Southern Water Services Final Draft Water Resource Management Plan 24

Annex 17: Strategic Environmental Assessment Environmental Report

Appendix L: Summary of Post Mitigation Significant Effects by Water Resource Zone Options

May 2025
Version 5

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
Hants Southampton East (HSE)	Recycling (HSE): Recharge of Havant Thicket from recycled water from Budds Farm (60Ml/d)	Operation	Water Reliability	Option will facilitate water supply once operational, via Recharge of Havant Thicket Res with Recycled water from Budds Farm WwTW and a new Water Recycling Plant located near Portsmouth. Capacity of 60Ml/d.	N/A	Significant Positive
Hants Winchester (HWZ)	Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	Operation	Water reliability	The scheme will improve water transfer across regions, improving water resource management and resilience of supply.	N/A	Significant Positive
Hants Southampton East (HSE)	Bulk import (HSE): Havant Thicket Reservoir to Otterbourne WSW (90Ml/d)	Operation	Water Reliability	This option conveys water along a new pipeline, with a capacity of 90Ml/d, therefore there will be a transfer of water to an area of deficit without requiring abstraction (in either direction).	N/A	Significant Positive
Hants Southampton West (HSW)	Drought option - supply side (HSW): River Test (80Ml/d)	Operation	Water Reliability	The scheme will deliver over 50 Ml/d of water during drought periods and maintaining resilience of supply.	N/A	Significant Positive
Hants Southampton West (HSW)	Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	Operation	Water Reliability	The option will increase transfer capacity, therefore improving resilience of supplies. The Proposed Scheme will have a beneficial impact during operation on the River Itchen, River Test and the wider catchment especially during times of drought. Reduction of abstraction allowing a more natural flow regime will have a beneficial effect to surrounding habitats and species.	Best practice mitigation measures likely to be implemented during construction.	Significant Positive
Hants Winchester (HWZ) & Hants Southampton East (HSE)	Interzonal transfer (HSE-HWZ): Otterbourne WSW to Yew Hill bi-directional (74Ml/d)	Operation	Water Reliability	The option will increase transfers within the region therefore increasing resilience through provision of a yield of 62.2Ml/d.	N/A	Significant Positive
Hants Southampton East (HSE)	Drought option - supply side (HSE): Lower	Operation	Health & Wellbeing	The drought permit would provide additional yield, helping to maintain essential public water supplies during drought conditions, and will therefore help	N/A	Significant Positive

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
	Itchen			maintain public health and well being. Due to the volume of water involved, this has been assessed as having a major positive effect. There are no community facilities within 500m. The option is located within IMD decile 8.		
Isle of Wight (IOW)	Drought option - supply side (IOW): Caul Bourne (1.5Ml/d)	Operation	Biodiversity	The following SSSI is located within 1km of the option: Calbourne Down (<0.1km, 20% favourable, 60% unfavourable – recovering, 20% not recorded. The option would also be situated within the SSSI Impact Risk Zone associated with Calbourne Down SSSI, including areas where all planning applications, and any discharge of water or liquid waste that is discharged to ground (i.e. to seep away) or to surface water, such as a beck or stream, are highlighted as being a risk to the sensitive features for which the SSSI is notified. The Isle Of Wight SAC is within 2000m of the option. No adverse effects on National Nature Reserves are expected. There is not anticipated to be any construction associated with this option. Removing a statutory Minimum Residual Flow to enable increased abstraction during extreme drought when water resources and riverine ecosystems may already be under severe stress may have irreversible impacts on local ecosystems. The option would not cross or be situated immediately adjacent to any areas of Ancient woodland, although there are priority habitats and woodland within close proximity which may be affected by increased abstraction. There are no likely impacts on GWDTE or chalk rivers. The HRA Appropriate Assessment, reported in the Drought Plan SEA, identified potential adverse impacts on the Solent Maritime SAC, Solent and Southampton Water SPA and Ramsar. The Drought Permit has the potential to affect the Newtown estuary component of these European sites only, and specifically the Shalfleet Creek system of the estuary which receives freshwater flow inputs from the Caul Bourne river. Flows in the Caul Bourne may be reduced as a	Further assessments required to establish potential impacts from reduction/removal of MRF. Monitor groundwater levels. Uncertainty will be addressed through a Monitoring and Mitigation Package.	Significant Negative Uncertain Effect

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				consequence of the Drought Permit, leading to a change in the freshwater flows to the Shalfleet Creek. Uncertainty in these conclusions will be addressed through a Monitoring and Mitigation Package being developed in consultation with Natural England and Environment Agency. Minor impacts are considered likely to Yarmouth to Cowes Marine Conservation Zone. The drought permit only involves an increase in groundwater abstraction and a reduction in flow in the Caul Bourne. The drought permit is therefore not anticipated to increase the spread of aquatic invasive non-native species.		
Hants Southampton East (HSE)	Drought option - supply side (HSE): Candover (22Ml/d)	Operation	Biodiversity	The option crosses the River Itchen SSSI (5% favourable, 15% unfavourable - recovering, 10% unfavourable - no change, 10% unfavourable – declining, 15% partially destroyed, 45% not recorded) and River Itchen SAC, both are GWDTE. The River Itchen is also a chalk river. There is potential for construction of a temporary pipeline on these sites as well as operational effects due to abstraction and discharges into the River Itchen. The option would cross SSSI Impact Risk Zones associated with the River Itchen SSSI, including areas where pipeline development and discharges to ground or surface water are highlighted as being a risk to the sensitive features for which the SSSI is notified. The option is not expected to have any adverse effects on National Nature Reserves or Marine Conservation Zones. There are priority habitats and woodland within 500m and Ancient Woodland within 2000m, however they are not likely to be affected by the option. The temporary pipeline associated with the option passes through woodland including deciduous woodland Priority Habitat and other Priority Habitats including coastal and floodplain grazing marsh and lowland fens, therefore potential for direct effects during construction.	Best practice methods to be implemented to minimise disturbance effects and habitat loss including refining pipeline alignment to avoid direct impacts on designated sites and loss of woodland habitat, in particular Ancient Woodland. Habitat to be reinstated on completion, or if unavoidable compensatory habitat to be considered to replace damaged or lost habitat. Future design will need to undertake ecology surveys. Construction works will follow best practice guidelines, construction dust could be mitigated through wet cutting/crushing and vacuum drilling, upgrading plant to minimise particulate production could be implemented. The Environmental Assessment of the Candover Augmentation Scheme Drought Order (2025) reports that a programme of mitigation and monitoring has been agreed with the Environment Agency and Natural England for the Drought Order as part of the Section 20 Agreement. Appendix D of the Environmental Assessment identifies mitigation measures to improve the resilience of habitats and species that	Significant Negative Uncertain

