Arun Valley Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (SNZ): Littlehampton WTW with river discharge (15Ml/d)	2031	1/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Construction effects avoidable with best practice. Operation of Petworth GW and Horsham Recycling will affect flows in the River Arun as it passes the site; the precise effect cannot be precisely quantified (in part due to limited information on the effects of Petworth on surface water flows in the Rother) but if a precautionary position is assumed then the options i/c will (depending on the precise parameters of operation) reduce flows in the Arun by ~13.5Ml/d; this would be ~11.5% of Q95 flows in the Arun adjacent to the designated site, and ~0.6% of Q10 flows. As noted, however, Q95 flows per se are arguably of limited relevance to the site integrity, and although high flows in the river may impede discharges from the wetlands the hydrology of the wetlands is largely determined by groundwater inputs and subsequent interventionist management of the water levels in the ditch network; and, in any case, the impact of the options on high flows is negligible. Additional investigations will be required to confirm the precise operational parameters of the schemes including timing of implementation annually, but operational mitigation for flow impacts is likely to be achievable and so adverse i/c effects would not be anticipated. It should be noted that there is sufficient time to accurately characterise the effects of the options through additional design and investigation as the schemes are not required until 2039.
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	1.6/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (SNZ-SWZ): Pulborough to Worthing	2040	0.2/DS	No effect	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	1.1/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Storage (SNZ): River Adur Offline Reservoir (19.5Ml/d)	2046	7	No effect	n/a - No LSE	-	No AE I/C	
Groundwater (SNZ): New borehole at Petworth (4Ml/d)	2031	4.4/DS	Uncertain	No AE	The hydrological impact of the Petworth abstraction on the Arun Valley sites alone is considered to be negligible, particularly in relation to the dominant effect of groundwater supply to the designated sites and the active management of water levels within the sites; the predicted flow reductions in the Arun will not be of sufficient magnitude to adversely affect the site alone either directly or through secondary mechanisms such as via impacts on water quality. It is considered that there is sufficient confidence to enable a conclusion of no adverse effect on the integrity of the Arun Valley SPA, Arun Valley Ramsar and Arun Valley SAC to be drawn for the WRMP HRA in relation to this option, alone and in combination. Construction effects can be reliably avoided with established measures.	No AE I/C	
Groundwater (SNZ): Petersfield refurbishment (1.6Ml/d)	2029	DS/DS	Uncertain	No AE	The effects of the abstraction 'alone' will be very limited, and will not adversely affect the integrity of the site; this is principally because: •the effect of the abstraction on flows in the River Arun would be nominal (less than 1% at all except the lowest flows), and only if it is assumed that the entirety of the abstraction is expressed in river flows; and •although water from the River Arun enters the Arun valley sites, they are not understood to be fundamentally reliant on flooding (etc.) from the River Arun for maintenance of favourable condition for a range of reasons, including the role played by active water level management within the site and inputs of freshwater water from other sources (this is consistent with the position from the Pulborough Environmental	No AE I/C	
Groundwater (SNZ): Reinstate West Chiltington (3.1Ml/d)	2029	3.1/DS	Uncertain	No AE	The effects of the abstraction 'alone' will be negligible, and not adversely affect the integrity of the site; this is principally because •it is not considered possible for the abstraction to directly influence spring flows within the European sites and hence GWDTEs . •the effect of the abstraction on flows in the River Arun would be nominal (less than 1% at all except the lowest flows), and only if it is assumed that the entirety of the abstraction is expressed in river flows; •although water from the River Arun enters the Arun valley sites, they are not understood to be fundamentally reliant on flooding (etc.) from the River Arun for maintenance of favourable condition for a range of reasons, including the role played by active water level management within the site and inputs of freshwater water from other sources (this is consistent with the position from the Pulborough Basin WINEP investigations); and •there does not appear to be substantive connectivity between the River Stor and the designated sites (no	No AE I/C	
Desalination (SWZ): Tidal River Arun	2046	4.6	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (SWZ): Tidal River Arun	2046	4.6	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Recycling (SNZ): Horsham with storage at Pulborough (6.8Ml/d)	2058	0.3/DS	Uncertain	No AE	Operation of the scheme will reduce flows in the River Arun downstream of Horsham as a proportion of the WwTW discharge will be recovered. The Arun Valley SAC/SPA/Ramsar are functionally linked to the River Arun being a series of wet meadows which are periodically flooded/ inundated. However, evidence from ongoing studies indicates that the wetlands are not fundamentally supported fluvially (i.e. they are are not reliant / dependent on (for example) winter flooding from the Arun to maintain water levels), and whilst there may be some localised inputs from the river where sluices etc. are not operating correctly, the vast majority of the site is not supported by inward flows from the Arun but by groundwater or other surface water inputs from the catchment (i.e. the dominant direction of flow is from the wetlands to the river). High flows in the river may impede discharges from the wetlands, but the hydrology of the wetlands is largely determined by groundwater inputs and subsequent interventionist management of the water levels in the ditch network. The operation of the scheme will potentially reduce flows in the Arun by 9.5Ml/d, which be around 8% of the Q95 flow (lowest flows) in the Arun based on gauging flow data from the Rother at Hardham, Station No. 41009; and Arun at Pallingham, Station No. 41014 (note this is conservative). However, the impact on low flows within the river is not considered critical to the designated site integrity for the reasons noted above; at high (flood) flows (e.g. Q10) the maximum impact is around 0.4%, which is not considered likely to adversely affect the site habitats given the understood hydrological functioning of the site. On this basis, adverse operational effects would not be anticipated. Construction effects are all minor	No AE I/C	

Arun Valley SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (SNZ): Littlehampton WTW with river discharge (15Ml/d)	2031	1.2/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Construction effects avoidable with best practice. Operation of Petworth GW and Horsham Recycling will affect flows in the River Arun as it passes the site; the precise effect cannot be precisely quantified (in part due to limited information on the effects of Petworth on surface water flows in the Rother) but if a precautionary position is assumed then the options i/c will (depending on the precise parameters of operation) reduce flows in the Arun by ~13.5Ml/d; this would be ~11.5% of Q95 flows in the Arun adjacent to the designated site, and ~0.6% of Q10 flows. As noted, however, Q95 flows per se are arguably of limited relevance to the site integrity, and although high flows in the river may impede discharges from the wetlands the hydrology of the wetlands is largely determined by groundwater inputs and subsequent interventionist management of the water levels in the ditch network; and, in any case, the impact of the options on high flows is negligible. Additional investigations will be required to confirm the precise operational parameters of the schemes including timing of implementation annually, but operational mitigation for flow impacts is likely to be achievable and so adverse i/c effects would not be anticipated. It should be noted that there is sufficient time to accurately characterise the effects of the options through additional design and investigation as the schemes are not required until 2039.
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	1.7/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (SNZ-SWZ): Pulborough to Worthing	2040	0.2/DS	No effect	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	1.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Storage (SNZ): River Adur Offline Reservoir (19.5Ml/d)	2046	7	No effect	n/a - No LSE	-	No AE I/C	
Groundwater (SNZ): New borehole at Petworth (4Ml/d)	2031	4.9/DS	Uncertain	No AE	The hydrological impact of the Petworth abstraction on the Arun Valley sites alone is considered to be negligible, particularly in relation to the dominant effect of groundwater supply to the designated sites and the active management of water levels within the sites; the predicted flow reductions in the Arun will not be of sufficient magnitude to adversely affect the site alone either directly or through secondary mechanisms such as via impacts on water quality. It is considered that there is sufficient confidence to enable a conclusion of no adverse effect on the integrity of the Arun Valley SPA, Arun Valley Ramsar and Arun Valley SAC to be drawn for the WRMP HRA in relation to this option, alone and in combination. Construction effects can be reliably avoided with established measures.	No AE I/C	
Groundwater (SNZ): Petersfield refurbishment (1.6Ml/d)	2029	DS/DS	Uncertain	No AE	The effects of the abstraction 'alone' will be very limited, and will not adversely affect the integrity of the site; this is principally because: •the effect of the abstraction on flows in the River Arun would be nominal (less than 1% at all except the lowest flows), and only if it is assumed that the entirety of the abstraction is expressed in river flows; and •although water from the River Arun enters the Arun valley sites, they are not understood to be fundamentally reliant on flooding (etc.) from the River Arun for maintenance of favourable condition for a range of reasons, including the role played by active water level management within the site and inputs of freshwater water from other sources (this is consistent with the position from the Pulborough Environmental	No AE I/C	

Groundwater (SNZ): Reinstate West Chiltington (3.1Ml/d)	2029	3.1/DS	Uncertain	No AE	The effects of the abstraction 'alone' will be negligible, and not adversely affect the integrity of the site; this is principally because •it is not considered possible for the abstraction to directly influence spring flows within the European sites and hence GWDTEs . •the effect of the abstraction on flows in the River Arun would be nominal (less than 1% at all except the lowest flows), and only if it is assumed that the entirety of the abstraction is expressed in river flows; •although water from the River Arun enters the Arun valley sites, they are not understood to be fundamentally reliant on flooding (etc.) from the River Arun for maintenance of favourable condition for a range of reasons, including the role played by active water level management within the site and inputs of freshwater water from other sources (this is consistent with the position from the Pulborough Basin WINEP investigations); and •there does not appear to be substantive connectivity between the River Stor and the designated sites (no	No AE I/C
Desalination (SWZ): Tidal River	2046	4.6	No effect	n/a - No	-	No AE I/C
Desalination (SWZ): Tidal River	2046	4.6	No effect	n/a - No	-	No AE I/C
Recycling (SNZ): Horsham with storage at Pulborough (6.8Ml/d)	2058	0.3/DS	Uncertain	No AE	Operation of the scheme will reduce flows in the River Arun downstream of Horsham as a proportion of the WwTW discharge will be recovered. The Arun Valley SAC/SPA/Ramsar are functionally linked to the River Arun being a series of wet meadows which are periodically flooded/ inundated. However, evidence from ongoing studies indicates that the wetlands are not fundamentally supported fluvially (i.e. they are are not reliant / dependent on (for example) winter flooding from the Arun to maintain water levels), and whilst there may be some localised inputs from the river where sluices etc. are not operating correctly, the vast majority of the site is not supported by inward flows from the Arun but by groundwater or other surface water inputs from the catchment (i.e. the dominant direction of flow is from the wetlands to the river). High flows in the river may impede discharges from the wetlands, but the hydrology of the wetlands is largely determined by groundwater inputs and subsequent interventionist management of the water levels in the ditch network. The operation of the scheme will potentially reduce flows in the Arun by 9.5Ml/d, which be around 8% of the Q95 flow (lowest flows) in the Arun based on gauging flow data from the Rother at Hardham, Station No. 41009; and Arun at Pallingham, Station No. 41014 (note this is conservative). However, the impact on low flows within the river is not considered critical to the designated site integrity for the reasons noted above; at high (flood) flows (e.g. Q10) the maximum impact is around 0.4%, which is not considered likely to adversely affect the site habitats given the understood hydrological functioning of the site. It should also be noted that the qualifying features of the SAC are understood to be located in reedbeds some distance from the river. On this basis, adverse operational effects would not be anticipated.	No AE I/C

