

Thames Tideway Tunnel
Thames Water Utilities Limited



Application for Development Consent

Application Reference Number: WWO10001

Environmental Statement Update Report Appendices - March 2014

Summary Assessment Tables: Barn Elms

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**Thames
Tideway Tunnel**



Creating a cleaner, healthier River Thames

APP208.01.09 (ES Vol 6) Barn Elms

(ES Vol 6 Table 4.10.1) Air quality – summary of construction assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Residential – Queen Elizabeth Walk (BELR4)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Residential – Lancaster House, Horne Way (BELR13)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Residential – Former Putney Hospital (BELR15)*	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Residential – The Lodge, Rocks Lane/Queen Elizabeth Walk (BELR1)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Ecological – Barn Elms Wetland Centre SSSI (BELR6)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Recreational – Barn Elms School Sports Centre Playing Fields (BELR 14)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Recreational – Barn Elms Boathouse (BELR7)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Recreational – London Wetland Centre (BELR5)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Recreational – Leaders Gardens (BELR12)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Recreational – Thames Path (BELR10)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Recreational – River Thames (BELR8)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Recreational – Barn Elms Playing Fields (BELR3)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Recreational – Barn Elms Sports Centre (BELR2)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Community – Scout Hut (BELR9)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible
Community – Sea Cadets Corp Unit (BELR11)	Local air quality – effects from construction road traffic and plant emissions	Negligible	None	Negligible
	Effects from construction dust	Negligible	None	Negligible

* Denotes receptor that is altered or constructed after the baseline year

(ES Vol 6 Table 4.10.2) Odour – summary of operational assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect	
Residential – Queen Elizabeth Walk (BELR4)	Odour	Negligible	None	Negligible	
Residential – Lancaster House (BELR13)		Negligible	None	Negligible	
Residential – Former Putney Hospital (BELR15)*		Negligible	None	Negligible	
Residential – The Lodge, Rocks Lane/Queen Elizabeth Walk (BELR1)		Negligible	None	None	Negligible
Ecological – Barn Elms Wetland Centre SSSI (BELR6)		Negligible	None	None	Negligible
Recreational – Barn Elms Schools Sports Centre Playing		Negligible	None	None	Negligible

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Fields (BELR14)				
Recreational – Barn Elms Boathouse (BELR7)		Negligible	None	Negligible
Recreational – London Wetland Centre (BELR5)		Negligible	None	Negligible
Recreational – Leaders Gardens (BELR12)		Negligible	None	Negligible
Recreational – Thames Path (BELR10)		Negligible	None	Negligible
Recreational – River Thames (BELR8)		Negligible	None	Negligible
Recreational – Barn Elms Playing Fields (BELR3)		Negligible	None	Negligible
Recreational – Barn Elms Sports Centre (BELR2)		Negligible	None	Negligible
Community – Scout Hut (BELR9)		Negligible	None	Negligible
Community – Sea Cadets Corp Unit (BELR11)		Negligible	None	Negligible

* Denotes receptor that is altered or constructed after the baseline year

(ES Vol 6) Aquatic ecology – construction not assessed in ES

(ES Vol 6 Table 5.10.1) Aquatic ecology – summary of operational assessment

Receptor	Effect	Significance of effect		Mitigation	Significance of residual effect
		Year 1	Year 6		
Designations and	Improvements in habitat quality through changes in	Negligible	Minor	None	Minor beneficial

Receptor	Effect	Significance of effect		Mitigation	Significance of residual effect
		Year 1	Year 6		
habitats	water quality		beneficial		
Marine mammals	Increase in the number and/or change in the distribution of marine mammals	Negligible	Negligible	None	Negligible
Fish	Reduction in the occurrence of dissolved oxygen related fish mortalities	Moderate beneficial	Moderate beneficial	None	Moderate beneficial
	Increase in the distribution of pollution sensitive fish species	Negligible	Moderate beneficial	None	Moderate beneficial
	Improvement in the quality of foraging habitat	Negligible	Moderate beneficial	None	Moderate beneficial
Invertebrates	Localised improvements in invertebrate diversity and abundance.	Negligible	Minor beneficial	None	Minor beneficial
	Increase in the distribution of pollution sensitive invertebrate species.	Negligible	Minor beneficial	None	Minor beneficial
Algae	Changes in algal communities	Negligible	Negligible	None	Negligible