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				The HRA Report of the Revised draft Drought Plan 2022 (2025) considers the results of HRA Appropriate Assessment for the Candover Augmentation Scheme Drought Order, which concluded that water-sensitive habitats/species that could be adversely affected by the Drought Order implementation were the chalk stream habitat, Southern damselfly and White-clawed crayfish. There is also a potential impact on the populations in Candover Brook, where breeding populations have been recorded. Overall, it was considered that, based on available evidence, adverse effects cannot be ruled out on the conservation objectives of certain qualifying features of the River Itchen SAC and therefore on overall site integrity. The HRA Appropriate Assessment concluded that an adverse effect on the site integrity of the River Itchen SAC due to implementation of this option could not be ruled out. This conclusion, and the consequent need to provide compensation measures under the Habitats Directive, is therefore reflected in the assignment of a major adverse residual effect for this option. A programme of mitigation and monitoring has been agreed with the Environment Agency and Natural England for the Drought Order as part of the Section 20 Agreement The drought order is not considered to favour the propagation or dispersal of any known non-native invasive species (INNS) present within the hydrological zone of influence.	would potentially be impacted by operation of the drought order option. Potential generic mitigation measures are also proposed to address adverse effects of the drought order, including temporary reduction or cessation of the terms of the drought order; fish distress monitoring and response plan; and protection of 'spate flows' following periods of heavy rain to flush sediment/pollutants from the system or promote fish passage.	
Hants Southampton East (HSE)	Drought option - supply side (HSE): Lower Itchen	Operation	Biodiversity	The option would be situated partially within the River Itchen SSSI (5% favourable, 15% unfavourable – recovering, 10% unfavourable – no change, 10% unfavourable – declining, 15% partially destroyed, 45% not recorded) and SAC site, both of which are GWDTE, therefore impacts from abstraction have the potential to occur during the operational phase. The River Itchen is also a chalk river therefore potential for impacts from surface water abstraction, however this will depend on exact location of the abstraction point. The option would also be situated within SSSI Impact Risk Zones associated with the River Itchen SSSI, including areas where all planning applications (except	Monitor groundwater and river levels and implement measures to reduce impacts on ecology, however residual effects likely to remain during operation. The Environmental Assessment of the Lower Itchen Drought Order (2025) reports that a programme of mitigation and monitoring has been agreed with the Environment Agency and Natural England for the Drought Order as part of the Section 20 Agreement. A Lower Itchen Drought Order Mitigation Package has been prepared consisting of a	Significant Negative Uncertain

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				householder) outside or extending outside existing settlements/urban areas affecting greenspace, farmland, semi natural habitats or landscape features such as trees, hedges, streams, rural buildings/structures, and any discharge of water or liquid waste that is discharged to ground (i.e. to seep away) or to surface water, such as a beck or stream have been highlighted as being a risk to the sensitive features for which the SSSI has been notified. There are no National Nature Reserves within 1km of the option. The option is unlikely to have any effect on Marine Conservation Zones. There are areas of Ancient Woodland in the vicinity of the option, although as the exact location it is unknown whether the option would cross or lie immediately adjacent to these. Therefore, it is concluded that there may be an adverse effect on Ancient Woodlands during construction of the option, although this is likely mitigable. The HRA Report for the Revised Southern Water Drought Plan 2022 (2025) considers the results of HRA Appropriate Assessment for the Lower Itchen Drought Order, which concluded that an adverse effect on the site integrity of the River Itchen SAC due to implementation of this option could not be ruled out. This conclusion, and the consequent need to provide compensation measures under the Habitats Directive, is therefore reflected in the assignment of a major adverse residual effect for this option. Specific measures to mitigate adverse effects have been identified in the Lower Itchen Drought Order Mitigation Package.	package of in-river restoration and mitigation measures for the Itchen, including a programme of measures aimed at increasing the resilience of the Itchen valley Southern damselfly population, and catchment-wide work, aimed at addressing wider catchment pressures so as to increase resilience to synergistic and compounding effects. Potential generic mitigation measures are also proposed to address adverse effects of the drought order, including temporary reduction or cessation of the terms of the drought order; fish distress monitoring and response plan; and protection of 'spate flows' following periods of heavy rain to flush sediment/pollutants from the system or promote fish passage.	
Kent Medway East (KME)	Desalination (KME): Isle of Sheppey (10Ml/d) phase 2	Operation	Biodiversity	The option passes through the Medway and Estuary Marshes SSSI (21.74% in favourable condition, 13.04% in unfavourable – recovering condition, 39.13% in unfavourable – declining condition, 26.09% not recorded). There is potential for direct impacts from construction and operation on Medway and Estuary Marshes SSSI and the Medway Estuary & Marshes SPA/RAMSAR. There is potential operational impacts associated with brine outfall.	Best practice mitigation to minimise impacts and reinstatement /compensation of habitats, but potential for residual direct and indirect effects remain for designated sites. Future design will need to undertake ecology surveys. Ancient woodland could be avoided through detailed route design. The HRA AA (2025) concludes that	Significant Negative Uncertain

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				The option is also adjacent to The Swale SSSI (52.27% in favourable condition, 2.27% in unfavourable – recovering condition, 6.82% in unfavourable – no change, 6.82% in unfavourable – declining condition, 31.82% not recorded). The option would also cross the SSSI Impact Risk Zone associated with the South Thames Estuary and Marshes SSSI (19.35% Favourable condition, 9.68% Unfavourable – Declining condition, 70.97% not recorded), including an area where infrastructure (pipeline) development is highlighted as being a risk to the sensitive features for which the SSSI is notified. The option would also cross the Impact Risk Zone for Queendown Warren SSSI and Spot Lane Quarry SSSI however, the type of development proposed as part of the option is not considered to be a risk to the sensitive features for which the SSSIs are notified in the area of the SSSI Impact Risk Zone(s) which the option is located crosses. There is potential for indirect impact on The Swale SPA/RAMSAR and Thames Estuary & Marshes SPA/RAMSAR, Outer Thames Estuary SPA and South Thames Estuary and Marshes SSSI. The option is located within the following MCZs: Medway Estuary - Zone 1 MCZ and The Swale Estuary MCZ. There is potential for effects on the protected features of the Medway Estuary MCZ in construction and operation. In construction the intake/outfall could directly affect the MCZ. In operation, saline plumes from outfall location could have impacts on the protected features. With regards to the Swale Estuary MCZ, pipeline construction will likely follow existing roads reducing potential for effects on the protected features and in operation discharge of brine will be to the Medway which reduces likelihood of exposure to this MCZ. The option would be located 0.40km from the Elmley NNR. There is potential for indirect effects from the construction phase on these sites through noise, dust and vibration causing disturbance.	construction effects are avoidable with normal measures.	

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				The option (pipeline to Deans Hill) would cross one area of Ancient Woodland. There are potential impacts on these due to construction including potential loss/physical damage, noise and vibration, disturbance, dust emissions and habitat destruction. The risk of INNS is considered to be low as there is potential for pipe bursts cause water to be released to the environment (creating pathway for the transfer of INNS). The HRA screening (2025) screens in the following sites for both construction and operational effects: • The Swale SPA • Medway Estuary and Marshes SPA • Medway Estuary and Marshes Ramsar • The Swale Ramsar • Thames Estuary and Marshes Ramsar • Thames Estuary and Marshes SPA • Outer Thames Estuary SPA The screening concludes that environmental changes associated with construction can be reliably avoided with project-level mitigation (applied at AA); with regard to operation, the principal pathways for operational effects will be through environmental changes at the intake and outfall, which may affect downstream sites or sites supporting mobile species. The HRA AA (2025) concludes that, for Medway Estuary and Marshes Ramsar/SPA, Outer Thames Estuary SPA, and Thames Estuary and Marshes Ramsar/SPA, adverse effects likely avoidable based on proxy data and evidence from similar sites / schemes, although there are residual uncertainties that cannot be resolved at the plan level. The operation of the scheme may affect the supporting habitats of the qualifying features, although evidence from elsewhere indicates that the zone of environmental change will be small (a would be expected to extend to the site), and could be minimised further by appropriate location of the outfall (taking account of local hydrodynamics) and operational practice. Construction effects are		