Arun Valley SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (SNZ): Littlehampton WTW with river discharge (15Ml/d)	2031	1.1/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Construction effects avoidable with best practice. Operation of Petworth GW and Horsham Recycling will affect flows in the River Arun as it passes the site; the precise effect cannot be precisely quantified (in part due to limited information on the effects of Petworth on surface water flows in the Rother) but if a precautionary position is assumed then the options i/c will (depending on the precise parameters of operation) reduce flows in the Arun by ~13.5Ml/d; this would be ~11.5% of Q95 flows in the Arun adjacent to the designated site, and ~0.6% of Q10 flows. As noted, however, Q95 flows per se are arguably of limited relevance to the site integrity, and although high flows in the river may impede discharges from the wetlands the hydrology of the wetlands is largely determined by groundwater inputs and subsequent interventionist management of the water levels in the ditch network; and, in any case, the impact of the options on high flows is negligible. Additional investigations will be required to confirm the precise operational parameters of the schemes including timing of implementation annually, but operational mitigation for
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	1.7/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (SNZ-SWZ): Pulborough to Worthing	2040	0.2/DS	No effect	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	1.1/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Storage (SNZ): River Adur Offline Reservoir (19.5Ml/d)	2046	7	No effect	n/a - No LSE	-	No AE I/C	

Groundwater (SNZ): New borehole at Petworth (4Ml/d)	2031	4.4/DS	Uncertain	No AE	The hydrological impact of the Petworth abstraction on the Arun Valley sites alone is considered to be negligible, particularly in relation to the dominant effect of groundwater supply to the designated sites and the active management of water levels within the sites; the predicted flow reductions in the Arun will not be of sufficient magnitude to adversely affect the site alone either directly or through secondary mechanisms such as via impacts on water quality. It is considered that there is sufficient confidence to enable a conclusion of no adverse effect on the integrity of the Arun Valley SPA, Arun Valley Ramsar and Arun Valley SAC to be drawn for the WRMP HRA in relation to this option, alone and in combination. Construction effects can be reliably avoided with established measures.	No AE I/C	flow impacts is likely to be achievable and so adverse i/c effects would not be anticipated. It should be noted that there is sufficient time to accurately characterise the effects of the options through additional design and investigation as the schemes are not required until 2039.
Groundwater (SNZ): Petersfield refurbishment (1.6Ml/d)	2029	DS/DS	Uncertain	No AE	The effects of the abstraction 'alone' will be very limited, and will not adversely affect the integrity of the site; this is principally because: •the effect of the abstraction on flows in the River Arun would be nominal (less than 1% at all except the lowest flows), and only if it is assumed that the entirety of the abstraction is expressed in river flows; and •although water from the River Arun enters the Arun valley sites, they are not understood to be fundamentally reliant on flooding (etc.) from the River Arun for maintenance of favourable condition for a range of reasons, including the role played by active water level management within the site and inputs of freshwater water from other sources (this is consistent with the position from the Pulborough Environmental	No AE I/C	
Groundwater (SNZ): Reinstate West Chiltington (3.1Ml/d)	2029	3.1/DS	Uncertain	No AE	The effects of the abstraction 'alone' will be negligible, and not adversely affect the integrity of the site; this is principally because •it is not considered possible for the abstraction to directly influence spring flows within the European sites and hence GWDTEs . •the effect of the abstraction on flows in the River Arun would be nominal (less than 1% at all except the lowest flows), and only if it is assumed that the entirety of the abstraction is expressed in river flows; •although water from the River Arun enters the Arun valley sites, they are not understood to be fundamentally reliant on flooding (etc.) from the River Arun for maintenance of favourable condition for a range of reasons, including the role played by active water level management within the site and inputs of freshwater water from other sources (this is consistent with the position from the Pulborough Basin WINEP investigations); and •there does not appear to be substantive connectivity between the River Stor and the designated sites (no	No AE I/C	
Desalination (SWZ): Tidal River Arun	2046	4.6	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (SWZ): Tidal River Arun	2046	4.6	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Recycling (SNZ): Horsham with storage at Pulborough (6.8Ml/d)	2058	0.3/DS	Uncertain	No AE	Operation of the scheme will reduce flows in the River Arun downstream of Horsham as a proportion of the WwTW discharge will be recovered. The Arun Valley SAC/SPA/Ramsar are functionally linked to the River Arun being a series of wet meadows which are periodically flooded/ inundated. However, evidence from ongoing studies indicates that the wetlands are not fundamentally supported fluvially (i.e. they are are not reliant / dependent on (for example) winter flooding from the Arun to maintain water levels), and whilst there may be some localised inputs from the river where sluices etc. are not operating correctly, the vast majority of the site is not supported by inward flows from the Arun but by groundwater or other surface water inputs from the catchment (i.e. the dominant direction of flow is from the wetlands to the river). High flows in the river may impede discharges from the wetlands, but the hydrology of the wetlands is largely determined by groundwater inputs and subsequent interventionist management of the water levels in the ditch network. The operation of the scheme will potentially reduce flows in the Arun by 9.5Ml/d, which be around 8% of the Q95 flow (lowest flows) in the Arun based on gauging flow data from the Rother at Hardham, Station No. 41009; and Arun at Pallingham, Station No. 41014 (note this is conservative). However, the impact on low flows within the river is not considered critical to the designated site integrity for the reasons noted above; at high (flood) flows (e.g. Q10) the maximum impact is around 0.4%, which is not considered likely to adversely affect the site habitats given the understood hydrological functioning of the site. On this basis, adverse operational effects would not be anticipated. Construction effects are all minor	No AE I/C	

Ashdown Forest SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary

Bulk import (SNZ): SES to SNZ (10Ml/d)	2034	6.8	No effect	n/a - No LSE	-	No LSE I/C	Not affected by any SW options

Ashdown Forest SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (SNZ): SES to SNZ (10Ml/d)	2034	6.8	No effect	n/a - No LSE	-	No LSE I/C	Not affected by any SW options

Benfleet and Southend Marshes Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Desalination (KME): Isle of Sheppey	2046	8.5	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	This site is considered unlikely to be adversely affected by any option alone; the zones of environmental change associated with the operation of the desalination options (i.e. saline plumes etc.) will not coincide geographically for additive effects to occur at the site, and synergistic effects will not occur.
Desalination (KME): Isle of Sheppey	2046	8.5	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	8.5	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	8.5	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Benfleet and Southend Marshes SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Desalination (KME): Isle of Sheppey	2046	8.5	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	This site is considered unlikely to be adversely affected by any option alone; the zones of environmental change associated with the operation of the desalination options (i.e. saline plumes etc.) will not coincide geographically for additive effects to occur at the site, and synergistic effects will not occur.
Desalination (KME): Isle of Sheppey	2046	8.5	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	8.5	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	8.5	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Blean Complex SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (KTZ): SEW Kingston to Near Canterbury (2Ml/d)	2026	9.8	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (construction only; site not exposed (distance, no pathways); option delivery not coincident)
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	0	No effect	n/a - No LSE	-	No LSE I/C	
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	0	No effect	n/a - No LSE	-	No LSE I/C	
Desalination (KTZ): East Thanet	2041	7.5	No effect	n/a - No	-	No LSE I/C	
Desalination (KTZ): East Thanet	2041	7.5	No effect	n/a - No	-	No LSE I/C	
Bulk import (KTZ): SEW Canterbury to Near Canterbury	2050	2.3	No effect	n/a - No LSE	-	No LSE I/C	

Briddlesford Copses SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary

Groundwater (IOW): New borehole at Eastern Yar3 (1.5Ml/d)	2040	6	No effect	n/a - No LSE	-	No AE I/C	Only potentially exposed to construction effects from one option; options not coincident; effects avoidable with established measures
Recycling (IOW): Sandown (8.5Ml/d)	2031	3.6	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Groundwater (IOW): New boreholes at Newchurch (LGS)	2037	2.7	No effect	n/a - No LSE	-	No AE I/C	

Butser Hill SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	8.8	No effect	n/a - No LSE	-	No AE I/C	Only potentially exposed to construction effects from one option; effects avoidable with established measures
Recycling (HSE): Recharge of Havant Thicket from recycled water from Portsmouth Water (60Ml/d)	2035	8.9	No effect	n/a - No LSE	-	No AE I/C	
Groundwater (SNZ): Petersfield refurbishment (1.6Ml/d)	2029	DS	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	4.4	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	8	No effect	n/a - No LSE	-	No AE I/C	

Castle Hill SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (SBZ): SEW to Rottingdean (20Ml/d)	2066	1.1	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (construction only; site not exposed (distance, no pathways for site-derived pollutants))
Treatment capacity (SWZ): Pulborough winter transfer stage 1 (2Ml/d)	2041	7.1	No effect	n/a - No LSE	-	No LSE I/C	
Groundwater (SBZ): Lewes Road (3.5Ml/d)	2031	4.2	No effect	n/a - No LSE	-	No LSE I/C	
Interzonal transfer (SBZ-SWZ): Brighton to Worthing	2041	1.8	No effect	n/a - No LSE	-	No LSE I/C	
Interzonal transfer (SWZ-SBZ): Pulborough winter transfer stage 2 (4Ml/d)	2041	7.1	No effect	n/a - No LSE	-	No LSE I/C	

Chichester and Langstone Harbours Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	0/DS	Uncertain*	No AE	This option has been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments have concluded that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.	No AE I/C	Construction effects avoidable with established measures; only exposed to operational effects from Portsmouth Water recycling so i/c effects between SW options will not occur.
Recycling (HSE): Recharge of Havant Thicket from recycled water from Portsmouth Water (60Ml/d)	2035	0/DS	Uncertain	No AE	This option has been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments have concluded that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	3.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Chichester and Langstone Harbours SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (HSE): Recharge of Havant Thicket from recycled water from Portsmouth Water (60Ml/d)	2035	0/DS	Uncertain	No AE	This option has been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments have concluded that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.	No AE I/C	Construction effects avoidable with established measures; only exposed to operational effects from Portsmouth Water recycling so i/c effects between SW options will not occur.
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	3.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Cothill Fen SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	2040	6.1	No effect	n/a - No LSE		0 No LSE I/C	Construction effects avoidable with established measures; only exposed to effects from one SW option