(ES Vol 6 Table 6.10.1) Terrestrial ecology – construction assessment summary

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Designated sites				
London Wetland Centre SSSI	No significant change in breeding and wintering bird populations as	Negligible	None	Negligible

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
	a result of disturbance from noise and vibration during construction.			
The Wetland Centre SINC	No significant change in breeding and wintering bird populations as a result of disturbance from noise and vibration during construction.	Negligible	None	Negligible
Habitats				
Mature trees and amenity grassland	No significant change in the tree resource on site as replacement planting would be provided. The loss of amenity grassland and reinstatement with semi-improved acid grassland in addition to a brown roof would result an improvement to the quality of the local habitat resource.	Minor beneficial	None	Minor beneficial
Species				
Badgers	No significant change in badger populations due to temporary loss of a foraging resource, that would be reinstated following completion of works and temporary diversion around the site boundary.	Negligible	None	Negligible
	No significant change in badger populations as a result of low	Negligible	None	Negligible

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
	levels of disturbance from noise, and vibration.			
Bats	No significant change in bat populations as a result of disturbance from lighting.	Negligible	None	Negligible
	No significant change in the soprano pipistrelle bat population associated with the Chas Newens Marine Cruise Hire building due to lighting, noise and vibration.	Negligible	None	Negligible
	No significant change in bat populations as a result of increased noise and vibration adjacent to the poplar trees that have potential for transient bats to occasionally roost.	Negligible	None	Negligible
	No significant change in bat populations as a result of pruning of the large mature London plane tree in the south of the car park.	Negligible	None	Negligible
	A likely significant change in the populations of various bat species as a result of the provision of bat boxes on and adjacent to the site.	Moderate beneficial	None	Moderate beneficial

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Breeding birds	No significant change in breeding bird populations as a result of the loss of a small area of nesting habitat that would be reinstated on completion of works.	Negligible	None	Negligible
	No perceptible change in breeding bird populations as a result of temporary displacement of birds due to temporary increase in noise, vibration and movement on site.	Negligible	None	Negligible
	No perceptible change in breeding bird population as a result of disturbance from lighting.	Negligible	None	Negligible
Wintering birds	No perceptible change in breeding bird population as a result of the provision of bird boxes on and adjacent to the site.	Negligible	None	Negligible
	No significant change in wintering bird populations due to habituation to small increases in noise and vibration levels during construction.	Negligible	None	Negligible
Invertebrates	A likely significant increase in the number of nationally and locally	Moderate beneficial	None	Moderate beneficial

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
	notable invertebrate species present on site.			
Other notable species (hedgehog)	No significant change in hedgehog populations as a result of temporary habitat loss with reinstatement of habitat following completion of works. Improvements to foraging habitat are unlikely to result in a change in the hedgehog population.	Negligible	None	Negligible

(ES Vol 6) Terrestrial ecology – operational not assessed in ES

(ES Vol 6 Table 7.10.1) Historic environment – summary of construction assessment

Receptor (Heritage asset)	Effect	Significance of effect	Mitigation	Significance of residual effect
Buried heritage assets				
High potential for palaeoenvironmental remains within the alluvium. (Low or medium asset significance)	Asset removed by site stripping, demolition and replacement changing rooms. Asset significance reduced to negligible.	Minor adverse	Targeted archaeological investigation and recording, including geoarchaeological environmental sampling.	Negligible
	Asset removed by construction of the CSO drop shaft chambers, culverts, electrical and control kiosk and interception of foul water main.	Minor adverse		Negligible