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				avoidable with normal measures. The HRA AA (2025) concludes that The Swale will have a low exposure to operational effects due to its location relative to the outfall, and adverse effects on the site habitats would not be expected; the mobile features of the site may be exposed to operational effects when utilising the Medway Estuary and Marshes SPA/Ramsar, depending on the precise location and operational parameters of the outfall / intake; however, this can be located further from these sites if required, and operation of the desal plant would be intermittent and operational parameters could be defined to minimise environmental changes further. With regard to construction, adverse effects on the Swale habitats or species can be avoided with established measures. Overall, the HRA 2025 concludes potential effects during operation.		
Kent Medway East (KME)	Desalination (KME): Isle of Sheppey 20Ml/d	Operation	Biodiversity	The option passes through the Medway and Estuary Marshes SSSI (21.74% in favourable condition, 13.04% in unfavourable – recovering condition, 39.13% in unfavourable – declining condition, 26.09% not recorded). There is potential for direct impacts from construction and operation on Medway and Estuary Marshes SSSI and the Medway Estuary & Marshes SPA/RAMSAR. There is potential operational impacts associated with brine outfall. The option is also adjacent to The Swale SSSI (52.27% in favourable condition, 2.27% in unfavourable – recovering condition, 6.82% in unfavourable – no change, 6.82% in unfavourable – declining condition, 31.82% not recorded). The option would also cross the SSSI Impact Risk Zone associated with the South Thames Estuary and Marshes SSSI (19.35% Favourable condition, 9.68% Unfavourable – Declining condition, 70.97% not recorded), including an area where infrastructure (pipeline) development is highlighted as being a risk to the sensitive features for which the SSSI is notified. The option would also cross the Impact Risk Zone for Queendown Warren SSSI and Spot Lane Quarry SSSI	Best practice mitigation to minimise impacts and reinstatement /compensation of habitats, but potential for residual direct and indirect effects remain for designated sites. Future design will need to undertake ecology surveys. Ancient woodland could be avoided through detailed route design. The HRA AA (2025) concludes that construction effects are avoidable with normal measures.	Significant Negative Uncertain

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				however, the type of development proposed as part of the option is not considered to be a risk to the sensitive features for which the SSSIs are notified in the area of the SSSI Impact Risk Zone(s) which the option is located crosses. There is potential for indirect impact on The Swale SPA/RAMSAR and Thames Estuary & Marshes SPA/RAMSAR, Outer Thames Estuary SPA and South Thames Estuary and Marshes SSSI. The option is located within the following MCZs: Medway Estuary - Zone 1 MCZ and The Swale Estuary MCZ. There is potential for effects on the protected features of the Medway Estuary MCZ in construction and operation. In construction the intake/outfall could directly affect the MCZ. In operation, saline plumes from outfall location could have impacts on the protected features. With regards to the Swale Estuary MCZ, pipeline construction will likely follow existing roads reducing potential for effects on the protected features and in operation discharge of brine will be to the Medway which reduces likelihood of exposure to this MCZ. The option would be located 0.40km from the Elmley NNR. There is potential for indirect effects from the construction phase on these sites through noise, dust and vibration causing disturbance. The option (pipeline to Deans Hill) would cross one area of Ancient Woodland. There are potential impacts on these due to construction including potential loss/physical damage, noise and vibration, disturbance, dust emissions and habitat destruction. The HRA screening (2025) screens in the following sites for both construction and operational effects: • The Swale SPA • Medway Estuary and Marshes SPA • Medway Estuary and Marshes Ramsar • The Swale Ramsar • Thames Estuary and Marshes Ramsar • Thames Estuary and Marshes SPA		

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				• Outer Thames Estuary SPA The screening concludes that environmental changes associated with construction can be reliably avoided with project-level mitigation (applied at AA); with regard to operation, the principal pathways for operational effects will be through environmental changes at the intake and outfall, which may affect downstream sites or sites supporting mobile species. The HRA AA (2025) concludes that, for Medway Estuary and Marshes Ramsar/SPA, Outer Thames Estuary SPA, and Thames Estuary and Marshes Ramsar/SPA, adverse effects likely avoidable based on proxy data and evidence from similar sites / schemes, although there are residual uncertainties that cannot be resolved at the plan level. The operation of the scheme may affect the supporting habitats of the qualifying features, although evidence from elsewhere indicates that the zone of environmental change will be small (a would be expected to extend to the site), and could be minimised further by appropriate location of the outfall (taking account of local hydrodynamics) and operational practice. Construction effects are avoidable with normal measures. The HRA AA (2025) concludes that The Swale will have a low exposure to operational effects due to its location relative to the outfall, and adverse effects on the site habitats would not be expected; the mobile features of the site may be exposed to operational effects when utilising the Medway Estuary and Marshes SPA/Ramsar, depending on the precise location and operational parameters of the outfall / intake; however, this can be located further from these sites if required, and operation of the desal plant would be intermittent and operational parameters could be defined to minimise environmental changes further. With regard to construction, adverse effects on the Swale habitats or species can be avoided with established measures. Overall, the HRA 2025 concludes potential effects during operation.		

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
Kent Medway West (KMW)	Desalination (KMW): Thames Estuary (10Ml/d)	Operation	Biodiversity	The option crosses the Swanscombe Peninsula SSSI (91.67% favourable, 8.33% unfavourable – no change), with potential for some loss, and the following SSSI is located within 1km of the option: Swanscombe Skull Site (0.88km, 100% favourable). The option would also cross SSSI Impact Risk Zones associated with the Swanscombe Peninsula, Swanscombe Skull Site, and Shorne and Ashenbank Woods SSSI's, including areas where all planning applications, including pipeline development and discharge of water to ground or to surface water are highlighted as being a risk to the sensitive features for which the SSSI's are notified. The following NNR is located within 1km of the option: Swanscombe Skull Site (0.89km). There is potential for indirect effects from the construction phase on these sites through noise, dust and vibration causing disturbance during construction. The desalination plant and discharge point would be located 0.59km from the Swanscombe Marine Conservation Zone, and pipeline construction would take place 0.77km from the MCZ at its closest point. Indirect effects during construction are possible, through dust, noise and vibration, although these are likely mitigable with best practice measures. The discharge is unlikely to have an adverse effect on the MCZ during operation as it would be located downstream. The discharge would be, however, upstream from the Thames Estuary & Marshes Ramsar and SPA, which overlap with the Medway Estuary – Zone 1 MCZ. Construction effects are likely to be limited but mobile features may be vulnerable to disturbance. Operational effects are unlikely due to the distance downstream from the discharge, however additional information or plume investigations will be needed. The option intersects woodland and priority habitat, though it does not cross, or run adjacent to, any Ancient Woodlands. There is potential for direct loss of priority habitat from the construction of the desalination plant. There are no anticipated impacts on chalk rivers or GWDTE. Potential impacts from operation, as highly saline discharge from plant may have negative impacts on marine ecosystems.	Best practice mitigation to minimise impacts and reinstatement /compensation of habitats, but potential for residual direct and indirect effects remain for designated sites. Future design will need to undertake ecology surveys. The HRA AA (2025) for the Thames Estuary and Marshes SPA/Ramsar notes that construction effects are avoidable with normal measures. In the operational phase, appropriate mitigation measures are available at the project level and can be implemented to enable a conclusion of no adverse effect. Detailed mitigation measures are outlined in Appendix E8 of the HRA report.	Significant Negative Uncertain

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				The risk of transfer / spread of INNS is low. The HRA screening (2025) screened in the Thames Estuary and Marshes SPA/Ramsar for both construction and operational effects. Environmental changes associated with construction can be reliably avoided with project-level mitigation (applied at AA); with regard to operation, the principal pathways for operational effects will be through environmental changes at the intake (no European sites / features likely to be exposed here) and the outfall which would combine discharge with Swanscombe WwTW's existing outfall (where brine from the desalination process will be discharged; may affect downstream sites). The AA notes that based on the predicted effect of this option both alone and in-combination with other plans and projects, there is sufficient confidence that appropriate mitigation measures are available at the project level and can be implemented to enable a conclusion of no adverse effect on the integrity of the Thames Estuary and Marshes SPA/Ramsar to be drawn for the WRMP HRA.		
Kent Medway West (KMW)	Desalination (KMW): Thames Estuary (10Ml/d) Phase 2	Operation	Biodiversity	The option crosses the Swanscombe Peninsula SSSI (91.67% favourable, 8.33% unfavourable – no change), with potential for some loss, and the following SSSI is located within 1km of the option: Swanscombe Skull Site (0.88km, 100% favourable). The option would also cross SSSI Impact Risk Zones associated with the Swanscombe Peninsula, Swanscombe Skull Site, and Shorne and Ashenbank Woods SSSI's, including areas where all planning applications, including pipeline development and discharge of water to ground or to surface water are highlighted as being a risk to the sensitive features for which the SSSI's are notified. The following NNR is located within 1km of the option: Swanscombe Skull Site (0.89km). There is potential for indirect effects from the construction phase on these sites through noise, dust and vibration causing disturbance during construction. The desalination plant and discharge point would be located 0.59km from the Swanscombe Marine	Best practice mitigation to minimise impacts and reinstatement /compensation of habitats, but potential for residual direct and indirect effects remain for designated sites. Future design will need to undertake ecology surveys. The HRA AA (2025) for the Thames Estuary and Marshes SPA/Ramsar notes that construction effects are avoidable with normal measures. In the operational phase, appropriate mitigation measures are available at the project level and can be implemented to enable a conclusion of no adverse effect. Detailed mitigation measures are outlined in Appendix E8 of the HRA report.	Significant Negative Uncertain