Duncton to Bignor Escarpment SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (SNZ): Littlehampton WTW with river discharge (15Ml/d)	2031	1.2	No effect	n/a - No LSE	-	No AE I/C	Potentially exposed to construction effects only; most schemes not temporally coincident and effects alone can be avoided in any case with normal measures.
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	3.4	No effect	n/a - No LSE	-	No AE I/C	
Interzonal transfer (SNZ-SWZ): Pulborough to Worthing	2040	5.2	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	0	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Groundwater (SNZ): New borehole at Petworth (4Ml/d)	2031	3.6	No effect	n/a - No LSE	-	No AE I/C	
Desalination (SWZ): Tidal River	2046	7.4	No effect	n/a - No	-	No AE I/C	
Desalination (SWZ): Tidal River	2046	7.4	No effect	n/a - No	-	No AE I/C	
Recycling (SNZ): Horsham with storage at Pulborough (6.8Ml/d)	2058	5.8	No effect	n/a - No LSE	-	No AE I/C	

Dungeness SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (SHZ): Reconfigure Rye Wells (1.5Ml/d)	2036	10.6/DS	No effect	n/a - No LSE	-	No AE I/C	Potentially exposed to construction effects only; most schemes not temporally coincident and effects alone can be avoided in any case with normal measures.
Bulk export (SHZ): Rye to SEW RZ8	2050	2.6/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Recycling (SHZ): Hastings to Darwell (15.3Ml/d)	2051	16.8/DS	No effect	n/a - No LSE	-	No AE I/C	

Dungeness, Romney Marsh and Rye Bay Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (SHZ): Reconfigure Rye Wells (1.5Ml/d)	2036	7.2/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Potentially exposed to construction effects only; most schemes not temporally coincident and effects alone can be avoided in any case with normal measures.
Bulk export (SHZ): Rye to SEW RZ8	2050	2/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Recycling (SHZ): Hastings to Darwell (15.3Ml/d)	2051	12.4/DS	Uncertain*	No AE	Pipeline will cross Combe Haven watercourse upstream of Combe Haven SSSI. With regard to construction effects, the SSSI citation notes that "The whole site, but particularly the reed bed, is valuable for breeding, wintering and passage birds" and it is possible that some waterbirds associated with the Ramsar may periodically utilise this site also (although it seems unlikely to provide habitat etc. that is critical to the functional integrity of the Ramsar or the waterbird populations (given the widespread availability of similar wetland habitats within the Ramsar); however, potential effects on the SSSI can be avoided with normal measures. Residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Dungeness, Romney Marsh and Rye Bay SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (SHZ): Reconfigure Rye Wells (1.5Ml/d)	2036	7.2/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Construction effects avoidable with established measures, residual effects likely to be nil. With regard to operation, the Rye Wells option may affect terrestrial components of the site (not adverse alone), whereas the Hastings Recycling option (no LSE alone) will only affect the offshore marine areas; consequently there will be no spatially coincident in combination effects, the options will not combine to affect the same qualifying features at different times or locations, and the effects of each option will be too small to constitute an adverse effect if considered cumulatively.
Bulk export (SHZ): Rye to SEW RZ8	2050	2/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Recycling (SHZ): Hastings to Darwell (15.3Ml/d)	2051	1.4/DS	Uncertain*	No AE	Pipeline will cross Combe Haven watercourse upstream of Combe Haven SSSI; the watercourse then discharges to the marine / offshore component of this SPA, which covers foraging areas used by breeding tern species from the Dungeness Peninsula. The scheme will use water sourced from effluent otherwise discharged to sea via an LSO within the marine boundary of the SPA. With regard to construction effects, the SSSI citation notes that "The whole site, but particularly the reed bed, is valuable for breeding, wintering and passage birds" and it is possible that some waterbirds associated with the SPA may periodically utilise this site also (although it seems unlikely to provide habitat etc. that is critical to the functional integrity of the SPA or the waterbird populations (given the widespread availability of similar wetland habitats within the SPA); however, potential effects on the SSSI and the marine components of the SPA due to construction can be avoided with normal measures. With regard to operation, the option will use water sourced from effluent otherwise discharged to sea via an LSO within the marine boundary of the SPA. There will be no discharges of hypersaline brine or similar (in practice the recovery process results in a discharge that is slightly more saline (e.g. at Budd's Farm the saline concentration typically doubles from 3-5g/l to 6-10 g/l, but this is substantially below the salinity of seawater (~35g)); the total load of pollutants (e.g. nitrates) discharged through the LSO will remain the same, although concentrations may increase slightly; however, this will be inconsequential given the nature of the receiving waters (open sea) and the consequent dispersal (hence limited area affected). Furthermore, the seabird features of the SPA that will utilise this area will have a low sensitivity to the type and magnitude of change, given the area potentially impacted versus the total available habitat. Residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

East Hampshire Hangers SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (SNZ): Petersfield refurbishment (1.6Ml/d)	2029	DS	No effect	n/a - No LSE	-	No AE I/C	No LSE alone; no risk of i/c effects (construction only; site not exposed (distance, no pathways for site-derived pollutants))
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	2	No effect	n/a - No LSE	-	No AE I/C	

Ebernoe Common SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (SNZ): Littlehampton WTW with river discharge (15Ml/d)	2031	7.7	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Potentially exposed to construction effects only; most schemes not temporally coincident and effects alone can be avoided in any case with normal measures.
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	5.1	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (SNZ-SWZ): Pulborough to Worthing	2040	9.6	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	9	No effect	n/a - No LSE	-	No AE I/C	

Groundwater (SNZ): New borehole at Petworth (4Ml/d)	2031	5.7	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Recycling (SNZ): Horsham with storage at Pulborough (6.8Ml/d)	2058	9.3	No effect	n/a - No LSE	-	No AE I/C	

Emer Bog SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (HWZ-HAZ): Winchester to Andover bi-directional (15Ml/d)	2031	9.3	No effect	n/a - No LSE	-	No AE I/C	Potentially exposed to construction effects only; most schemes not temporally coincident and effects alone can be avoided in any case with normal measures.
Interzonal transfer (HRZ-HSW): Romsey Town and Test valve (3.1Ml/d)	2026	3.3	No effect	n/a - No LSE	-	No AE I/C	
Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	2031	9.7	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (HSE-HWZ): Lower Itchen WSW to Yew Hill bi-directional (74Ml/d)	2031	6	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (HSE): PWC Source A to Lower Itchen WSW (21Ml/d)	2032	6.2	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	6	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	2040	5.7	No effect	n/a - No LSE	-	No AE I/C	
Groundwater (HRZ): New boreholes at Romsey (4.8Ml/d)	2031	5.7	No effect	n/a - No LSE	-	No AE I/C	
Groundwater (HRZ): Remove constraints at Kings Sombourne (2.5Ml/d)	2031	9.9	No effect	n/a - No LSE	-	No AE I/C	
Groundwater (HSW): Test MAR (5.5Ml/d)	2036	6.9	No effect	n/a - No LSE	-	No AE I/C	

Essex Estuaries SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Desalination (KME): Isle of Sheppey	2046	8.6	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	This site is considered unlikely to be adversely affected by any option alone; the zones of environmental change associated with the operation of the desalination options (i.e. saline plumes etc.) will not coincide geographically for additive effects to occur at the site, and synergistic effects will not occur.
Desalination (KME): Isle of Sheppey	2046	8.6	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	8.6	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	8.6	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Foulness (Mid-Essex Coast Phase 5) Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Desalination (KME): Isle of Sheppey	2046	8.8	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	This site is considered unlikely to be adversely affected by any option alone; the zones of environmental change associated with the operation of the desalination options (i.e. saline plumes etc.) will not coincide geographically for additive effects to

Desalination (KME): Isle of Sheppey	2046	8.8	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	occur at the site, and synergistic effects will not occur.
Desalination (KME): Isle of Sheppey	2046	8.8	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	8.8	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Foulness (Mid-Essex Coast Phase 5) SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Desalination (KME): Isle of Sheppey	2046	8.8	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	This site is considered unlikely to be adversely affected by any option alone; the zones of environmental change associated with the operation of the desalination options (i.e. saline plumes etc.) will not coincide geographically for additive effects to occur at the site, and synergistic effects will not occur.
Desalination (KME): Isle of Sheppey	2046	8.8	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	8.8	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	8.8	Uncertain*	No AE	Adverse effects alone will not occur (distance to site; construction effects avoidable with normal measures; environmental changes associated with operation very unlikely to extend to the site); residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Hastings Cliffs SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (SHZ): Reconfigure Rye Wells (1.5Ml/d)	2036	7.5	No effect	n/a - No LSE	-	No AE I/C	This site is considered unlikely to be adversely affected by any option alone; the zones of environmental change associated with the operation of the desalination options (i.e. saline plumes etc.) will not coincide geographically for additive effects to occur at the site, and synergistic effects will not occur.
Bulk export (SHZ): Rye to SEW	2050	5.9	No effect	n/a - No	-	No AE I/C	
Recycling (SHZ): Hastings to Darwell (15.3Ml/d)	2051	6.4	No effect	n/a - No LSE	-	No AE I/C	

Isle of Wight Downs SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (IOW): New borehole at Eastern Yar3 (1.5Ml/d)	2040	4.4	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (site not exposed to construction (distance, no pathways for site-derived pollutants); site / features not groundwater dependent)
Recycling (IOW): Sandown (8.5Ml/d)	2031	4.3	No effect	n/a - No	-	No LSE I/C	
Groundwater (IOW): New boreholes at Newchurch (LGS)	2037	7.6	No effect	n/a - No LSE	-	No LSE I/C	

Kennet and Lambourn Floodplain SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (HKZ): Remove constraints at Newbury to increase yield (1.2Ml/d)	2028	3.9	No effect	n/a - No LSE	-	No AE I/C	Only potentially exposed to one option
Interzonal transfer (HAZ-HKZ): Andover to Kingsclere bi-directional (10Ml/d)	2050	8.2	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	2040	0.2	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Kennet Valley Alderwoods SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary

Groundwater (HKZ): Remove constraints at Newbury to increase yield (1.2Ml/d)	2028	3.3	No effect	n/a - No LSE	-	No AE I/C	Site only potentially exposed to one option
Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	2040	0.3	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Kingley Vale SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	8.6	No effect	n/a - No LSE	-	No AE I/C	Site only potentially exposed to one construction element (i.e. same pipeline used for two options); effects avoidable with established measures.
Recycling (HSE): Recharge of Havant Thicket from recycled water from Portsmouth Water (60Ml/d)	2035	8.6	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	9.7	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	0.1	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Lewes Downs SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (SBZ): SEW to Rottingdean (20Ml/d)	2066	0.2	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (construction only; site not exposed (distance, no pathways for site-derived pollutants))
Interzonal transfer (SBZ-SWZ): Brighton to Worthing	2041	5.1	No effect	n/a - No LSE	-	No LSE I/C	