Receptor (Heritage asset)	Effect	Significance of effect	Mitigation	Significance of residual effect
High potential for isolated, redeposited prehistoric remains (Low asset significance)	Asset significance reduced to negligible.		Targeted archaeological investigation and recording to form preservation by record.	
	Asset removed by site stripping, demolition and replacement changing rooms.	Minor adverse		Negligible
	Asset significance reduced to negligible.	Minor adverse		Negligible
High potential for evidence of prehistoric settlement and moderate potential for prehistoric structures or timber trackways (High asset significance)	Asset removed by construction of the CSO drop shaft chambers, culverts, electrical and control kiosk and interception of foul water main.	Major adverse		Negligible
	Asset significance reduced to negligible.	Major adverse		Negligible
	Asset removed by site stripping, demolition and replacement changing rooms.	Major adverse		Negligible
Low potential for Roman redeposited artefacts and agricultural remains (Low asset significance)	Asset removed by construction of the CSO drop shaft chambers, culverts, electrical and control kiosk and interception of foul water main.	Minor adverse		Negligible
	Asset significance reduced to negligible.	Minor adverse		Negligible
	Asset removed by site stripping, demolition and replacement changing rooms.	Minor adverse		Negligible
Low potential for early medieval drainage	Asset removed by construction of the CSO drop shaft chambers, culverts, electrical and control kiosk and interception of foul water main.	Minor adverse		Negligible
	Asset significance reduced to negligible.	Minor adverse		Negligible
	Asset removed by site stripping, demolition and replacement changing rooms.	Minor adverse		Negligible

Receptor (Heritage asset)	Effect	Significance of effect	Mitigation	Significance of residual effect
ditches (Low asset significance)	Asset significance reduced to negligible.			
	Asset removed by construction of the CSO drop shaft chambers, culverts, electrical and control kiosk and interception of foul water main. Asset significance reduced to negligible.	Minor adverse		Negligible
High potential for later medieval remains associated with the Barn Elms manor house, including outbuildings and landscaping; evidence of land reclamation and water management (Low or medium asset significance)	Asset removed by site stripping, demolition and replacement changing rooms. Asset significance reduced to negligible.	Minor or moderate adverse (depending on asset significance)		Negligible
	Asset removed by construction of the CSO drop shaft chambers, culverts, electrical and control kiosk and interception of foul water main. Asset significance reduced to negligible.	Minor or moderate adverse (depending on asset significance)		Negligible
High potential for 19th century footings of pump houses, tanks and flood gates adjacent to the foreshore and Beverley Brook; and of 18th–19th century outbuildings in the northern part of the site (Low asset significance)	Asset removed by site stripping, demolition and replacement changing rooms. Asset significance reduced to negligible.	Minor adverse		Negligible
	Asset removed by construction of the CSO drop shaft chambers, culverts, electrical and control kiosk and interception of foul water main. Asset significance reduced to negligible.	Minor adverse		Negligible

Receptor (Heritage asset) significance)	Effect	Significance of effect	Mitigation	Significance of residual effect
Above-ground heritage assets				
Barn Elms Playing Fields and Barn Elms Sports Centre (Medium asset significance)	Construction of a permanent access road and demolition of existing changing rooms.	Negligible	None	Negligible
Fluvial structures associated with Beverley Brook (Low asset significance)	No impact.	Negligible	None	Negligible
19th century Sea Cadet Corps building (Low asset significance)	No impact	Negligible	None	Negligible

(ES Vol 6) Historic environment – operational not assessed

(ES Vol 6 Table 8.10.1) Land quality – summary of construction assessment

Receptor (sensitivity)	Effect	Significance of effect	Mitigation	Significance of residual effect
Construction workers – general above ground site staff (Low)	Health effects from exposure to soil gases	Negligible	None	Negligible
	Health effects from detonation of UXO	Negligible	None	Negligible
Construction workers – below ground site staff (High)	Health effects from exposure to soil gases	Minor adverse	None	Minor adverse*
	Health effects from detonation of UXO	Minor adverse	None	Minor adverse*
Adjacent land-users, Thames Path users (Low)	Health effects from exposure to wind-blown dust	Negligible	None	Negligible
	Health effects from detonation of UXO	Negligible	None	Negligible
Adjacent land-users, recreational: sports centre/boat house/scout hut users (Medium)	Health effects from exposure to wind-blown dust	Negligible	None	Negligible
	Health effects from detonation of UXO	Negligible	None	Negligible
Adjacent land-users, residential (High)	Health effects from exposure to wind-blown dust	Minor adverse	None	Minor adverse*
	Health effects from detonation of UXO	Minor adverse	None	Minor adverse*
Built environment – residential and recreational buildings	Damage to structures from detonation of UXO during	Negligible	None	Negligible

Receptor (sensitivity)	Effect	Significance of effect	Mitigation	Significance of residual effect
and river wall/Beverly Brook flood defence (Low)	construction works			

* Although the effect is minor adverse, it is considered unlikely that the effect would occur.

