pollution unlikely to enter bedrock; further, quality and quantity of groundwater within water body not going to be affected by surficial works as proposed in	N/A

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
support the approach to the bridge and reinforced earth-walls or retaining walls would be required between the Brighton-London mainline railway and slip roads Longbridge roundabout – expanded northwards and eastwards into flood zone, extended crossing of Mole on Barcombe Road		this Project. Where the road is widened through embankment steepening, no piling would be used, so no anticipated impact. On the roundabout, close to Balcombe Road, sheet piling is being considered, but again no impact likely due to the shallow nature of the works compared to the depth of the groundwater body below the surface. Close to the attenuation pond, a retaining wall would be put in place using piling. Again, no impact likely due to the shallow nature of the works compared to the depth of the groundwater body below the surface.	
	Quantitative Dependent Surface Water Body Status Chemical Dependent Surface Water Body Status	Piling: No impact likely due to the shallow nature of the works compared to the depth of the groundwater body below the surface. No survey data are available for the depth of the groundwater body, but the works are likely to be shallow in comparison.	N/A
Reconfiguration of existing utilities, including surface water, foul drainage and power. Including: Works to realign existing surface water drainage infrastructure along Taxiway Yankee, providing a connection to Pond D Creation of an additional runoff treatment and storage area (including runoff from deicing areas) to complement the existing capacity provided by Pond D. Relocation of Pond A	Quantitative Dependent Surface Water Body Status Chemical Dependent Surface Water Body Status	Groundwater: works are superficial so unlikely to disturb groundwater body as a receptor. Groundwater is not a surface water body in this area. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
		During construction and operation: No significant change to the groundwater body because works are surficial. The geology here is not a primary aquifer or a groundwater body; the depth of the groundwater body is unknown. Alterations to the surface of the runway are shallow and therefore will not form a pathway to the groundwater receptor.	N/A
	Quantitative Dependent Surface Water Body Status Chemical Dependent Surface Water Body Status	Construction impacts: Potential impacts to groundwater body if underground storage interrupts groundwater flow in aquifer. Depth of groundwater body unknown. It is not a ground water body. Overall impact likely to be negligible.	Any potential impact should be mitigated by drainage design, drainage capture and attenuation. CoCP, application of relevant guidance, and EAP to provide mitigation.
		During construction and operation: No significant change to the groundwater body because works are surficial. Piling would not be deep enough to create a pathway to the groundwater body. The geology here is not a primary aquifer or a groundwater body; the depth of the groundwater body is unknown. Alterations to the surface of the runway are shallow and therefore will not form a pathway to the groundwater receptor. Overall impact likely to be negligible.	CoCP, application of relevant guidance, and EAP to provide mitigation.
Landscape/ecological planting and environmental mitigation Lowering of ground levels in Museum Field Provision of a new flood compensation area (FCA) to the east of Museum Field Diversion of the River Mole and Museum Field FCA /	Quantitative Dependent Surface Water Body Status Chemical Dependent Surface Water Body Status	During construction and operation of flap valve: No significant change to the groundwater body because works are surficial. The geology here is not a primary aquifer or a groundwater body; the depth of the groundwater body is unknown.	CoCP, application of relevant guidance, and EAP to provide mitigation.

Project element	Element likely to be impacted	Description of impact	Possible ways to mitigate impact
east of Museum Field FCA with re-meandering Lowering of the existing ground levels in car park X by 2.5 metres; installation of flapped culvert Provision of a new flood storage area to the east of Gatwick Stream, south of Crawley Sewage Treatment Works		Pilling is proposed to a depth of approximately 8m. The Copthorne Tunbridge Wells Sands ground water body is approximately 5m deep at this location. Therefore, there is potential for and impact on connection to groundwater.	All works to be undertaken in accordance with relevant Pollution Prevention Guidelines.

5 Conclusions

5.1.1 The assessment of the works for the Project has identified some adverse impacts affecting the surface water bodies.

5.1.2 It has been concluded that potential impacts of the Project, including considerations for mitigation measures outlined, have the potential to cause deterioration in status of individual quality elements and the overall status of water bodies. It is not anticipated that the Proposed Project would compromise the implementation of the Urban Waste Water Treatment (England and Wales) Regulations 1994, the Nitrate Pollution Prevention Regulations 2017 or the Conservation of Habitats and Species Regulations 2019.

5.1.3 The preliminary assessment has concluded that it is anticipated that the Project could lead to deterioration in the current status or prevent the WER water bodies from achieving Good Status/Potential in the future and is therefore considered likely to be not currently compliant with the WER legislation. Consequently, a detailed WER compliance assessment is required to assess impacts of the Project and provide further detail on the mitigation (as listed in Section 4) for impacts anticipated to contribute towards deterioration. The detailed WER will be undertaken to support the Environmental Statement.