Lydden and Temple Ewell Downs SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (KTZ): SEW Kingston to Near Canterbury (2Ml/d)	2026	6.9	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (construction only; site not exposed (distance, no pathways for site-derived pollutants))
Bulk import (KTZ): SEW Canterbury to Near Canterbury	2050	9.4	No effect	n/a - No LSE	-	No LSE I/C	

Margate and Long Sands SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	4.7	No effect	n/a - No LSE	-	No AE I/C*	This site is only likely to be exposed to i/c effects from the operation of the East Thanet desalination options (construction effects will only occur once, in relation to the outfall), which will necessarily operate additively (i.e. the initial 20Ml/d plant will be supplemented a second plant). Based on proxy information from other sites presented in the alone assessment it is considered that these options will not result in adverse effects on this site (also given the low sensitivity of the interest features) although there is some residual uncertainty regarding this conclusion.
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	4.7	No effect	n/a - No LSE	-	No AE I/C*	
Desalination (KTZ): East Thanet	2041	1.3	LSE	No AE*	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	No AE I/C*	

Desalination (KTZ): East Thanet	2041	1.3	LSE	No AE*	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) although construction of this will have been completed under option THA20. 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.	No AE I/C*	
Bulk import (KTZ): SEW Canterbury to Near Canterbury	2050	8.5	No effect	n/a - No LSE	-	No AE I/C*	

Medway Estuary and Marshes Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (SHZ): Tonbridge to Bewl (5.7Ml/d)	2036	DS/DS	No effect	n/a - No LSE	-	No AE I/C*	This site is potentially exposed to operational effects from five options: the three Isle of Sheppey desalination schemes, plus Medway Recycling and Sittingbourne Industrial Reuse (the Tonbridge recycling scheme will not affect this site due to the HOF requirements on the Medway at Teston). Only the zones of environmental change associated with the the desalination options will overlap, and so additive effects at one or more locations between the desalination options and the other options will not occur. Adverse effects alone are not expected as a result of the Medway recycling scheme, and so in combination effects associated with this option will not occur; this applies to the Sittingbourne scheme also, where any residual effects on the site are expected to be not adverse and local to the Milton Creek only. However the operation of the desalinations will necessarily operate additively (i.e. the initial 10Ml/d plant will be supplemented a second plant), although construction effects associated with the outfall will only occur once. Based on proxy information from other sites presented in the alone assessment it is considered that these desalination options will not collectively result in adverse effects on this site, and that potential effects can be avoided through the design stage; however, there is some residual uncertainty regarding this conclusion given the absence of detailed design information.
Asset enhancement (KMW): Remove network constraint at Longfield (13Ml/d)	2026	7.1/DS	No effect	n/a - No LSE	-	No AE I/C*	
Recycling (KMW): Medway WTW to lake (14Ml/d)	2031	10.4/DS	Uncertain	No AE	Adverse construction effects alone will not occur (clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects). With regard to operation, the scheme will reduce non-saline inputs from the River Medway into the Medway estuary; the impact of a 12.8 Ml/d reduction on Q95 flows (i.e. the impact when flows in the river are near their lowest) to the the estuary (based on flows at Allington Locks plus DWF inputs from Medway WTW and other inputs) will be no greater than 7.2%. The change in flows, and some aspects of the operational discharges, has the potential to alter water quality and salinity in the tidal sections of the River Medway (although there will be a reduced WwTW loading to the estuary due to the removal of 12.8Ml/d of DWF discharge). However, the location of this 'maximum' impact is approximately 20km upstream of the closest point of the Medway Estuary and Marshes SPA/Ramsar, which will be overwhelmingly influenced by tidal dynamics and local non-saline inputs from the local catchment, rather than non-saline inputs from the River Medway. As a result the magnitude of the environmental change is expected to be too small to adversely affect the SPA/Ramsar site or its qualifying features.	No AE I/C*	
Recycling (KME): Sittingbourne industrial water reuse (7.5Ml/d)	2031	2.8/DS	Uncertain*	No AE	This option was assessed as having No Adverse Effects at WRMP19 and there have been no substantive amendments in either the scheme or the environmental baseline to alter this conclusion. In summary, the net effect of the scheme operation would be to reduce non-saline inputs to Milton Creek from Sittingbourne WwTW by ~7.5Mld; discharges from the WwTW are likely to form a significant component of the non-saline flows in this creek (the permitted discharge of recycled water is ~118Ml/d) and the volumes recovered through recycling will typically be a small proportion of this (note, a proportion of this water would still enter the Swale and hence potentially the Medway via the paper mill post-process discharge, although the paper-making process will to some extent be consumptive). The principal issues for the Medway Estuary and Marshes SPA/Ramsar are the potential effects on Milton Creek as 'functional habitat'; however, Milton Creek will be of low value in this regard as (a) it is a constrained creek / channel in a high-disturbance urban / industrial area that will inherently have a low attractiveness for the qualifying features (assuming there are no dominating non-natural attractants) and (b) is substantially lower value than the extensive areas of equivalent mud-flat and creek habitat available in the SPA/Ramsar; it is therefore very unlikely that the creek is critical to the functional integrity of the site, and environmental changes in this location would not be expected to	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	0/DS	LSE	No AE*	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.	No AE I/C*	

Desalination (KME): Isle of Sheppey	2046 0/DS	LSE	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046 0/DS	LSE	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046 0/DS	LSE	No AE*	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.	No AE I/C*	
Storage (SHZ): Raising Bewl Reservoir 0.4m (3Ml/d)	2061 DS/DS	No effect	n/a - No LSE	-	No AE I/C*	

Medway Estuary and Marshes SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (SHZ): Tonbridge to Bewl (5.7Ml/d)	2036	DS/DS	No effect	n/a - No LSE	-	No AE I/C*	This site is potentially exposed to operational effects from five options: the three Isle of Sheppey desalination schemes, plus Medway Recycling and Sittingbourne Industrial Reuse (the Tonbridge recycling scheme will not affect this site due to the HOF requirements on the Medway at Teston). Only the zones of environmental change associated with the the desalination options will overlap, and so additive effects at one or more locations between the desalination options and the other options will not occur. Adverse effects alone are not expected as a result of the Medway recycling scheme, and so in combination effects associated with this option will not occur; this applies to the Sittingbourne scheme also, where any residual effects on the site are expected to be not adverse and local to the Milton Creek only. However the operation of the desalinations will necessarily operate additively (i.e. the initial 10Ml/d plant will be supplemented a second plant), although construction effects associated with the outfall will only occur once. Based on proxy information from other sites presented in the alone assessment it is considered that these desalination options will not collectively result in adverse effects on this site, and that potential effects can be avoided through the design stage; however, there is some residual uncertainty regarding this conclusion given the absence of detailed design information.
Asset enhancement (KMW): Remove network constraint at Longfield (13Ml/d)	2026	7.1/DS	No effect	n/a - No LSE	-	No AE I/C*	
Recycling (KMW): Medway WTW to lake (14Ml/d)	2031	10.4/DS	Uncertain	No AE	Adverse construction effects alone will not occur (clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects). With regard to operation, the scheme will reduce non-saline inputs from the River Medway into the Medway estuary; the impact of a 12.8 Ml/d reduction on Q95 flows (i.e. the impact when flows in the river are near their lowest) to the the estuary (based on flows at Allington Locks plus DWF inputs from Medway WTW and other inputs) will be no greater than 7.2%. The change in flows, and some aspects of the operational discharges, has the potential to alter water quality and salinity in the tidal sections of the River Medway (although there will be a reduced WwTW loading to the estuary due to the removal of 12.8Ml/d of DWF discharge). However, the location of this 'maximum' impact is approximately 20km upstream of the closest point of the Medway Estuary and Marshes SPA/Ramsar, which will be overwhelmingly influenced by tidal dynamics and local non-saline inputs from the local catchment, rather than non-saline inputs from the River Medway. As a result the magnitude of the environmental change is expected to be too small to adversely affect the SPA/Ramsar site or its qualifying features.	No AE I/C*	

Recycling (KME): Sittingbourne industrial water reuse (7.5Ml/d)	2031	2.8/DS	Uncertain*	No AE	This option was assessed as having No Adverse Effects at WRMP19 and there have been no substantive amendments in either the scheme or the environmental baseline to alter this conclusion. In summary, the net effect of the scheme operation would be to reduce non-saline inputs to Milton Creek from Sittingbourne WwTW by ~7.5Mld; discharges from the WwTW are likely to form a significant component of the non-saline flows in this creek (the permitted discharge of recycled water is ~118Ml/d) and the volumes recovered through recycling will typically be a small proportion of this (note, a proportion of this water would still enter the Swale and hence potentially the Medway via the paper mill post-process discharge, although the paper-making process will to some extent be consumptive). The principal issues for the Medway Estuary and Marshes SPA/Ramsar are the potential effects on Milton Creek as 'functional habitat'; however, Milton Creek will be of low value in this regard as (a) it is a constrained creek / channel in a high-disturbance urban / industrial area that will inherently have a low attractiveness for the qualifying features (assuming there are no dominating non-natural attractants) and (b) is substantially lower value than the extensive areas of equivalent mud-flat and creek habitat available in the SPA/Ramsar; it is therefore very unlikely that the creek is critical to the functional integrity of the site, and environmental changes in this location would not be expected to	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	0/DS	LSE	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	0/DS	LSE	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	0/DS	LSE	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	0/DS	LSE	No AE*	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.	No AE I/C*	
Storage (SHZ): Raising Bewl Reservoir 0.4m (3Ml/d)	2061	DS/DS	No effect	n/a - No LSE	-	No AE I/C*	

Mole Gap to Reigate Escarpment SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (SNZ): SES to SNZ (10Ml/d)	2034	9.6	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (construction only; site not exposed (distance, no pathways for site-derived pollutants))

Mottisfont Bats SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (HRZ-HSW): Romsey Town and Test valve (3.1Ml/d)	2026	7.1	No effect	n/a - No LSE	-	No AE I/C	Potentially exposed to construction effects only; most schemes not temporally coincident and effects alone can be avoided in any case with normal measures.
Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	2031	8	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Groundwater (HRZ): Remove constraints at Kings Sombourne (2.5Ml/d)	2031	1.9	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Groundwater (HRZ): New boreholes at Romsey (4.8Ml/d)	2031	2.9	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

New Forest SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (HRZ-HSW): Romsey Town and Test valve (3.1Ml/d)	2026	6.2	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (site not exposed to construction (distance, no pathways for site-derived pollutants); site / features not exposed to operational effects of the aquifer recharge scheme (aquifer confined).
Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	2031	7.9	No effect	n/a - No LSE	-	No LSE I/C	
Groundwater (HRZ): New boreholes at Romsey (4.8Ml/d)	2031	8.5	No effect	n/a - No LSE	-	No LSE I/C	
Groundwater (HSW): Test MAR (5.5Ml/d)	2036	4.9	No effect	n/a - No LSE	-	No LSE I/C	