(ES Vol 6) Land quality – operational not assessed in ES

(ES Vol 6 Table 9.10.1) Noise – summary of construction assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Surface construction noise				
BE1 – Pearson House	Noise	Not significant	None	Not significant
BE2 – Huntingford House	Noise	Not significant	None	Not significant
BE3 – Lancaster House	Noise	Significant	No further on-site mitigation practicable	Significant, however properties may be eligible for compensation (see para. 9.9.1 of the ES)
BE4 – Jay House	Noise	Not significant	None	Not significant
BE5 – 34-39 Stockhurst Close	Noise	Not significant	None	Not significant
BE6 – Scout Hut	Noise	Not significant	None	Not significant
BE7 – Barn Elms Boathouse	Noise	Not significant	None	Not significant
BE8 – Queen Elizabeth Walk	Noise	Not significant	None	Not significant

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
BE9 – Barn Elms Sport Centre	Noise	Not significant	None	Not significant
<u>BE10 – Knox House (new receptor)</u>	<u>Noise</u>	<u>Not significant</u>	<u>None</u>	<u>Not significant</u>
Road-based construction traffic				
BE8 – Queen Elizabeth Walk	Noise	Not significant	None	Not significant

(ES Vol 6 Table 9.10.2) Vibration – summary of construction assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
BE1 – Pearson House	Vibration	Not significant	None	Not significant
BE2 – Huntingford House	Vibration	Not significant	None	Not significant
BE3 – Lancaster House	Vibration	Not significant	None	Not significant
BE4 – Jay House	Vibration	Not significant	None	Not significant
BE5 – 34-39 Stockhurst Close	Vibration	Not significant	None	Not significant
BE6 – Scout Hut	Vibration	Not significant	None	Not significant
BE7 – Barn Elms Boathouse	Vibration	Not significant	None	Not significant
BE8 – Queen Elizabeth Walk	Vibration	Not significant	None	Not significant
BE9 – Barn Elms Sport Centre	Vibration	Not significant	None	Not significant
<u>BE10 – Knox House (new receptor)</u>	<u>Vibration</u>	<u>Not significant</u>	<u>None</u>	<u>Not significant</u>

(ES Vol 6 Table 9.10.3) Noise – summary of operational assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
BE1 – Pearson House	Noise	Not significant	None	Not significant
BE2 – Huntingford House	Noise	Not significant	None	Not significant
BE3 – Lancaster House	Noise	Not significant	None	Not significant
BE4 – Jay House	Noise	Not significant	None	Not significant
BE5 – 34-39 Stockhurst Close	Noise	Not significant	None	Not significant
BE6 – Scout Hut	Noise	Not significant	None	Not significant
BE7 – Barn Elms Boathouse	Noise	Not significant	None	Not significant
BE8 – Queen Elizabeth Walk	Noise	Not significant	None	Not significant
BE9 – Barn Elms Sport Centre	Noise	Not significant	None	Not significant
<u>BE10 – Knox House (new receptor)</u>	<u>Noise</u>	<u>Not significant</u>	<u>None</u>	<u>Not significant</u>

(ES Vol 6 Table 9.10.4) Vibration – summary of operational assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
BE1 – Pearson House	Vibration	Not significant	None	Not significant
BE2 – Huntingford House	Vibration	Not significant	None	Not significant
BE3 – Lancaster House	Vibration	Not significant	None	Not significant
BE4 – Jay House	Vibration	Not significant	None	Not significant

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
BE5 – Stockhurst Close	Vibration	Not significant	None	Not significant
BE6 – Scout Hut	Vibration	Not significant	None	Not significant
BE7 – Barn Elms Boathouse	Vibration	Not significant	None	Not significant
BE8 – Queen Elizabeth Walk	Vibration	Not significant	None	Not significant
BE9 – Barn Elms Sport Centre	Vibration	Not significant	None	Not significant
<u>BE10 – Knox House (new receptor)</u>	<u>Vibration</u>	<u>Not significant</u>	<u>None</u>	<u>Not significant</u>