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				Conservation Zone, and pipeline construction would take place 0.77km from the MCZ at its closest point. Indirect effects during construction are possible, through dust, noise and vibration, although these are likely mitigable with best practice measures. The discharge is unlikely to have an adverse effect on the MCZ during operation as it would be located downstream. The discharge would be, however, upstream from the Thames Estuary & Marshes Ramsar and SPA, which overlap with the Medway Estuary – Zone 1 MCZ. Construction effects are likely to be limited but mobile features may be vulnerable to disturbance. Operational effects are unlikely due to the distance downstream from the discharge, however additional information or plume investigations will be needed. The option intersects woodland and priority habitat, though it does not cross, or run adjacent to, any Ancient Woodlands. There is potential for direct loss of priority habitat from the construction of the desalination plant. There are no anticipated impacts on chalk rivers or GWDTE. Potential impacts from operation, as highly saline discharge from plant may have negative impacts on marine ecosystems. The risk of transfer / spread of INNS is low. The HRA screening (2025) screened in the Thames Estuary and Marshes SPA/Ramsar for both construction and operational effects. Environmental changes associated with construction can be reliably avoided with project-level mitigation (applied at AA); with regard to operation, the principal pathways for operational effects will be through environmental changes at the intake (no European sites / features likely to be exposed here) and the outfall which would combine discharge with Swanscombe WwTW's existing outfall (where brine from the desalination process will be discharged; may affect downstream sites). The AA notes that based on the predicted effect of this option both alone and in-combination with other plans		

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				and projects, there is sufficient confidence that appropriate mitigation measures are available at the project level and can be implemented to enable a conclusion of no adverse effect on the integrity of the Thames Estuary and Marshes SPA/Ramsar to be drawn for the WRMP HRA.		
Kent Medway West (KMW)	Desalination (KMW): Thames Estuary (20Ml/d)	Operation	Biodiversity	The option crosses the Swanscombe Peninsula SSSI (91.67% favourable, 8.33% unfavourable – no change), with potential for some loss, and the following SSSI is located within 1km of the option: Swanscombe Skull Site (0.88km, 100% favourable). The option would also cross SSSI Impact Risk Zones associated with the Swanscombe Peninsula, Swanscombe Skull Site, and Shorne and Ashenbank Woods SSSI's, including areas where all planning applications, including pipeline development and discharge of water to ground or to surface water are highlighted as being a risk to the sensitive features for which the SSSI's are notified. The following NNR is located within 1km of the option: Swanscombe Skull Site (0.89km). There is potential for indirect effects from the construction phase on these sites through noise, dust and vibration causing disturbance during construction. The desalination plant and discharge point would be located 0.59km from the Swanscombe Marine Conservation Zone, and pipeline construction would take place 0.77km from the MCZ at its closest point. Indirect effects during construction are possible, through dust, noise and vibration, although these are likely mitigable with best practice measures. The discharge is unlikely to have an adverse effect on the MCZ during operation as it would be located downstream. The discharge would be, however, upstream from the Thames Estuary & Marshes Ramsar and SPA, which overlap with the Medway Estuary – Zone 1 MCZ. Construction effects are likely to be limited but mobile features may be vulnerable to disturbance. Operational effects are unlikely due to the distance downstream from the discharge, however additional information or plume investigations will be needed. The option intersects woodland and priority habitat, though it does not cross, or run adjacent to, any	Best practice mitigation to minimise impacts and reinstatement /compensation of habitats, but potential for residual direct and indirect effects remain for designated sites. Future design will need to undertake ecology surveys. The HRA AA (2025) for the Thames Estuary and Marshes SPA/Ramsar notes that construction effects are avoidable with normal measures. In the operational phase, appropriate mitigation measures are available at the project level and can be implemented to enable a conclusion of no adverse effect. Detailed mitigation measures are outlined in Appendix E8 of the HRA report.	Significant Negative Uncertain

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				Ancient Woodlands. There is potential for direct loss of priority habitat from the construction of the desalination plant. There are no anticipated impacts on chalk rivers or GWDTE. Potential impacts from operation, as highly saline discharge from plant may have negative impacts on marine ecosystems. The risk of transfer / spread of INNS is low. The HRA screening (2025) screened in the Thames Estuary and Marshes SPA/Ramsar for both construction and operational effects. Environmental changes associated with construction can be reliably avoided with project-level mitigation (applied at AA); with regard to operation, the principal pathways for operational effects will be through environmental changes at the intake (no European sites / features likely to be exposed here) and the outfall which would combine discharge with Swanscombe WwTW's existing outfall (where brine from the desalination process will be discharged; may affect downstream sites). The AA notes that based on the predicted effect of this option both alone and in-combination with other plans and projects, there is sufficient confidence that appropriate mitigation measures are available at the project level and can be implemented to enable a conclusion of no adverse effect on the integrity of the Thames Estuary and Marshes SPA/Ramsar to be drawn for the WRMP HRA.		
Kent Medway West (KMW)	Desalination (KMW): Thames Estuary (20Ml/d) Phase 2	Operation	Biodiversity	The option crosses the Swanscombe Peninsula SSSI (91.67% favourable, 8.33% unfavourable – no change), with potential for some loss, and the following SSSI is located within 1km of the option: Swanscombe Skull Site (0.88km, 100% favourable). The option would also cross SSSI Impact Risk Zones associated with the Swanscombe Peninsula, Swanscombe Skull Site, and Shorne and Ashenbank Woods SSSI's, including areas where all planning applications, including pipeline development and discharge of water to ground or to surface water are highlighted as being a risk to the sensitive features for which the SSSI's are notified. The following NNR is located within 1km of the option: Swanscombe Skull Site (0.89km). There is	Best practice mitigation to minimise impacts and reinstatement /compensation of habitats, but potential for residual direct and indirect effects remain for designated sites. Future design will need to undertake ecology surveys. The HRA AA (2025) for the Thames Estuary and Marshes SPA/Ramsar notes that construction effects are avoidable with normal measures. In the operational phase, appropriate mitigation measures are available at the project	Significant Negative Uncertain

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				potential for indirect effects from the construction phase on these sites through noise, dust and vibration causing disturbance during construction. The desalination plant and discharge point would be located 0.59km from the Swanscombe Marine Conservation Zone, and pipeline construction would take place 0.77km from the MCZ at its closest point. Indirect effects during construction are possible, through dust, noise and vibration, although these are likely mitigable with best practice measures. The discharge is unlikely to have an adverse effect on the MCZ during operation as it would be located downstream. The discharge would be, however, upstream from the Thames Estuary & Marshes Ramsar and SPA, which overlap with the Medway Estuary – Zone 1 MCZ. Construction effects are likely to be limited but mobile features may be vulnerable to disturbance. Operational effects are unlikely due to the distance downstream from the discharge, however additional information or plume investigations will be needed. The option intersects woodland and priority habitat, though it does not cross, or run adjacent to, any Ancient Woodlands. There is potential for direct loss of priority habitat from the construction of the desalination plant. There are no anticipated impacts on chalk rivers or GWDTE. Potential impacts from operation, as highly saline discharge from plant may have negative impacts on marine ecosystems. The risk of transfer / spread of INNS is low. The HRA screening (2025) screened in the Thames Estuary and Marshes SPA/Ramsar for both construction and operational effects. Environmental changes associated with construction can be reliably avoided with project-level mitigation (applied at AA); with regard to operation, the principal pathways for operational effects will be through environmental changes at the intake (no European sites / features likely to be exposed here) and the outfall which would combine discharge with Swanscombe WwTW's existing outfall (where brine from the desalination	level and can be implemented to enable a conclusion of no adverse effect. Detailed mitigation measures are outlined in Appendix E8 of the HRA report.	