North Downs Woodlands SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Asset enhancement (KMW): Remove network constraint at Longfield (13Ml/d)	2026	3.9	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (site / feature not exposed to construction effects (distance, no pathways for site-derived pollutants) or effects from operation (distance, site / feature characteristics) from any options.
Recycling (KMW): Medway WTW to lake (14Ml/d)	2031	3.2	No effect	n/a - No LSE	-	No LSE I/C	
Groundwater (KME): Recommission Gravesend (2.7Ml/d)	2031	7.9	No effect	n/a - No LSE	-	No LSE I/C	
Desalination (KMW): Thames	2040	5.3	No effect	n/a - No	-	No LSE I/C	
Desalination (KMW): Thames	2040	5.3	No effect	n/a - No	-	No LSE I/C	
Desalination (KME): Isle of Sheppey	2046	7.2	No effect	n/a - No	-	No LSE I/C	
Desalination (KME): Isle of Sheppey	2046	7.2	No effect	n/a - No	-	No LSE I/C	
Desalination (KME): Isle of Sheppey	2046	7.2	No effect	n/a - No	-	No LSE I/C	
Desalination (KME): Isle of Sheppey	2046	7.2	No effect	n/a - No	-	No LSE I/C	

Outer Thames Estuary SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	3.6/DS	No effect	n/a - No LSE	-	No AE I/C*	This site will be affected by the Thanet desalination options (which will inevitably affect the same location within the site through operation, although 'in combination' construction effects will not occur) and potentially by the Isle of Sheppey desalination options (again, cumulatively) depending on the location of the outfall for that option. However, the zones of environmental change associated with e.g. saline plumes are very unlikely to overlap (so spatially coincident additive effects between the two desalination scheme locations would not be expected. The features of the site are
Recycling (KME): Sittingbourne industrial water reuse (7.5Ml/d)	2031	8.9	No effect	n/a - No LSE	-	No AE I/C*	
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	3.6/DS	No effect	n/a - No LSE	-	No AE I/C*	

Desalination (KTZ): East Thanet	2041	0/DS	LSE	No AE*	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.	No AE I/C*	likely to have a fairly low sensitivity to the magnitude of environmental change anticipated based on proxy data and evidence from schemes elsewhere, but there remains residual uncertainties regarding the effects in combination in the absence of detailed design information.
Desalination (KTZ): East Thanet	2041	0/DS	LSE	No AE	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, although construction of this will have been completed under option THA20. The qualifying features of the site will not be particularly exposed or sensitive to construction noise (etc) in the terrestrial environment. The sandbank supporting habitats are likely to have a low sensitivity to operation, being essentially low-diversity highly-mobile sandbank habitats; 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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	2.5	Uncertain	No AE	Adverse effects almost certainly avoidable based on proxy data and evidence from similar sites / schemes; site interest features likely to have a low sensitivity and exposure to the anticipated magnitude of environmental change associated with operation, assuming appropriate siting of outfall and operational parameters in relation to discharges. Construction effects unlikely and avoidable with established measures.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	2.5	Uncertain	No AE	Adverse effects almost certainly avoidable based on proxy data and evidence from similar sites / schemes; site interest features likely to have a low sensitivity and exposure to the anticipated magnitude of environmental change associated with operation, assuming appropriate siting of outfall and operational parameters in relation to discharges. Construction effects unlikely and avoidable with established measures.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	2.5	Uncertain	No AE	Adverse effects almost certainly avoidable based on proxy data and evidence from similar sites / schemes; site interest features likely to have a low sensitivity and exposure to the anticipated magnitude of environmental change associated with operation, assuming appropriate siting of outfall and operational parameters in relation to discharges. Construction effects unlikely and avoidable with established measures.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	2.5	Uncertain	No AE	Adverse effects almost certainly avoidable based on proxy data and evidence from similar sites / schemes; site interest features likely to have a low sensitivity and exposure to the anticipated magnitude of environmental change associated with operation, assuming appropriate siting of outfall and operational parameters in relation to discharges. Construction effects unlikely and avoidable with established measures.	No AE I/C*	
Bulk import (KTZ): SEW Canterbury to Near Canterbury	2050	6.1	No effect	n/a - No LSE	-	No AE I/C*	

Pagham Harbour Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	9.4	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (site / feature not exposed to construction effects (distance, no pathways for site-derived pollutants, mobile feature population will not be functionally reliant on habitats affected option); no additive effects from options.

Pagham Harbour SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	9.4	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (site / feature not exposed to construction effects (distance, no pathways for site-derived pollutants, mobile feature population will not be functionally reliant on habitats affected option); no additive effects from options.

Parkgate Down SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (KTZ): SEW Kingston to Near Canterbury (2Ml/d)	2026	6	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; only one option within 10km of site.

Peter`s Pit SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Asset enhancement (KMW): Remove network constraint at Longfield (13Ml/d)	2026	6.6	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (site / feature not exposed to construction effects (distance, no pathways for site-derived pollutants, mobile feature population will not be functionally reliant on habitats affected by closest schemes) or effects from operation (distance, site / feature characteristics).
Recycling (KMW): Medway WTW to lake (14Ml/d)	2031	1.4	No effect	n/a - No LSE	-	No LSE I/C	
Desalination (KMW): Thames	2040	10	No effect	n/a - No	-	No LSE I/C	
Desalination (KMW): Thames	2040	10	No effect	n/a - No	-	No LSE I/C	

Pevensey Levels Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (SHZ): Hastings to Darwell (15.3Ml/d)	2051	4.7/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	No AE alone; potetial effects avoidable with established measures (and options are essentially components of same scheme)

Pevensey Levels SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (SHZ): Hastings to Darwell (15.3Ml/d)	2051	4.7/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	No AE alone; potetial effects avoidable with established measures (and options are essentially components of same scheme)

Portsmouth Harbour Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	1.7/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Portsmouth Harbour is potentially exposed to environmental changes associated with two options, the transfer between Havant Thicket and Lower Itchen (construction only) and the Portsmouth Water Recycling scheme. These options have been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments indicate that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.
Recycling (HSE): Recharge of Havant Thicket from recycled water from Portsmouth Water (60Ml/d)	2035	5.4	Uncertain	No AE	This option has been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments have concluded that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	8.8	No effect	n/a - No LSE	-	No AE I/C	

Portsmouth Harbour SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	1.7/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Portsmouth Harbour is potentially exposed to environmental changes associated with two options, the transfer between Havant Thicket and Lower Itchen (construction only) and the Portsmouth Water Recycling scheme. These options have been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments indicate that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.
Recycling (HSE): Recharge of Havant Thicket from recycled water from Portsmouth Water (60Ml/d)	2035	5.4	Uncertain	No AE	This option has been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments have concluded that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	8.8	No effect	n/a - No LSE	-	No AE I/C	

Queendown Warren SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary

Recycling (KMW): Medway WTW to lake (14Ml/d)	2031	10	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (site / feature not exposed to construction effects (distance, no pathways for site-derived pollutants) or effects from operation (distance, site / feature characteristics).
Recycling (KME): Sittingbourne industrial water reuse (7.5Ml/d)	2031	4.9	No effect	n/a - No LSE	-	No LSE I/C	
Desalination (KME): Isle of Sheppey	2046	4.2	No effect	n/a - No	-	No LSE I/C	
Desalination (KME): Isle of Sheppey	2046	4.2	No effect	n/a - No	-	No LSE I/C	
Desalination (KME): Isle of Sheppey	2046	4.2	No effect	n/a - No	-	No LSE I/C	
Desalination (KME): Isle of Sheppey	2046	4.2	No effect	n/a - No	-	No LSE I/C	

River Itchen SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (HWZ-HAZ): Winchester to Andover bi-directional (15Ml/d)	2031	3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Potentially exposed to several construction schemes that may be coincident; however, adverse effects on the site can be avoided or mitigated with established measures.
Interzonal transfer (HRZ-HSW): Romsey Town and Test valve (3.1Ml/d)	2026	9.9	No effect	n/a - No LSE	-	No AE I/C	
Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	2031	0.4/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (HSE-HWZ): Lower Itchen WSW to Yew Hill bi-directional (74Ml/d)	2031	0.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Bulk import (HSE): PWC Source A to Lower Itchen WSW (21Ml/d)	2032	0/DS	LSE	No AE	Pipeline will cross site but effects avoidable with established measures	No AE I/C	
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	0/DS	Uncertain*	No AE	This option has been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments have concluded that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.	No AE I/C	
Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	2040	0.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Groundwater (HSW): Test MAR (5.5Ml/d)	2036	8.4	No effect	n/a - No LSE	-	No AE I/C	

River Lambourn SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (HKZ): Remove constraints at Newbury to increase yield (1.2Ml/d)	2028	5.4	No effect	n/a - No LSE	-	No AE I/C	Only potentially exposed to one option
Interzonal transfer (HAZ-HKZ): Andover to Kingsclere bi-directional (10Ml/d)	2050	9.9	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	2040	DS/DS	LSE	No AE	Pipeline will cross site but effects avoidable with established measures	No AE I/C	

Rook Clift SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	5.1	No effect	n/a - No LSE	-	No AE I/C	Not affected by any SW options
Groundwater (SNZ): Petersfield refurbishment (1.6Ml/d)	2029	DS	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	8	No effect	n/a - No LSE	-	No AE I/C	

Sandwich Bay SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (KTZ): SEW Kingston to Near Canterbury (2Ml/d)	2026	9.5/DS	No effect	n/a - No LSE	-	No LSE I/C	No LSE from any options alone; i/c effects will not occur, principally due to the absence of impact pathways to the site.
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	2.9/DS	No effect	n/a - No LSE	-	No LSE I/C	
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	2.9/DS	No effect	n/a - No LSE	-	No LSE I/C	
Desalination (KTZ): East Thanet	2041	2.9	No effect	n/a - No	-	No LSE I/C	
Desalination (KTZ): East Thanet	2041	2.9	No effect	n/a - No	-	No LSE I/C	
Bulk import (KTZ): SEW Canterbury to Near Canterbury	2050	9.7/DS	No effect	n/a - No LSE	-	No LSE I/C	