(ES Vol 6 Table 10.10.1) Socio-economics – summary of construction assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect	Compensation
Users of open space – BESSC (LB of Wandsworth)	Effect on users from the temporary take up of public open space – BESSC	Minor adverse	None	Minor adverse	
Users of open space – BESSC	Effect on the amenity of open space users	Negligible	None	Negligible	
Users of Leaders Gardens	Effect on the amenity of users of Leaders Gardens	Negligible	None	Negligible	
Users of community facilities – Barn Elms Boat House	Effect on the amenity of the Boat House users	Negligible	None	Negligible	

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect	Compensation
Users of community facilities – Scout hut	Effect on the amenity of the Scout hut users	Negligible	None	Negligible	
Users of community facilities - Sea Cadet corps	Effect on the amenity of the Sea Cadet corps HQ users	Negligible	None	Negligible	
Users of Beverley Brook public footpath	Effect on the amenity of users of the Beverley Brook footpath	Negligible	None	Negligible	
Users of Thames Path and NCR4	Effect on the amenity of Thames Path and NCR 4 users	Negligible	None	Negligible	
Residents of nearby properties	Effect on the amenity of residents	Moderate adverse <u>Minor adverse</u>	No further on site mitigation practicable <u>None</u>	Moderate adverse <u>Minor adverse</u>	

(ES Vol 6 Table 10.10.2) Socio-economics – summary of operational assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Users of open space – BESSC	Permanent landscaping changes within public open space – BESSC	Negligible	None	Negligible

(ES Vol 6 Table 11.10.1) Townscape – summary of construction assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
The site	Change to character due to the introduction of site hoardings, welfare facilities, construction plant and intense construction activity into an open green space.	Major adverse	No mitigation possible	Major adverse
Barn Elms Recreation TCA	Change to character due to the presence of site hoardings, construction activity, road transport and cranes.	Moderate adverse	No mitigation possible	Moderate adverse
Leaders Gardens TCA	Slight change to part of the area's setting due to the presence of tall construction plant, cranes and construction activity.	Minor adverse	None	Minor adverse
Putney Residential TCA	Slight change to part of the area's setting due to the presence of tall construction plant, cranes and construction activity.	Minor adverse	None	Minor adverse
Barnes Common TCA	Slight change to part of the area's setting due to the presence of tall construction plant, cranes and construction activity.	Minor adverse	None	Minor adverse

(ES Vol 6 Table 11.10.2) Visual – summary of construction assessment

Receptor ¹	Effect	Significance of effect	Mitigation	Significance of residual effect
Residential				
Viewpoint 1.1: View south from residences along Palemead Close on the north bank of the river	Visibility of tall construction plant and cranes set amongst open green surroundings.	Minor adverse	None	Minor adverse
	At night, lighting would be barely perceptible.	Negligible	None	Negligible
Viewpoint 1.2: View northeast from residences along Horne Way	Visibility of site hoardings, welfare facilities, construction activities and construction plant, partially filtered by intervening trees.	Moderate adverse	No mitigation possible	Moderate adverse
	At night, intermittent visibility of lighting from upper storeys.	Minor adverse	None	Minor adverse
Recreational				
Viewpoint 2.1: View south from the northeast corner of the Barn Elms playing fields	Foreground intermittent visibility of construction traffic. Background visibility of construction activity, site hoardings and welfare facilities at the site.	Minor adverse	None	Minor adverse
	Visibility of tall construction plant and cranes set amongst green surroundings.	Minor adverse	None	Minor adverse
Viewpoint 2.2: View southwest from the western extent of Bishops Park	At night, lighting would be barely perceptible.	Negligible	None	Negligible

¹ Viewpoints where receptors are not present at night-time and therefore would not experience any effects arising from additional lighting (refer to para. 11.5.18 of the ES) are not included in the summary table.