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				process will be discharged; may affect downstream sites). The AA notes that based on the predicted effect of this option both alone and in-combination with other plans and projects, there is sufficient confidence that appropriate mitigation measures are available at the project level and can be implemented to enable a conclusion of no adverse effect on the integrity of the Thames Estuary and Marshes SPA/Ramsar to be drawn for the WRMP HRA.		
Kent Thanet (KTZ)	Desalination (KTZ): East Thanet (20Ml/d)	Construction and Operation	Biodiversity	The intake/outfall is located within the Thanet Coast SSSI (45.83% favourable condition, 16.67% in unfavourable – declining condition, 37.50% not recorded). The designated features of the SSSI are sensitive to possible effects during construction of the pipeline in terms of disturbance to shingle within the foreshore (and potentially bird assemblages will be sensitive to disturbance). The pipeline to Fleete Manston WSR will also cross SSSI Impact Risk Zones associated with Sandwich Bay to Hacklinge Marshes SSSI where any discharge of water or liquid waste of more than 20m³/day to ground (i.e. to seep away) or to surface water, such as a beck or stream, is highlighted as a risk to the sensitive features for which the SSSI is notified. The intake/outfall passes through the Thanet Coast MCZ. The MCZ has an area of subtidal chalk that extends seawards from chalk reefs, cliffs and coves. There is potential for direct and indirect effects (via disturbance) on site habitats depending on the construction approach. In operation, the outfall extends 3.36km north of the MCZ although there is potential for impacts from hypersaline discharge. Low risk of transfer of INNS as the water will be treated by desalination after abstraction and is likely to be entirely free of INNS. Construction phase risk of INNS is considered to be low. The HRA screening (2025) screens in Thanet Coast and Sandwich Bay SPA/Ramsar, Outer Thames Estuary SPA, Thanet Coast SAC, and Margate and	Ensure best practicable means to prevent loss of habitat during construction, reinstate habitat on completion or if unavoidable consider compensatory habitat to replace damaged or lost habitat. The findings of the HRA AA (2025) are outlined in the comments column. Uncertain effects are identified for Outer Thames Estuary SPA and Margate and Long Sands SAC, relating to the introduction of hypersaline discharge, are considered to be mitigatable. Detailed mitigation measures are outlined in Appendix E6 of the HRA report.	Significant Negative Uncertain

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				Long Sands SAC for both construction and operational effects, and also screens in Stodmarsh SPA for construction only. This option proposes an initial 20Ml/d desalination plant (with a second 20Ml/d module added in Phase 2) located on the north coast of Thanet (new offshore intake / outfall required), and a new terrestrial pipeline to supply potable desalinated water to the Kent Thanet WRZ. Environmental changes associated with onshore construction can be reliably avoided with project-level mitigation (applied at AA); however, the outfall will require construction in the marine environment close to or within European sites (direct effects possible). With regard to operation, the principal pathways for operational effects will be through environmental changes at the intake (no European sites / features likely to be exposed here) and the outfall (where brine from the desalination process will be discharged; may affect offshore sites or features). The HRA AA (2025) reports the following conclusions: Thanet Coast and Sandwich Bay SPA and Ramsar: Adverse effects alone will not occur (construction effects clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective i.e. it will be possible to avoid direct effects on this site with directional drill or similar, and other construction effects can be managed/avoided)); operational effects will not occur, based on the likely distance to the outfall location and consequent low exposure / sensitivity of qualifying features or supporting habitats to the likely magnitude of environmental change; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects. Outer Thames Estuary SPA: Adverse effects almost certainly avoidable based on proxy data and evidence from similar sites / schemes, although there are residual uncertainties that cannot be resolved at the plan level. In summary, the outfall for the plant will be located in this site. The qualifying features of the site may be vulnerable to construction disturbance (although this is clearly avoidable with normal		

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				measures) or through impacts on the supporting habitats (i.e. sandbanks over which they forage). However, the sandbank supporting habitats are likely to have a low sensitivity to both construction and operation, being essentially low-diversity highly-mobile sandbank habitats that will be resilient to short-term perturbance associated with construction; the environmental changes associated with operation effects are likely to be limited in spatial extent (based on other desalination schemes), and the features will have a low sensitivity to this. The extent of any effects will also be very small (arguably inconsequential) in relation to the size of the site. There are inevitably some uncertainties due to the long timescales that can only be resolved with detailed design (e.g. sediment deposition and hydrodynamics may be affected if the pipeline is not buried), but these appear avoidable or mitigatable, such that adverse effects on integrity do not appear to be an unavoidable outcome of the option. Thanet Coast SAC: Adverse effects alone will not occur (construction effects clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective i.e. it will be possible to avoid direct effects on this site with directional drill or similar, and other construction effects can be managed/avoided); operational effects will not occur, based on the likely distance to the outfall location; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects. Margate and Long Sands SAC: Adverse effects almost certainly avoidable based on proxy data and evidence from similar sites / schemes, although there are residual uncertainties that cannot be resolved at the plan level. In summary, the outfall for the plant is likely to be located in or close to this site (although location outside the site will be possible). The interest features of the site are likely to have a low sensitivity to both construction and operation, being essentially low-diversity highly-mobile sandbank habitats that will be resilient to short-term perturbance associated with construction; the environmental changes associated with operation effects are likely to be limited in spatial		

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				extent (based on other desalination schemes), and the features will have a low sensitivity to this. There are inevitably some uncertainties due that can only be resolved with detailed design (e.g. sediment deposition and hydrodynamics may be affected if the pipeline is not buried), but these appear avoidable or mitigatable, such that adverse effects on integrity do not appear to be an unavoidable outcome of the option. Stodmarsh SPA: Adverse effects alone will not occur; qualifying features of the SPA will not make substantive use of the coastal habitats of the Thanet Coast and Sandwich Bay SPA/Ramsar based on typical habitat preferences; some of the terrestrial wetland habitats near Birchington (hence potentially affected by the transfer to Fleete) may be periodically used by species associated with Stodmarsh, but these areas are unlikely to be critical to the functional integrity of Stodmarsh SPA and effects will be temporary during construction and avoidable with established measures (e.g. timing works). Residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects. Given the residual uncertainty in relation to Outer Thames Estuary SPA and Margate and Long Sands SAC significant effects with uncertainty are identified for the operation phase.		
Kent Thanet (KTZ)	Desalination (KTZ): East Thanet (20Ml/d) Phase 2	Operation	Biodiversity	The intake/outfall is located within the Thanet Coast SSSI (45.83% favourable condition, 16.67% in unfavourable – declining condition, 37.50% not recorded). The designated features of the SSSI are sensitive to possible effects during construction of the pipeline in terms of disturbance to shingle within the foreshore (and potentially bird assemblages will be sensitive to disturbance). The pipeline to Fleete Manston WSR will also cross SSSI Impact Risk Zones associated with Sandwich Bay to Hacklinge Marshes SSSI where any discharge of water or liquid waste of more than 20m³/day to ground (i.e. to seep away) or to surface water, such as a beck or stream, is highlighted as a risk to the sensitive features for which the SSSI is notified.	Ensure best practicable means to prevent loss of habitat during construction, reinstate habitat on completion or if unavoidable consider compensatory habitat to replace damaged or lost habitat. The findings of the HRA AA (2025) are outlined in the comments column. Uncertain effects are identified for Outer Thames Estuary SPA and Margate and Long Sands SAC, relating to the introduction of hypersaline discharge, are considered to be mitigatable. Detailed mitigation measures are outlined in Appendix E6 of the HRA report.	Significant Negative Uncertain