Singleton and Cocking Tunnels SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	5.6	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Potentially exposed to construction effects only; effects alone can be avoided in any case with normal measures.
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	4.5	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Solent and Dorset Coast SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (IOW): New borehole at Eastern Yar3 (1.5Ml/d)	2040	5.1/DS	No effect	n/a - No LSE	-	No AE I/C	This site is an ultimate down-catchment receptor for a number of options, although the interest and qualifying features of the site have a low sensitivity to construction in most terrestrial habitats, and construction-related in combination effects can be avoided with normal project-level measures. With regard to operation, only Sandown Recycling and Arun Desalination have the potential to adversely affect the site (both no adverse effects alone); these options will not result in environmental changes that will overlap to cause spatially coincident additive effects, and the alone effects will be too small to cumulatively affect the integrity of the site or its value to foraging terns.
Interzonal transfer (HWZ-HAZ): Winchester to Andover bi-directional (15Ml/d)	2031	14.2/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (HRZ-HSW): Romsey Town and Test valve (3.1Ml/d)	2026	7.1/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Recycling (IOW): Sandown (8.5Ml/d)	2031	0.8/DS	Uncertain*	No AE	This site will have a low exposure to potential environmental changes in the Yar due to its location and the dominance of marine influences. Construction effects can be avoided with established measures; environmental changes associated with operational are expected to be effectively nil as (a) recycled water in the Yar will be treated to an approriate standard and used on a put and take basis, and (b) discharges from the outfall (the existing Sandown WwTW LSO) into the English Channel will have a marginally higher salinity (only relative to existing discharges; salinity will be substantiall less than seawater) and higher concentrations of some nutrient (etc.) determinands as a result of reduced discharge volumes (total nutrient load will not change), although this discharge will be to a high dispersal environment and so quickly attenuated (far-field effects from a large 'plume' would not therefore be anticipated).	No AE I/C	
Recycling (SNZ): Littlehampton WTW with river discharge (15Ml/d)	2031	3.2	No effect	n/a - No LSE	-	No AE I/C	
Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	2031	4.5/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (HSE-HWZ): Lower Itchen WSW to Yew Hill bi-directional (74Ml/d)	2031	8.4/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Bulk import (HSE): PWC Source A to Lower Itchen WSW (21Ml/d)	2032	1.5/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	1.7/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.		No AE I/C
Recycling (HSE): Recharge of Havant Thicket from recycled water from Portsmouth Water (60Ml/d)	2035	3.5	Uncertain	No AE	This option has been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments have concluded that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.		No AE I/C
Groundwater (IOW): New boreholes at Newchurch (LGS)	2037	3.8/DS	No effect	n/a - No LSE	-		No AE I/C
Interzonal transfer (HAZ-HKZ): Andover to Kingsclere bi-directional (10Ml/d)	2050	DS	No effect	n/a - No LSE	-		No AE I/C
Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	2040	8.6/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.		No AE I/C
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	7.9/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.		No AE I/C
Groundwater (HRZ): New boreholes at Romsey (4.8Ml/d)	2031	11.9/DS	No effect	n/a - No LSE	-		No AE I/C
Groundwater (HAZ): Recommission Chilbolton (0.5Ml/d)	2073	DS/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.		No AE I/C
Groundwater (HSW): Test MAR (5.5Ml/d)	2036	2/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.		No AE I/C
Groundwater (HRZ): Remove constraints at Kings Sombourne (2.5Ml/d)	2031	DS/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.		No AE I/C
Desalination (SWZ): Tidal River Arun	2046	1.2	Uncertain	No AE	The likely location of the discharge is located in the English Channel in a high-dispersion environment, over 4km from the boundary of the site; as the site was recently designated to cover those foraging areas critical for breeding terns associated with the Solent harbour sites, it is reasonable to conclude that (a) the boundary of the site accurately reflects the core areas of functional habitat associated with the breeding sites and (b) that areas outside this boundary do not provide core areas of feeding habitat. As a result adverse effects from operation would not be expected. Construction effects are avoidable with normal measures.		No AE I/C
Desalination (SWZ): Tidal River Arun	2046	1.2	Uncertain	No AE	The likely location of the discharge is located in the English Channel in a high-dispersion environment, over 4km from the boundary of the site; as the site was recently designated to cover those foraging areas critical for breeding terns associated with the Solent harbour sites, it is reasonable to conclude that (a) the boundary of the site accurately reflects the core areas of functional habitat associated with the breeding sites and (b) that areas outside this boundary do not provide core areas of feeding habitat. As a result adverse effects from operation would not be expected. Construction effects are avoidable with normal measures.		No AE I/C
Bulk import (HKZ): T2ST to HKZ (5Ml/d)	2049	DS	No effect	n/a - No LSE		0	No AE I/C

Solent and Isle of Wight Lagoons SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (IOW): New borehole at Eastern Yar3 (1.5Ml/d)	2040	10.1/DS	No effect	n/a - No LSE	-	No AE I/C	Only one unit of this site is potentially exposed to environmental changes as a result of options in the WRMP, the lagoons located near Harbour Farm at Brading Marshes.

Recycling (IOW): Sandown (8.5Ml/d)	2031	4/DS	Uncertain*	No AE	This site will have a low exposure to low magnitude environmental changes in the Yar. Construction effects can be avoided with established measures. Environmental changes associated with operational are expected to be negligible and not adverse as (a) recycled water in the Yar will be treated to an approriate standard and used on a put and take basis in the river above the boundary of this site; (b) the connectivity of the Yar with Brading Marshes SSSI (hence terrestrial components of Solent and Southampton Water SPA/Ramsar and Solent and Isle of Wight Lagoons SAC) is low, and evidence suggests that the interest features of the SPA/Ramsar and SAC associated with Brading Marshes are not fundamentally reliant on flows within the Yar due to the separation of the river from the marshes and the direct management of water levels across the marshes. (sluices etc.); and (c) the discharges from the outfall (the existing Sandown WwTW LSO) will be to a high dispersal environment and so quickly attenuated (far-field effects from a large 'plume' would not	No AE I/C	Two options may potentially affect the Yar (Sandown Recycling and Newchurch Boreholes), which has some hydrological connectivity with the Harbour Farm lagoons. However, this connectivity is limited by the seawall around Brading Marshes. In summary, two of the lagoons are seawater-dominated, and essentially have salinities similar to seawater. The other two lagoons receive freshwater input from Brading Marshes and are hence brackish or low-salinity, but the water levels in Brading Marshes are largely controlled through direct management (sluices etc.) with some inundation occurring when the river is tidally locked, and so are not directly dependent on flows etc. within the Yar. As a result, adverse effects are not anticipated as a result of operation of either option in combination.
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	2.2	No effect	n/a - No LSE	-	No AE I/C	
Recycling (HSE): Recharge of Havant Thicket from recycled water from Portsmouth Water (60Ml/d)	2035	3.1	Uncertain	n/a - No LSE	-	No AE I/C	
Groundwater (IOW): New boreholes at Newchurch (LGS) (1.9Ml/d)	2037	6.5/DS	Uncertain	No AE	This option proposes replacing all three boreholes so that the site can operate to its licensed capacity (currently operating at 1.5Ml/d instead of 6Ml/d). The abstraction is from the Newchurch Lower Greensand boreholes and not from the existing Newchurch Chalk Well and Adit. Effects on flows in Yar due to GW drawdown cannot be accurately stated due to absence of detailed groundwater modelling for the source, but are likely to be small as much of the baseflow in the Yar is from the chalk rather than the Lower Greensand; there is an Non-Deterioration investigation timetabled to complete in 2027 that is likely to confirm this. Flows from the Yar into Bembridge harbour are managed by a sluice, and effects on the marine components of the SPA/Ramsar are expected to be nominal in relation to the dominance of tidal influence in the harbour. With regard to the Brading Marshes components of the SPA/Ramsar, these are below sea level so are protected from seawater inundation by the seawall and tidal gates at the end of the Yar; water levels in Brading Marshes are are largely controlled through direct management (sluices etc.) with some inundation occurring when the river is tidally locked, and are so not directly dependent on flows etc. within the Yar. Any effects of the option on water-supply to Brading Marshes will therefore be very small, and substantially moderated in any case by the interventionist water level management of the marshes and by other surface water and rainfall inputs to the marshes. As noted, there is likely to be little / no exposure to operational effects due to location / relationship of the lagoon network adjacent to Brading Marshes and Bembridge Harbour relative to Yar (in summary, two of the lagoons are seawater-dominated, and essentially have salinities similar to seawater. The other two lagoons receive freshwater input from Brading Marshes and are hence brackish or low-salinity, but the water levels in Brading Marshes are largely controlled through direct management (sluices etc.) with some inundation occurring when the river is tidally locked, and so not directly	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	7.1	No effect	n/a - No LSE	-	No AE I/C	

Solent and Southampton Water Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (IOW): New borehole at Eastern Yar3 (1.5Ml/d)	2040	7.8/DS	No effect	n/a - No LSE	-	No AE I/C	This site is the downstream receptor for a number of schemes that may result in environmental changes associated with construction; however, the majority of these schemes are unlikely to occur in the same timescale, and effects can be reliably avoided with established measures. Two options (Testwood MAR and Romsey) have theoretical pathways for operational effects, although the available evidence from the alone assessments indicates that these pathways will not be realised; in combination effects are not therefore anticipated.
Interzonal transfer (HWZ-HAZ): Winchester to Andover bi-directional (15Ml/d)	2031	16.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (HRZ-HSW): Romsey Town and Test valve (3.1Ml/d)	2026	5.1/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Recycling (IOW): Sandown (8.5Ml/d)	2031 1.7/DS	Uncertain*	No AE	This site will have a low exposure to low magnitude environmental changes in the Yar. Construction effects can be avoided with established measures. Environmental changes associated with operational are expected to be negligible and not adverse as (a) recycled water in the Yar will be treated to an approriate standard and used on a put and take basis in the river above the boundary of this site; (b) the connectivity of the Yar with Brading Marshes SSSI (hence terrestrial components of Solent and Southampton Water SPA/Ramsar and Solent and Isle of Wight Lagoons SAC) is low, and evidence suggests that the interest features of the SPA/Ramsar and SAC associated with Brading Marshes are not fundamentally reliant on flows within the Yar due to the separation of the river from the marshes and the direct management of water levels across the marshes. (sluices etc.); and (c) the discharges from the outfall (the existing Sandown WwTW LSO) will be to a high dispersal environment and so quickly attenuated (far-field effects from a large 'plume' would not	No AE I/C
Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	2031 3.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Interzonal transfer (HSE-HWZ): Lower Itchen WSW to Yew Hill bi-directional (74Ml/d)	2031 10.7/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Bulk import (HSE): PWC Source A to Lower Itchen WSW (21Ml/d)	2032 3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035 3.2/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Groundwater (IOW): New boreholes at Newchurch (LGS) (1.9Ml/d)	2037 4.2/DS	Uncertain	No AE	This option proposes replacing all three boreholes so that the site can operate to its licensed capacity (currently operating at 1.5Ml/d instead of 6Ml/d). The abstraction is from the Newchurch Lower Greensand boreholes and not from the existing Newchurch Chalk Well and Adit. Effects on flows in Yar due to GW drawdown cannot be accurately stated due to absence of detailed groundwater modelling for the source, but are likely to be small as much of the baseflow in the Yar is from the chalk rather than the Lower Greensand; there is an Non-Deterioration investigation timetabled to complete in 2027 that is likely to confirm this. Flows from the Yar into Bembridge harbour are managed by a sluice, and effects on the marine components of the SPA/Ramsar are expected to be nominal in relation to the dominance of tidal influence in the harbour. With regard to the Brading Marshes components of the SPA/Ramsar, these are below sea level so are protected from seawater inundation by the seawall and tidal gates at the end of the Yar; water levels in Brading Marshes are are largely controlled through direct management (sluices etc.) with some inundation occurring when the river is tidally locked, and are so not directly dependent on flows etc. within the Yar. Any effects of the option on water-supply to Brading Marshes will therefore be very small, and substantially moderated in any case by the interventionist water level management of the marshes and by other surface water and rainfall inputs to the marshes. As a result, adverse effects are not anticipated as a result of	No AE I/C
Interzonal transfer (HAZ-HKZ): Andover to Kingsclere bi-directional (10Ml/d)	2050 DS	No effect	n/a - No LSE	-	No AE I/C
Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	2040 DS/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Groundwater (HRZ): New boreholes at Romsey (4.8Ml/d)	2031 10/DS	No effect	n/a - No LSE	-	No AE I/C
Groundwater (HAZ): Recommission Chilbolton (0.5Ml/d)	2073 DS/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Groundwater (HSW): Test MAR (5.5Ml/d)	2036 0.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C