Receptor ¹	Effect	Significance of effect	Mitigation	Significance of residual effect
Viewpoint 2.3: View northwest from Embankment outside Leaders Gardens	Visibility of tall construction plant and cranes set amongst green surroundings. Heavily filtered visibility of construction activity and hoardings.	Minor adverse	None	Minor adverse
	At night, lighting would be barely perceptible.	Negligible	None	Negligible
Viewpoint 2.4: View northwest from Leaders Gardens	Visibility of tall construction plant and cranes set amongst green surroundings. Heavily filtered visibility of construction activity and hoardings.	Minor adverse	None	Minor adverse
	Visibility of tall construction plant and cranes set among green surroundings. Heavily filtered visibility of construction activity and hoardings.	Minor adverse	None	Minor adverse
Viewpoint 2.5: View southwest from Embankment at Beverley Brook	At night, lighting would be barely perceptible.	Negligible	None	Negligible
	Intermittent visibility of cranes above the building line.	Negligible	None	Negligible
Viewpoint 2.6: View northeast from Barnes Common	Background visibility of site hoardings, construction activity and cranes, heavily filtered by vegetation.	Negligible	None	Negligible
	Background visibility of site hoardings (incorporating climbing plants), construction activity, road transport and cranes.	Minor adverse	None	Minor adverse
Viewpoint 2.7: View east from the Beverley Brook footpath, close to the running track	Background visibility of site hoardings (incorporating climbing plants), construction activity, road transport and cranes.	Minor adverse	None	Minor adverse
	Background visibility of site hoardings (incorporating climbing plants), construction activity, road transport and cranes.	Minor adverse	None	Minor adverse
Viewpoint 2.8: View southeast from the access track running through the Barn Elms School sports centre playing fields	Background visibility of site hoardings (incorporating climbing plants), construction activity, road transport and cranes.	Minor adverse	None	Minor adverse
	Background visibility of site hoardings (incorporating climbing plants), construction activity, road transport and cranes.	Minor adverse	None	Minor adverse
Viewpoint 2.9: View southeast from the Barn Elms School sports centre car park	Background visibility of site hoardings (incorporating climbing plants), construction activity, road transport and cranes.	Minor adverse	None	Minor adverse
	Background visibility of site hoardings (incorporating climbing plants), construction activity, road transport and cranes.	Minor adverse	None	Minor adverse

(ES Vol 6 Table 11.10.3) Townscape – summary of Year 1 and Year 15 operational assessment²

Receptor ³	Effect	Significance of effect	Mitigation	Significance of residual effect
The site	Change to character due to the introduction of an above ground structure in a small part of the larger open green space.	Minor adverse	None	Minor adverse
Barn Elms Recreation TCA	Slight change to setting due to the introduction of an above ground structure in a discrete corner of the open green space	Negligible	None	Negligible

Operational effects have been assessed to be the same in Year 1 and Year 15 of operation

Townscape character areas not assessed during operation (refer to para. 11.6.7 of the ES) are not included in the summary table

(ES Vol 6 Table 11.10.4) Visual – summary of Year 1 and Year 15 operational assessment⁴

Receptor ⁵	Effect	Significance of effect	Mitigation	Significance of residual effect						
Recreational										
Viewpoint 2.1: View south from the northeast corner of the Barn Elms playing fields	Visibility of the above-ground structure on the edge of the playing fields in the background of the view. Visibility of the reinstated changing facilities	<table border="1"> <tr> <td>Winter – Negligible</td> <td>Winter – none</td> <td>Winter – Negligible</td> </tr> <tr> <td>Summer – Negligible</td> <td>Summer – None</td> <td>Summer – Negligible</td> </tr> </table>	Winter – Negligible	Winter – none	Winter – Negligible	Summer – Negligible	Summer – None	Summer – Negligible		
Winter – Negligible	Winter – none	Winter – Negligible								
Summer – Negligible	Summer – None	Summer – Negligible								

² Operational effects have been assessed to be the same in Year 1 and Year 15 of operation

³ Townscape character areas not assessed during operation (refer to para. 11.6.7 of the ES) are not included in the summary table

⁴ Operational effects have been assessed to be the same in both Year 1 and Year 15 of operation.

⁵ Viewpoints not assessed during operation (refer to para. 11.6.11 of the ES) are not included in the summary table.