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				The intake/outfall passes through the Thanet Coast MCZ. The MCZ has an area of subtidal chalk that extends seawards from chalk reefs, cliffs and coves. There is potential for direct and indirect effects (via disturbance) on site habitats depending on the construction approach. In operation, the outfall extends 3.36km north of the MCZ although there is potential for impacts from hypersaline discharge. Low risk of transfer of INNS as the water will be treated by desalination after abstraction and is likely to be entirely free of INNS. Construction phase risk of INNS is considered to be low. The HRA screening (2025) screens in Thanet Coast and Sandwich Bay SPA/Ramsar, Outer Thames Estuary SPA, Thanet Coast SAC, and Margate and Long Sands SAC for both construction and operational effects, and also screens in Stodmarsh SPA for construction only. This option proposes an initial 20Ml/d desalination plant (with a second 20Ml/d module added in Phase 2) located on the north coast of Thanet (new offshore intake / outfall required), and a new terrestrial pipeline to supply potable desalinated water to the Kent Thanet WRZ. Environmental changes associated with onshore construction can be reliably avoided with project-level mitigation (applied at AA); however, the outfall will require construction in the marine environment close to or within European sites (direct effects possible). With regard to operation, the principal pathways for operational effects will be through environmental changes at the intake (no European sites / features likely to be exposed here) and the outfall (where brine from the desalination process will be discharged; may affect offshore sites or features). The HRA AA (2025) reports the following conclusions: Thanet Coast and Sandwich Bay SPA and Ramsar: Adverse effects alone will not occur (construction effects clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective i.e. it will be possible to avoid direct effects on this site with directional drill or similar, and other		

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				construction effects can be managed/avoided)); operational effects will not occur, based on the likely distance to the outfall location and consequent low exposure / sensitivity of qualifying features or supporting habitats to the likely magnitude of environmental change; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects. Outer Thames Estuary SPA: Adverse effects almost certainly avoidable based on proxy data and evidence from similar sites / schemes, although there are residual uncertainties that cannot be resolved at the plan level. In summary, the outfall for the plant will be located in this site. The qualifying features of the site may be vulnerable to construction disturbance (although this is clearly avoidable with normal measures) or through impacts on the supporting habitats (i.e. sandbanks over which they forage). However, the sandbank supporting habitats are likely to have a low sensitivity to both construction and operation, being essentially low-diversity highly-mobile sandbank habitats that will be resilient to short-term perturbance associated with construction; the environmental changes associated with operation effects are likely to be limited in spatial extent (based on other desalination schemes), and the features will have a low sensitivity to this. The extent of any effects will also be very small (arguably inconsequential) in relation to the size of the site. There are inevitably some uncertainties due to the long timescales that can only be resolved with detailed design (e.g. sediment deposition and hydrodynamics may be affected if the pipeline is not buried), but these appear avoidable or mitigatable, such that adverse effects on integrity do not appear to be an unavoidable outcome of the option. Thanet Coast SAC: Adverse effects alone will not occur (construction effects clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective i.e. it will be possible to avoid direct effects on this site with directional drill or similar, and other construction effects can be managed/avoided); operational effects		

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				will not occur, based on the likely distance to the outfall location; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects. Margate and Long Sands SAC: Adverse effects almost certainly avoidable based on proxy data and evidence from similar sites / schemes, although there are residual uncertainties that cannot be resolved at the plan level. In summary, the outfall for the plant is likely to be located in or close to this site (although location outside the site will be possible). The interest features of the site are likely to have a low sensitivity to both construction and operation, being essentially low-diversity highly-mobile sandbank habitats that will be resilient to short-term perturbance associated with construction; the environmental changes associated with operation effects are likely to be limited in spatial extent (based on other desalination schemes), and the features will have a low sensitivity to this. There are inevitably some uncertainties due that can only be resolved with detailed design (e.g. sediment deposition and hydrodynamics may be affected if the pipeline is not buried), but these appear avoidable or mitigatable, such that adverse effects on integrity do not appear to be an unavoidable outcome of the option. Stodmarsh SPA: Adverse effects alone will not occur; qualifying features of the SPA will not make substantive use of the coastal habitats of the Thanet Coast and Sandwich Bay SPA/Ramsar based on typical habitat preferences; some of the terrestrial wetland habitats near Birchington (hence potentially affected by the transfer to Fleete) may be periodically used by species associated with Stodmarsh, but these areas are unlikely to be critical to the functional integrity of Stodmarsh SPA and effects will be temporary during construction and avoidable with established measures (e.g. timing works). Residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects. Given the residual uncertainty in relation to Outer Thames Estuary SPA and Margate and Long Sands SAC significant effects with uncertainty are identified for the operation phase.		

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
Sussex North (SNZ)	Drought option - supply side (SNZ): Pulborough surface water phases 1-3 (23Ml/d)	Operation	Water Quality	Given this option is only to be implemented under drought conditions when groundwater resources are vulnerable, the option may have negative impacts on resilience of the water environment. The WFD assessment (2025) of the Southern Water Drought Plan 2022 highlights that with regard to the Wester Rother river waterbody, there is a high risk of temporary deterioration in status due to impacts on some fish species and there is a high risk of impacting downstream water body (Arun). Whilst for the Arun transitional waterbody there is a medium risk of temporary deterioration in status due to impacts on fish, invertebrate and macroalgal communities. The SEA assessment (2025) of the Southern Water Drought Plan 2022 highlights that the implementation of the Drought Permit (reduction in MRF by 30Ml/d) would result in a major adverse effect on flows in the River Rother in summer and moderate adverse effects in winter. There would be associated moderate adverse impact on water quality and ecology, notably migratory fish and the Least Water Snipe Fly. As such, and in line with the conclusions of the SEA of the Drought Plan a significant negative effect has been identified during operation.	Further assessments required.	Significant Negative Effect
Kent Medway East (KME)	Groundwater (KME): Recommission Gravesend (2.7Ml/d)	Operation	Water Quality	Option intersects with SPZ I, II and III and North Kent Medway Chalk WFD Groundwater body. Abstraction capacity to be confirmed, however the recommissioning of this source has the potential to have an impact on groundwater quality and levels. The WFD assessment (2025) concludes that this option would be potentially non-compliant (with medium confidence) reflecting that the Stage 2 assessment concludes potential WFD non-compliance (with medium confidence) for the North Kent Medway Chalk groundwater body and potential WFD non-compliance (with low confidence) for the Ebbsfleet waterbody. The WFD assessment highlights that the Medway ALS (from 2013) highlights the vulnerability of the North Kent Chalk aquifer and associated abstractions to	Monitor ground water levels.	Significant Negative Effect