Groundwater (HRZ): Remove constraints at Kings Sombourne (2.5Ml/d)	2031	DS/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Bulk import (HKZ): T2ST to HKZ (5Ml/d)	2049	DS	No effect	n/a - No LSE		0 No AE I/C

Solent and Southampton Water SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (IOW): New borehole at Eastern Yar3 (1.5Ml/d)	2040	7.8/DS	No effect	n/a - No LSE	-	No AE I/C	This site is the downstream receptor for a number of schemes that may result in environmental changes associated with construction; however, the majority of these schemes are unlikely to occur in the same timescale, and effects can be reliably avoided with established measures. Two options (Testwood MAR and Romsey) have theoretical pathways for operational effects, although the available evidence from the alone assessments indicates that these pathways will not be realised; in combination effects are not therefore anticipated.
Interzonal transfer (HWZ-HAZ): Winchester to Andover bi-directional (15Ml/d)	2031	16.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (HRZ-HSW): Romsey Town and Test valve (3.1Ml/d)	2026	5.2/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Recycling (IOW): Sandown (8.5Ml/d)	2031	1.7/DS	Uncertain*	No AE	This site will have a low exposure to low magnitude environmental changes in the Yar. Construction effects can be avoided with established measures. Environmental changes associated with operational are expected to be negligible and not adverse as (a) recycled water in the Yar will be treated to an approriate standard and used on a put and take basis in the river above the boundary of this site; (b) the connectivity of the Yar with Brading Marshes SSSI (hence terrestrial components of Solent and Southampton Water SPA/Ramsar and Solent and Isle of Wight Lagoons SAC) is low, and evidence suggests that the interest features of the SPA/Ramsar and SAC associated with Brading Marshes are not fundamentally reliant on flows within the Yar due to the separation of the river from the marshes and the direct management of water levels across the marshes. (sluices etc.); and (c) the discharges from the outfall (the existing Sandown WwTW LSO) will be to a high dispersal environment and so quickly attenuated (far-field effects from a large 'plume' would not	No AE I/C	
Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	2031	3.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (HSE-HWZ): Lower Itchen WSW to Yew Hill bi-directional (74Ml/d)	2031	10.7/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Bulk import (HSE): PWC Source A to Lower Itchen WSW (21Ml/d)	2032	3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	3.2/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Groundwater (IOW): New boreholes at Newchurch (LGS) (1.9Ml/d)	2037	4.2/DS	Uncertain	No AE	This option proposes replacing all three boreholes so that the site can operate to its licensed capacity (currently operating at 1.5Ml/d instead of 6Ml/d). The abstraction is from the Newchurch Lower Greensand boreholes and not from the existing Newchurch Chalk Well and Adit. Effects on flows in Yar due to GW drawdown cannot be accurately stated due to absence of detailed groundwater modelling for the source, but are likely to be small as much of the baseflow in the Yar is from the chalk rather than the Lower Greensand; there is an Non-Deterioration investigation timetabled to complete in 2027 that is likely to confirm this. Flows from the Yar into Bembridge harbour are managed by a sluice, and effects on the marine components of the SPA/Ramsar are expected to be nominal in relation to the dominance of tidal influence in the harbour. With regard to the Brading Marshes components of the SPA/Ramsar, these are below sea level so are protected from seawater inundation by the seawall and tidal gates at the end of the Yar; water levels in Brading Marshes are are largely controlled through direct management (sluices etc.) with some inundation occurring when the river is tidally locked, and are so not directly dependent on flows etc. within the Yar. Any effects of the option on water-supply to Brading Marshes will therefore be very small, and substantially moderated in any case by the interventionist water level management of the marshes and by other surface water and rainfall inputs to the marshes. As a result, adverse effects are not anticipated as a result of	No AE I/C	

Interzonal transfer (HAZ-HKZ): Andover to Kingsclere bi-directional (10Ml/d)	2050 DS	No effect	n/a - No LSE	-	No AE I/C	
Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	2040 DS/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Groundwater (HRZ): New boreholes at Romsey (4.8Ml/d)	2031 10/DS	No effect	n/a - No LSE	-	No AE I/C	
Groundwater (HAZ): Recommission Chilbolton (0.5Ml/d)	2073 DS/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Groundwater (HSW): Test MAR (5.5Ml/d)	2036 0.3/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Groundwater (HRZ): Remove constraints at Kings Sombourne (2.5Ml/d)	2031 DS/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Bulk import (HKZ): T2ST to HKZ (5Ml/d)	2049 DS	No effect	n/a - No LSE		0 No AE I/C	

Solent Maritime SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (IOW): New borehole at Eastern Yar3 (1.5Ml/d)	2040	8.4	No effect	n/a - No LSE	-	No AE I/C	This site is the downstream receptor for a number of schemes that may result in environmental changes associated with construction; however, the majority of these schemes are unlikely to occur in the same timescale, and effects can be reliably avoided with established measures. With regard to operational effects, two options (Testwood MAR and Romsey) will have no significant effects due to technical aspects of the option (i.e. for the European site to be affected the option would not be operating as required / intended). Furthermore, the anticiptaed zones of environmental change associated with the other option with operational pathways (Portsmouth Water) will not overlap spatially, so geographically coincident in combination effects will not occur; it should be noted that ongoing investigative work for the Portsmouth Water SRO gated process indicates that this site will not be adversely affected. Consequently, adverse effects on itegrity in combination are not therefore anticipated.
Interzonal transfer (HWZ-HAZ): Winchester to Andover bi-directional (15Ml/d)	2031	16.7/DS	No effect	n/a - No LSE	-	No AE I/C	
Interzonal transfer (HRZ-HSW): Romsey Town and Test valve (3.1Ml/d)	2026	5.8/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Recycling (IOW): Sandown (8.5Ml/d)	2031	6.4	No effect	n/a - No	-	No AE I/C	
Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	2031	3.4/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (HSE-HWZ): Lower Itchen WSW to Yew Hill bi-directional (74Ml/d)	2031	12/DS	Uncertain*	n/a - No LSE	-	No AE I/C	
Bulk import (HSE): PWC Source A to Lower Itchen WSW (21Ml/d)	2032	5.7/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Bulk import (HSE): Havant Thicket Reservoir to Lower Itchen WSW (90Ml/d)	2035	0/DS	Uncertain*	No AE	This option has been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments have concluded that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.	No AE I/C	
Recycling (HSE): Recharge of Havant Thicket from recycled water from Portsmouth Water (60Ml/d)	2035	0/DS	Uncertain	No AE	This option has been subject to project level design and investigations through the SRO gated process, which provides the best-available environmental data and assessment for the option (see https://www.southernwater.co.uk/media/5424/gate-2-annex-3-havant-thicket-technical-redacted.pdf). In summary, these assessments have concluded that adverse effects will not occur as a result of the option, subject to the implementation of mitigation measures identified through the SRO gated process, and the HRA of the WRMP necessarily reflects this.	No AE I/C	
Groundwater (IOW): New boreholes at Newchurch (LGS)	2037	6.9	No effect	n/a - No LSE	-	No AE I/C	

Interzonal transfer (HAZ-HKZ): Andover to Kingsclere bi-directional (10Ml/d)	2050	DS		No effect	n/a - No LSE	-	No AE I/C
Bulk import (HWZ): T2ST to Yew Hill (95Ml/d)	2040	DS/DS		Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	3.3/DS		Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Groundwater (HRZ): New boreholes at Romsey (4.8Ml/d)	2031	10.6/DS		No effect	n/a - No LSE	-	No AE I/C
Groundwater (HAZ): Recommission Chilbolton (0.5Ml/d)	2073	DS/DS		Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Groundwater (HSW): Test MAR (5.5Ml/d)	2036	1/DS		Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Groundwater (HRZ): Remove constraints at Kings Sombourne (2.5Ml/d)	2031	DS/DS		Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C
Bulk import (HKZ): T2ST to HKZ (5Ml/d)	2049	DS		No effect	n/a - No LSE		0 No AE I/C

South Wight Maritime SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (IOW): New borehole at Eastern Yar3 (1.5Ml/d)	2040	4.4	No effect	n/a - No LSE	-	No AE I/C	This option is considered to be exposed to environmental changes from one option only (Sandown Recycling), which may affect the site through discharges via the LSO. The other options will have small effects on the Yar although these will not affect this marine site due to its location outsdie and will not affect this site due (site is located outside Bembridge harbour and so exposure to environmental changes associated with the option operation will be inconsequential). In combination effects between options are not therefore anticipated.
Recycling (IOW): Sandown (8.5Ml/d)	2031	0.9	Uncertain	No AE	This site will have a low exposure to potential environmental changes in the Yar due to its location and the dominance of marine influences. Construction effects can be avoided with established measures; environmental changes associated with operational are expected to be effectively nil as (a) recycled water in the Yar will be treated to an approriate standard and used on a put and take basis, and (b) discharges from the outfall (the existing Sandown WwTW LSO) into the English Channel will have a marginally higher salinity (only relative to existing discharges; salinity will be substantiall less than seawater) and higher concentrations of some nutrient (etc.) determinands as a result of reduced discharge volumes (total nutrient load will not change), although this discharge will be to a high dispersal environment and so quickly attenuated (far-field effects from a large 'plume' would not therefore be anticipated).	No AE I/C	
Groundwater (IOW): New boreholes at Newchurch (LGS)	2037	3.9	No effect	n/a - No LSE	-	No AE I/C	