6 References

Environment Agency (2019) Catchment Data Explorer. [Online] Available at: https://environment.data.gov.uk/catchment-planning/

7 Glossary

7.1 Glossary of terms

Term	Description
Biological element	A collective term for a particular characteristic group of animals or plants present in an aquatic ecosystem (for example phytoplankton; benthic invertebrates; phytobenthos; macrophytes; macroalgae; phytobenthos; angiosperms; fish).
Biological quality element	A characteristic or property of a biological element that is specifically listed in Annex V of the Water Environment Regulations for the definition of the ecological status of a water body (for example composition of invertebrates; abundance of angiosperms; age structure of fish).
BOD	Biological oxygen demand
Catchment	The area from which precipitation contributes to the flow from a borehole spring, river or lake. For rivers and lakes this includes tributaries and the areas they drain. In river basin management this can refer to the larger management catchments and the smaller operational catchments.
Chemical status	The classification status for the surface water body against the environmental standards for chemicals that are priority substances and priority hazardous substances. Chemical status is recorded as good or fail. A status of good means that concentrations of priority substances and priority hazardous substances do not exceed the environmental quality standards in the Environmental Quality Standards Directive. The chemical status classification for the water body, and the confidence in this (high or low), is determined by the worst test result. Chemical status and ecological status together define the overall surface water status of a water body. For groundwater see "Groundwater chemical status".
Classification	Method for distinguishing the environmental condition or ‘status’ of water bodies and putting them into one category or another.
CoCP	Code of Construction Practice
Diffuse sources (of pollution)	Diffuse sources are primarily associated with run-off and other discharges related to different land uses such as agriculture and forestry, from septic tanks associated with rural dwellings and from the land spreading of industrial, municipal and agricultural wastes.
EA	Environment Agency
EAP	Environmental Action Plan
Ecological status	Ecological status is an expression of the structure and functioning of aquatic ecosystems associated with surface waters. Such waters are classified as being of good ecological status when they meet the requirements of the regulations.
EIA	Environmental Impact Assessment
ES	Environmental Statement
FCA	Flood Compensation Area
GAL	Gatwick Airport Limited
GES	Good ecological status is a general term meaning the status achieved by a surface water body when both the ecological status and its chemical status are at least good or, for groundwater, and when both its quantitative status and chemical status are at least good.
GEP	Good ecological potential
Good groundwater status	Good groundwater status is that achieved by a groundwater body when both its quantitative status and chemical status are good.
Good surface water chemical status	Good surface water chemical status means that concentrations of pollutants in the water body do not exceed the environmental limit values specified in the regulations.
Heavily Modified Water Body	Article 2 (9) defines a heavily modified water body as a ‘body of surface water which as a result of physical alterations by human activity is substantially changed in character, as designated by the Member State in accordance with the provisions of Annex II (of the Water Framework Directive).’
Hydromorphology	Describes the hydrological and geomorphological processes and attributes of surface water bodies. For example for rivers, hydromorphology describes the form and function of the channel as well as its connectivity (up and downstream and with

Term	Description
	groundwater) and flow regime, which defines its ability to allow migration of aquatic organisms and maintain natural continuity of sediment transport through the fluvial system. The Water Environment Regulations require surface waters to be managed in such a way as to safeguard their hydrology and geomorphology so that ecology is protected.
ITTS	Inter-Terminal Transit System
Macrophyte	Larger plants, typically including flowering plants, mosses and larger algae but not including single-celled phytoplankton or diatoms.
Morphology	Describes the physical form and condition of a water body, for example the width, depth and perimeter of a river channel, the structure and condition of the riverbed and bank.
MRF	Material recovery facility
MT	Motor transport
Nitrate Vulnerable Zones	A Nitrate Vulnerable Zone is designated where land drains and contributes to the nitrate found in "polluted" waters
Nitrates Regulations	A basic measure under the WER, the Nitrates regulations aims to protect water quality by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices.
NNIS	Non-native invasive species. Many species of plants and animals have been introduced to this country. Several of these non-native species are invasive and have been causing serious problems to the aquatic and riverine ecology and environment. Problems include detrimental effects on native species, deoxygenation of water causing fish mortalities, blocking of rivers and drainage channels, predation and competition with native species, and in some cases pose health risks to the public or livestock.

Term	Description
No deterioration (in water body status)	Where none of the quality elements used in the classification of water body status deteriorates to the extent that the overall status of the water body is reduced. This is referred to as 'preventing deterioration' throughout the consultation.
Not designated artificial or heavily modified	A description of a water body that has not been designated as artificial or heavily modified. In other words it is substantially natural in character.
PEIR	Preliminary Environmental Information Report
Point sources (of pollution)	Point sources are primarily discharges from municipal wastewater treatment plants associated with population centres or effluent discharges from industry.
Protected areas	Areas that have been designated as requiring special protection under EU legislation for the protection of their surface water and groundwater or for the protection of habitats and species directly depending on water.
River basin	River basin means the area of land from which all surface water run-off flows, through a sequence of streams, rivers and lakes into the sea at a single river mouth, estuary or delta.
RBMP	River Basin Management Plan
ST	Surface Transport
WER	Water Environment Regulations