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				drought, and the potential influence on groundwater sources. While the RNAGs on the Catchment Data Explorer attribute the Poor status to natural conditions, from the ALS it can be presumed that abstraction contributes to the water balance failures. The ALS states a desire to "seek to secure downward variations of existing licences" from the Chalk. In addition, the ALS indicates restricted water available (Q30 only) in the Ebsfleet catchment, with similarly restricted water availability in other nearby surface water bodies, and the licence is also included in the ongoing North Kent Marshes WINEP investigation. Therefore, it may be concluded that an increase in abstraction, even within licence, would be considered to fail the water balance test and potentially dependent surface water body status. Furthermore, the WFD notes that with regard to the groundwater body, it still fails the drinking water protected area test. If the measured high nitrate levels were due to a faulty monitor, this may not be relevant to the Windmill Hill source. However, there is also potential of poor water quality from wastewater leakage in this area (pers. comm. from North Kent Marshes investigations). Further investigations will be required to confirm, and a conclusion of Non-compliant has been applied until those investigations are completed.		
Kent Medway West (KMW)	Recycling (KMW): Medway WTW to lake (14Ml/d)	Operation	Water Quality	The option intersects SPZ1 and 2 and two WFD groundwater bodies. There is potential for the water environment to be contaminated during the construction phase from leaching of contaminants. The WFD assessment (2025) concludes that this option would be potentially non-compliant (with medium confidence) reflecting that the Stage 2 assessment concludes potential WFD non-compliance (with medium confidence) for the Eccles Lake waterbody. The WFD assessment highlights that a new discharge into the reservoir could potentially change the physico-chemistry of the water body, for example by increasing nutrient concentrations, changing dissolved oxygen	Implement pollution prevention and control measures. Further WFD assessment is required therefore moderate effects remain.	Significant Negative Effect

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				concentrations, and changing water temperature. This could impact on biological status elements. Phosphate is Moderate, and there is a risk that the option could result in further deterioration, or prevent future improvements. This could, in turn, impact phytoplankton communities. The status of phytoplankton reduced from High to Good between 2015 to 2019, so there is a risk of a deteriorating trend, which could be exacerbated by the option. This is particularly a risk if the option was used during drought periods, i.e. with low water levels and high temperatures. Further assessment is therefore required to consider the final characteristics of the new discharge and ensure that water quality is not compromised. The WFD assessment also highlights that the installation of new discharge infrastructure and the increase in inflow to the lake may have a minor influence on the hydromorphology of the water body, although this may be positive if it helps to maintain water levels during dry periods, so is expected to be compliant.		
Sussex Hastings (SHZ)	Recycling (SHZ): Hastings to Darwell (15.3Ml/d)	Operation	Water Quality	The option overlies nitrate vulnerable zones, the Hastings Beds Cuckmere and Pevensey Levels, and Kent Weald Eastern - Rother WFD groundwater bodies. The option is not within SPZs. The option also intersects several surface water bodies, including main rivers, therefore there is potential for leaks and spills during construction that could contaminate the water environment. Given the option is conjunctive use, there is potential for positive effects on the water environment as it may help to reduce pressures during dry periods. The WFD assessment (2025) concludes that this option would be potentially non-compliant (with medium confidence) reflecting that the Stage 2 assessment concludes potential WFD non-compliance (with medium confidence) for the Darwell Reservoir waterbody. The WFD assessment highlights that a new discharge into the reservoir would change the physico-chemistry of the water body, for example by increasing nutrient	Best practice mitigation measures likely to be implemented during construction such as use of appropriate bedding materials, trenchless crossings and directional drilling. Further WFD assessment is required therefore moderate negative effects identified.	Significant Negative Effect

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				concentrations, changing dissolved oxygen concentrations, and changing water temperature. The water body has had previous issues due to phosphorus, as demonstrated in the 2015 status classification which for phosphorous was moderate. This could impact phytoplankton communities. This is particularly a risk if the option was used during drought periods, i.e. with low water levels and high temperatures. In addition, the discharge could introduce new or increased concentrations of chemicals in to the water body. This will require further review to determine the relative concentrations of chemicals in the discharge and receiving water. Further assessment is therefore required to consider the final characteristics of the new discharge and ensure that water quality is not compromised.		
Sussex Hastings (SHZ)	Recycling (SHZ): Tonbridge to Bewl (5.7Ml/d)	Operation	Water Quality	The option crosses multiple watercourses, including main rivers in two locations. Option crosses SPZ 3 in one location and abuts SPZ 1. The WFD Screening Assessment (2021) identified further WFD assessment is not required. The WFD assessment (2025) concludes that this option would be potentially non-compliant (with medium confidence) reflecting that the Stage 2 assessment concludes potential WFD non-compliance (with medium confidence) for the Bewl Water waterbody and potential WFD non-compliance (with low confidence) for the Mid Medway from Eden Confluence to Yalding Water Body waterbody. The WFD assessment highlights that with regard to Bewl Water a new discharge into the reservoir could potentially change the physico-chemistry of the water body, for example by increasing nutrient concentrations, changing dissolved oxygen concentrations, and changing water temperature. The water body is already at Poor status for phosphate, and the introduction of treated effluent (depending on the final discharge quality) could worsen this or prevent future improvements. This could have a resulting impact on macrophyte communities, which are currently Moderate. This is particularly a risk if the option was used during drought periods, i.e. with low water levels and high temperatures. Further	Best practice mitigation measures likely to be implemented during construction. However minor and temporary impacts may remain.	Significant Negative Effect

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				assessment is therefore required to consider the final characteristics of the new discharge and ensure that water quality is not compromised. With regard to the Mid Medway from Eden Confluence to Yalding Water Body waterbody, the WFD assessment highlights that a reduction in discharges from the WwTW could potentially change the physico-chemistry of the water body. A reduction in nutrient supply is likely to result in beneficial impacts on biological quality elements. However, there is some potential for adverse impacts during periods of low flow as a result of overall reduced flow in the channel, including a reduction in dissolved oxygen concentrations and an increase in water temperature (i.e. due to shallow, sluggish flows).		
Isle of Wight (IOW)	Drought option - supply side (IOW): Caul Bourne (1.5Ml/d)	Operation	Water Quality	Option is within SPZs and is located within the IOW Solent Group and IOW Central Downs Chalk WFD groundwater bodies. Given this option is only to be implemented under drought conditions when water resources are vulnerable, the option may have further negative effects on levels, flows and quality of the water environment. The WFD assessment (2025) of the Southern Water Drought Plan 2022 highlights that with regard to the IOW Central Downs Chalk groundwater body, there is a medium risk of temporary deterioration in quantitative status and low risk for chemical status (within class) and that there are surface water bodies that will be potentially impacted (Caul Bourne waterbody and Newton River transitional waterbody). The Drought Plan WFD highlights that with regard to the Caul Bourne waterbody and the Newtown River transitional waterbody, there is a high risk of temporary deterioration in status due to impacts on the fish community and there are potential risks to Solent and Southampton Water SPA Solent Maritime SAC. The SEA assessment (2025) of the Southern Water Drought Plan 2022, highlights that the implementation of the drought permit would result in a major adverse impact on groundwater levels and flows in the Caul Bourne and freshwater flow inputs to the Newtown	Further assessments required to establish potential impacts from reduction/removal of MRF. Monitor groundwater levels. Uncertainty will be addressed through a Monitoring and Mitigation Package.	Significant Negative Effect.