Receptor ⁵	Effect	Significance of effect	Mitigation	Significance of residual effect
Viewpoint 2.8: View southeast from the access track running through the Barn Elms School sports centre playing fields	Visibility of the above-ground structure on the edge of the playing fields in the background of the view.	Winter – Negligible	Winter – None	Winter – Negligible
		Summer – Negligible	Summer – None	Summer – Negligible
Viewpoint 2.9: View southeast from the Barn Elms School sports centre car park	Visibility of the above-ground structure on the edge of the playing fields in the background of the view.	Winter – Negligible	Winter – None	Winter – Negligible
		Summer – Negligible	Summer – None	Summer – Negligible

(ES Vol 6 Table 12.10.1) Transport – summary of construction assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Pedestrians (including sensitive pedestrians) and cyclists using the Thames Path, Rocks Lane (A306), Queen Elizabeth Walk and the Sports Centre grounds, including the rowing club and boat house	<ul style="list-style-type: none"> • Movement of large construction vehicles • Highway layout changes 	<p>Minor adverse effect on pedestrians</p> <p>Minor adverse effect on cyclists</p>	None	<p>Minor adverse effect on pedestrians</p> <p>Minor adverse effect on cyclists</p>
Private vehicle users in the area using the local highways or on-street parking	<ul style="list-style-type: none"> • Movement of large construction vehicles • Highway layout changes • Slight delay to journey time 	<p>Minor adverse effect on highway users</p> <p>Minor adverse effect on parking users</p>	None	<p>Minor adverse effect on highway users</p> <p>Minor adverse effect on parking users</p>

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Emergency vehicles travelling on Rocks Lane (A306) and Queen Elizabeth Walk	<ul style="list-style-type: none"> • Movement of large construction vehicles • Slight delay to journey time 	Minor adverse effect	None	Minor adverse effect
Bus users (passengers) travelling on routes along Rocks Lane (A306), Church Road (A3003) and Queen Elizabeth Walk	<ul style="list-style-type: none"> • Movement of large construction vehicles • Slight delay to journey time • Some additional patronage from construction workers 	Negligible effect	None	Negligible effect
Public transport users using rail services within the area	<ul style="list-style-type: none"> • Some additional patronage from construction workers 	Negligible effect	None	Negligible effect
Users of Leaders Gardens (children's play area) Users of Barn Elms School Sports Centre (fields) and Barn Elms playing fields Users of sea cadet corps HQ Users of Scout Hut/Hall Users of The London Wetland Centre St Mary Barnes Scout Group Users of Barnes Rugby Football Club	<ul style="list-style-type: none"> • Movement of large construction vehicles • Slight delay to journey time 	<p>Minor adverse effect on pedestrians</p> <p>Minor adverse effect on cyclists</p> <p>Minor adverse effect on highway users</p> <p>Minor adverse effect on parking users</p>	None	<p>Minor adverse effect on pedestrians</p> <p>Minor adverse effect on cyclists</p> <p>Minor adverse effect on highway users</p> <p>Minor adverse effect on parking users</p>
Residents on Rocks Lane (A306) and Queen Elizabeth Walk	<ul style="list-style-type: none"> • Movement of large construction vehicles 	Minor adverse effect on pedestrians	None	Minor adverse effect on pedestrians

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Residents of Lancaster House Residents, visitors and staff of the former Putney Hospital Users of business to the south of Faulkner House off Horne Way. Patrons of Red Lion Public House	<ul style="list-style-type: none"> Slight delay to journey time 	Minor adverse effect on cyclists Minor adverse effect on highway users Negligible effect on parking users		Minor adverse effect on cyclists Minor adverse effect on highway users Negligible effect on parking users

(ES Vol 6 Table 12.10.2) Transport – summary of operational assessment

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Private vehicle users in the area using the local highways or on-street parking Emergency vehicles travelling on Rocks Lane (A306) and Queen Elizabeth Walk Users of The London Wetland Centre St Mary Barnes Scout Group Users of Barnes Rugby Football Club Residents along Queen Elizabeth Walk	<ul style="list-style-type: none"> Occasional maintenance trips resulting in some temporary, short-term road network delay. 	Negligible effect	None	Negligible effect