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				Estuary. There would be an associated moderate adverse impact on water quality and ecology in the Caul Bourne. As such, and in line with the conclusions of the SEA of the Drought Plan a significant negative effect has been identified during operation.		
Kent Medway West (KMW)	Drought option - supply side (KMW): River Medway Scheme 1-4 (17Ml/d).	Operation	Water Quality	The WFD assessment (2025) of the Southern Water Drought Plan 2022, highlights that with regard to the Bewl, Teise at Lamberhurst, Teise and Lesser Teise, Beult at Yalding, Lower Teise, and Medway at Maidstone waterbodies, there is a low to medium risk of temporary deterioration in status, with risks of impacting on the waterbody that is immediately downstream of each of the waterbodies listed (i.e. in the order as listed above). Whilst for the Medway transitional waterbody, there is a low risk of temporary deterioration in status. The SEA assessment (2025) of the Southern Water Drought Plan 2022 highlights that the implementation of Stage 4 of the Drought Order in winter would result in major adverse effects on river flows downstream of Bewl Water Reservoir and through all downstream river reaches to the tidal limit of the river, with moderate adverse effects on freshwater flow to the Medway Estuary. There would be a moderate adverse effect on water quality and major adverse effects on aquatic ecology in the freshwater reaches of the river. Minor adverse effects on aquatic ecology in the Medway Estuary Marine Conservation Zone are anticipated, with no likely significant effects anticipated on the Medway Estuary and Marshes SPA, SSSI and Ramsar sites. As such, and in line with the conclusions of the SEA of the Drought Plan a significant negative effect has been identified during operation.	Monitor river flows and quality as set out in the Drought Permit Order.	Significant Negative Effect
Hants Rural (HRZ)	Groundwater (HRZ): Remove constraints at Kings Sombourne	Construction	Flood Risk	The whole site is located within Flood Zones 2 and 3 area, next to the River Test. Due to the this, construction works will be at high risk of flooding, depending on the timing of works, and therefore a major negative effect has been assessed.	Measures to reduce the impact on flooding during the construction phase. Flood risk during construction may still occur.	Significant Negative Effect

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
	(2.5Ml/d)					
Sussex North (SNZ) Sussex Worthing (SWZ) Sussex Brighton (SBZ) Hants Kingsclere (HKZ) Hants Andover (HAZ) Isle of Wight (IOW) Hants Rural (HRZ) Hants Winchester (HWZ) Hants Southampton East (HSE) Hants Southampton West (HSW) Kent Medway East (KME) Kent Medway West (KMW)	Drought option - demand side (SNZ): NEUBs Drought option - demand side (SWZ): NEUBs Drought option: demand side (SBZ): NEUBs Drought option - demand side (HKZ): NEUBs Drought option - demand side (HAZ): NEUBs Drought option - demand side (IOW): NEUBs Drought option - demand side (HRZ): NEUBs Drought option - demand side (HWZ): NEUBs Drought option - demand side (HSE): NEUBs Drought option - demand side (HSW): NEUBs	Operation	Population and Human Health: Maintain and enhance the health and wellbeing of the local community, including economic and social wellbeing	The ban carries the risk of economic impacts on businesses that benefit directly or indirectly from certain water uses that would be prohibited under the ban (e.g. sports and leisure facilities). The ban may result in some business loss if the water-related operations have to be suspended.	N/A	Significant Negative Effect

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
Kent Thanet (KTZ) Sussex Hastings (SHZ)	Drought option - demand side (KME): NEUBs Drought option - demand side (KMW): NEUBs Drought option - demand side (KTZ): NEUBs Drought option - demand side (SHZ): NEUBs					
All	Smart Metering	Construction	Health & Wellbeing	No construction effects have been identified from this option for human health, however, the option will result in a significant capital spend that could result in a positive effect on the local economy associated with supply chain benefits and spend by workers and contractors in the local economy.	N/A	Significant positive effect
All	Digitalisation/Smart Networks	Construction	Health & Wellbeing	The option could result in a significant capital spend spread over the construction period which could result in a positive effect on the local economy associated with supply chain benefits and spend by workers and contractors in the local economy.	N/A	Significant positive effect
All	Mains Replacement (Net of NNR)	Construction	Health & Wellbeing	No construction effects have been identified from this option for human health, however, the option would result in a significant capital spend that would result in a positive effect on the local economy associated with supply chain benefits and spend by workers and contractors in the local economy.	N/A	Significant positive effect
All	Smart Metering	Construction	Carbon Emissions	The construction of the option would include embodied carbon from material production, transport and installation of smart meters. This option is assumed to have a significant negative effect on overall greenhouse gas emission levels, due to the scale of the option.	Where possible seek to source products that use low/zero carbon for manufacture and avoid the use of diesel-powered generators for equipment during installation.	Significant negative effect
All	Digitalisation/Smart Networks	Construction	Carbon Emissions	The construction of the option would include embodied carbon from material production, transport and installation of new devices. This option is assumed to	Where possible seek to source products that use low/zero carbon for manufacture and avoid the use of diesel-	Significant negative effect

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				have a significant negative effect on overall greenhouse gas emission levels, due to its scale.	powered generators for equipment during installation.	
All	Mains Replacement (Net of NNR)	Construction	Carbon Emissions	The construction of the option would include embodied carbon from material production, transport and installation of replacement pipes. Due to the scale of the option, this is assumed to have a significant negative effect on overall greenhouse gas emission levels.	Where possible seek to source products that use low/zero carbon for manufacture and avoid the use of diesel-powered generators for equipment during installation.	Significant negative effect
All	Smart Metering	Construction	Resource Use	The option will require new equipment with only limited opportunities for the re-use or recycling of waste materials. Production and installation of smart meters may result in waste associated with manufacturing waste, packaging, materials required for installation and disposal of any faulty/damaged meters. This is considered to be a significant adverse effect for this option during construction, due to the scale of the option. The operation of this option is not anticipated to impact on waste and resource use.	Smart meter equipment could be sourced from manufactures utilising more sustainable materials.	Significant negative effect
All	Digitalisation/Smart Networks	Construction	Resource Use	The option will require new equipment with only limited opportunities for the re-use or recycling of waste materials. Production and installation of new devices would result in waste associated with manufacturing waste, packaging, materials required for installation and disposal of any old materials. This is considered to be a significant adverse effect for this option during construction, due to the scale of the option.	New devices and materials could be sourced from manufactures utilising more sustainable materials.	Significant negative effect
All	Mains Replacement (Net of NNR)	Construction	Resource Use	The construction of this option would require new pipes to replace the old. No information on circular economy of former pipes. No reference to recyclable materials in new piping. Due to the scale of the option, this is assessed as having a significant negative effect.	Pipe replacement equipment could be sourced from manufactures utilising more sustainable materials.	Significant negative effect
All	Smart Metering	Operation	Water Reliability	Reduction in demand for water (12.6 Ml/d) will result in reduced requirement for abstraction from Southern Water's sources, helping to deliver reliable and resilient water supplies.	N/A	Significant positive effect
All	Mains Replacement (Net of NNR)	Operation	Water Reliability	The operation of this option would result in a significant reduction in the demand for water (14.0 Ml/d), and does not require abstraction to achieve yield.	N/A	Significant positive effect
All	Smart Metering	Operation	Carbon Emissions	It is assumed that operation of smart meters would not involve an increase in energy consumption or	N/A	Significant positive effect

WRZ	Option	Phase	SEA Topic	Commentary	Mitigation	Post-Mitigation Significant Effect
				associated greenhouse gas emissions. Beneficial impacts include reducing demand for water and the associated energy consumption. Due to the significance of the yield, this has been assessed as a significant positive effect.		
All	Mains Replacement (Net of NNR)	Operation	Carbon Emissions	This option is anticipated to reduce operational carbon emissions through reduced demand for energy to abstract, treat, and put water into supply. Due to the significance of the yield, this is anticipated to have a significant positive effect on this objective.	N/A	Significant positive effect
All	Smart Metering	Operation	Climate Change	The increased capacity of 12.6 Ml/d would help to increase resilience of supply, thereby increasing resilience and adaptability to the effects of climate change.	N/A	Significant positive effect
All	Mains Replacement (Net of NNR)	Operation	Climate Change	The increased capacity of 14.0 Ml/d would help to increase resilience of supply, thereby increasing resilience and adaptability to the effects of climate change.	N/A	Significant positive effect
All	Smart Metering	Operation	Health & Wellbeing	The option will provide water savings of 12.6 Ml/d, contributing towards improving security of supply of water in the Southern Water supply region, supporting economic growth. This is considered to result in a significant positive effect on the local economy and social wellbeing.	N/A	Significant positive effect
All	Mains Replacement (Net of NNR)	Operation	Health & Wellbeing	The option will provide water savings, contributing towards improving security of supply of water in the Southern Water supply region, supporting economic growth. This is considered to result in a significant positive effect on the local economy and social wellbeing.	N/A	Significant positive effect