(ES Vol 6 Table 13.10.1) Groundwater – construction assessment summary

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Upper aquifer	Deterioration in groundwater quality caused by creation of a pathway	Negligible	None	Negligible
Upper aquifer	Change in groundwater storage and flood risk as a result of physical obstruction	Negligible	None	Negligible

(ES Vol 6 Table 13.10.2) Groundwater – operational assessment summary

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Upper aquifer	Change in groundwater levels as a result of physical obstruction	Negligible	None	Negligible
Upper aquifer	Seepage into CSO drop shaft affecting groundwater resources	Negligible	None	Negligible
Upper aquifer	Deterioration in water quality in the upper aquifer from seepage out of drop shaft	Negligible	None	Negligible

(ES Vol 6 Table 14.10.1) Surface water – construction assessment summary

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Thames Upper and Middle, Beverley Brook (Motspur Park to Thames) and Pyl Brook at West Barnes	The assessment has not identified any likely significant adverse effects.	N/A	N/A	N/A

(ES Vol 6 Table 14.10.2) Surface water – operational assessment summary

Receptor	Effect	Significance of effect	Mitigation	Significance of residual effect
Thames Upper and Middle, Beverley Brook (Motspur Park to Thames) and Pyl Brook at West Barnes	Compliance with UWWTD and WFD. Improved water quality in the vicinity of the West Putney Storm Relief CSO by reduced pollutant loading and no reduction of DO levels due to reduced spill frequency, duration and volume from West Putney Storm Relief CSO	Major beneficial	None	Major beneficial
Thames Upper and Middle, Beverley Brook (Motspur Park to Thames) and Pyl Brook at West Barnes	Risk of exposure days to pathogens would be reduced to a maximum of 4 days in the typical year (a reduction of up to 120 days of risk of exposure)	Moderate beneficial	None	Moderate beneficial
Thames Upper and Middle, Beverley Brook (Motspur Park to Thames) and Pyl Brook at West Barnes	Sewage derived litter discharge at West Putney Storm Relief CSO would be reduced by approximately 96% improving the aesthetic quality of the river locally.	Moderate beneficial	None	Moderate beneficial

(ES Vol 6 Table 15.5.1) Flood risk – FRA summary

Source	Pathway	Current flood risk to the proposed development	Design measures	Flood risk from the proposed development (post design measures)	Flood risk to the proposed development post design measures
Tidal	Breach/ overtopping of tidal Thames flood defences	High (but residual only)	Flood defence height maintained. Monitoring of flood defence levels and repaired as required to maintain existing crest level <i>Emergency Plan</i>	No increase in tidal flood risk as a result of proposed development.	High (but residual only)
Fluvial	Breach/ overtopping of tidal Thames flood defences	High (but residual only)	Flood defence height maintained. Monitoring of flood defence levels and repaired as required to maintain existing crest level <i>Emergency Plan</i>	No increase in fluvial flood risk as a result of proposed development.	High (but residual only)
	Breach/ overtopping of Beverly Brook flood defences	High (but residual only)	<i>Emergency Plan</i>	No increase in fluvial flood risk as a result of proposed development.	High (but residual only)
Surface water	Surrounding area	Low	Site drainage in accordance with CoCP (Section 8) during construction. Brown roof and permeable surfacing to attenuate surface water runoff.	No increase in surface water flood risk as a result of proposed development	Low
			Discharge surface water to tidal Thames via West Putney CSO.		

Source	Pathway	Current flood risk to the proposed development	Design measures	Flood risk from the proposed development (post design measures)	Flood risk to the proposed development post design measures
			Attenuation on site if discharge is restricted.		
Groundwater	Underlying geology and groundwater levels restricted pathway	Low	Monitoring proposed during construction and operation. No dewatering of upper aquifer anticipated. Sheet piling around the site to prevent groundwater inflows from the upper aquifer.	No increase in groundwater flood risk as a result of proposed development.	Low
Sewer	Local drainage system	Low	CSO maintained with flumes and flap valves during construction. Flows diverted to existing CSO outfall if tunnel unavailable.	No increase in sewer flood risk as a result of proposed development.	Low
Artificial sources	London Wetland Centre	Low	Not applicable.	No impact from site so risk unchanged.	Low

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Thames Water Utilities Limited

Clearwater Court, Vastern Road, Reading RG1 8DB

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