Stodmarsh Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (KTZ): SEW Kingston to Near Canterbury (2Ml/d)	2026	5.9	No effect	n/a - No LSE	-	No AE I/C	This site or its features is only potentially exposed to construction effects from SW options; these effects can be avoided with established measures, and construction periods for the options are unlikely to overlap.
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	0.4	No effect	n/a - No LSE	-	No AE I/C	
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	0.4	No effect	n/a - No LSE	-	No AE I/C	
Desalination (KTZ): East Thanet	2041	5.7	No effect	n/a - No	-	No AE I/C	
Desalination (KTZ): East Thanet	2041	5.7	No effect	n/a - No	-	No AE I/C	
Bulk import (KTZ): SEW Canterbury to Near Canterbury (20Ml/d)	2050	0.4/DS		Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C

Stodmarsh SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary

Bulk import (KTZ): SEW Kingston to Near Canterbury (2Ml/d)	2026	5.9	No effect	n/a - No LSE	-	No AE I/C	This site or its features is only potentially exposed to construction effects from SW options; these effects can be avoided with established measures, and construction periods for the options are unlikely to overlap.
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	0.3	No effect	n/a - No LSE	-	No AE I/C	
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	0.3	No effect	n/a - No LSE	-	No AE I/C	
Desalination (KTZ): East Thanet	2041	5.3	No effect	n/a - No	-	No AE I/C	
Desalination (KTZ): East Thanet	2041	5.3	No effect	n/a - No	-	No AE I/C	
Bulk import (KTZ): SEW Canterbury to Near Canterbury (20Ml/d)	2050	0.4/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Stodmarsh SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (KTZ): SEW Kingston to Near Canterbury (2Ml/d)	2026	5.9	No effect	n/a - No LSE	-	No AE I/C	This site or its features is only potentially exposed to construction effects from SW options; these effects can be avoided with established measures, and construction periods for the options are unlikely to overlap.
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	0.5	No effect	n/a - No LSE	-	No AE I/C	
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	0.5	No effect	n/a - No LSE	-	No AE I/C	
Desalination (KTZ): East Thanet	2041	5.7	Uncertain	No AE	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.	No AE I/C	
Desalination (KTZ): East Thanet	2041	5.7	Uncertain	No AE	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.	No AE I/C	
Bulk import (KTZ): SEW Canterbury to Near Canterbury (20Ml/d)	2050	0.5/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Tankerton Slopes and Swalecliffe SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	4.1	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (site / feature not exposed to construction effects (distance, no pathways for site-derived pollutants, mobile features sedentary / limited to site) or effects from operation (distance, feature characteristics).
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	4.1	No effect	n/a - No LSE	-	No LSE I/C	
Bulk import (KTZ): SEW Canterbury to Near Canterbury	2050	5.8	No effect	n/a - No LSE	-	No LSE I/C	

Thames Estuary and Marshes Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary

Asset enhancement (KMW): Remove network constraint at Longfield (13Ml/d)	2026	2.9/DS	No effect	n/a - No LSE	-	No AE I/C*	This site is potentially exposed to operational effects from eight options: the three Isle of Sheppey desalination schemes (will ultimately operate additively at one location), four Thames Desalination options (will also operate additively at one location), plus the Gravesend groundwater source (environmental changes associated with option may overlap spatially with changes associated with the Thames Desalination options). The environmental changes associated with the two desalination sites are unlikely to coincide geographically. Adverse effects alone are not expected as a result of the Gravesend scheme (given the small scale of the abstraction and the likely low exposure of estuarine habitats in this area to alterations in flows of local streams) although the North Kent Marshes are subject to WINEP investigations that will not report for several years. However the operation of the desalination plants will necessarily operate additively (i.e. the initial 20Ml/d plants will be supplemented additional treatment plants), although construction effects associated with the outfalls will only occur once. Based on proxy information from other sites presented in the alone assessment it is considered that these desalination options will not individually result in adverse effects on this site, and that potential effects can be avoided through the design stage; however, there is some residual uncertainty regarding this conclusion given the absence of detailed design information. Note that this does not take account of potential in combination effects with Beckton.
Recycling (KME): Sittingbourne industrial water reuse (7.5Ml/d)	2031	9.9	No effect	n/a - No LSE	-	No AE I/C*	
Groundwater (KME): Recommission Gravesend (2.7Ml/d)	2031	2.1	Uncertain	No AE*	Adverse effects alone are not expected as a result of the Groundwater (KME): Recommission Gravesend (2.7Ml/d) scheme given the small scale of the abstraction and the likely low exposure of estuarine habitats in this area to alterations in flows of local streams, the North Kent Marshes are subject to WINEP investigations that will provide an evidence base for assessment at the project level.	No AE I/C*	
Bulk import (SNZ): SES to SNZ (10Ml/d)	2034	DS/DS	No effect	n/a - No LSE	-	No AE I/C*	
Desalination (KMW): Thames Estuary	2040	3.8/DS	Uncertain	No AE*	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.	No AE I/C*	
Desalination (KMW): Thames Estuary	2040	3.8/DS	Uncertain	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	1.8	Uncertain	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	1.8	Uncertain	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	1.8	Uncertain	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	1.8	Uncertain	No AE*	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.	No AE I/C*	

Thames Estuary and Marshes SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Asset enhancement (KMW): Remove network constraint at Longfield (13Ml/d)	2026	4.4/DS	No effect	n/a - No LSE	-	No AE I/C*	This site is potentially exposed to operational effects from eight options: the three Isle of Sheppey desalination schemes (will ultimately operate additively at one location), four Thames Desalination options (will also operate additively at one

Recycling (KME): Sittingbourne industrial water reuse (7.5Ml/d)	2031	10	No effect	n/a - No LSE	-	No AE I/C*	location), plus the Gravesend groundwater source (environmental changes associated with option may overlap spatially with changes associated with the Thames Desalination options). The environmental changes associated with the two desalination sites are unlikely to coincide geographically. Adverse effects alone are not expected as a result of the Gravesend scheme (given the small scale of the abstraction and the likely low exposure of estuarine habitats in this area to alterations in flows of local streams) although the North Kent Marshes are subject to WINEP investigations that will not report for several years. However the operation of the desalination plants will necessarily operate additively (i.e. the initial 20Ml/d plants will be supplemented additional treatment plants), although construction effects associated with the outfalls will only occur once. Based on proxy information from other sites presented in the alone assessment it is considered that these desalination options will not individually result in adverse effects on this site, and that potential effects can be avoided through the design stage; however, there is some residual uncertainty regarding this conclusion given the absence of detailed design information. Note that this does not take account of potential in combination effects with Beckton.
Groundwater (KME): Recommission Gravesend (2.7Ml/d)	2031	3.3	Uncertain	No AE*	Adverse effects alone are not expected as a result of the Groundwater (KME): Recommission Gravesend (2.7Ml/d) scheme given the small scale of the abstraction and the likely low exposure of estuarine habitats in this area to alterations in flows of local streams, the North Kent Marshes are subject to WINEP investigations that will provide an evidence base for assessment at the project level.	No AE I/C*	
Bulk import (SNZ): SES to SNZ (10Ml/d)	2034	DS/DS	No effect	n/a - No LSE	-	No AE I/C*	
Desalination (KMW): Thames Estuary	2040	5.2/DS	Uncertain	No AE*	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.	No AE I/C*	
Desalination (KMW): Thames Estuary	2040	5.2/DS	Uncertain	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	1.9	Uncertain	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	1.9	Uncertain	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	1.9	Uncertain	No AE*	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.	No AE I/C*	
Desalination (KME): Isle of Sheppey	2046	1.9	Uncertain	No AE*	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.	No AE I/C*	

Thanet Coast and Sandwich Bay Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (KTZ): SEW Kingston to Near Canterbury (2Ml/d)	2026	7.6/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Potential construction effects associated with the options can be avoided with established measures including (for the Thanet Desalination outfall) directional drill or similar to avoid direct impacts on the site; adverse effects would not be expected (similar pipelines and cables have been constructed across the Thanet foreshore without adverse effects). The Thanet desalination options have the potential to
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	2.9/DS	No effect	n/a - No LSE	-	No AE I/C	

Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	2.9/DS	No effect	n/a - No LSE	-	No AE I/C	operate cumulatively to affect the site or its features during operation; however, adverse effects as a result of operational discharges will not occur with appropriate design / location of the outfall, and near-shore effects (e.g. disturbance of birds from operational plant) can be avoided through design. Adverse i/c effects do not therefore appear to be a potentially unavoidable consequence of option delivery.
Desalination (KTZ): East Thanet	2041	0/DS	LSE	No AE	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.	No AE I/C	
Desalination (KTZ): East Thanet	2041	0/DS	LSE	No AE	Adverse effects alone will not occur (construction of outfall completed under Option THA20; effects from construction at the desal plant avoidable with normal measures e.g. timing works); 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.	No AE I/C	
Bulk import (KTZ): SEW Canterbury to Near Canterbury (20Ml/d)	2050	5.6/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Thanet Coast and Sandwich Bay SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Bulk import (KTZ): SEW Kingston to Near Canterbury (2Ml/d)	2026	9.9/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Potential construction effects associated with the options can be avoided with established measures including (for the Thanet Desalination outfall) directional drill or similar to avoid direct impacts on the site; adverse effects would not be expected (similar pipelines and cables have been constructed across the Thanet foreshore without adverse effects). The Thanet desalination options have the potential to operate cumulatively to affect the site or its features during operation; however, adverse effects as a result of operational discharges will not occur with appropriate design / location of the outfall, and near-shore effects (e.g. disturbance of birds from operational plant) can be avoided through design. Adverse i/c effects do not therefore appear to be a potentially unavoidable consequence of option delivery.
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	2.9/DS	No effect	n/a - No LSE	-	No AE I/C	
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	2.9/DS	No effect	n/a - No LSE	-	No AE I/C	
Desalination (KTZ): East Thanet	2041	0/DS	LSE	No AE	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.	No AE I/C	
Desalination (KTZ): East Thanet	2041	0/DS	LSE	No AE	Adverse effects alone will not occur (construction of outfall completed under Option THA20; effects from construction at the desal plant avoidable with normal measures e.g. timing works); 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.	No AE I/C	
Bulk import (KTZ): SEW Canterbury to Near Canterbury (20Ml/d)	2050	5.6/DS	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

Thanet Coast SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	2.9/DS	No effect	n/a - No LSE	-	No AE I/C	Potential construction effects associated with the options can be avoided with established measures including (for the Thanet Desalination outfall) directional drill or similar to avoid direct impacts on the site; adverse effects would not be expected (similar pipelines and cables have been constructed across the Thanet foreshore without adverse effects). The Thanet desalination options have the potential to
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	2.9/DS	No effect	n/a - No LSE	-	No AE I/C	

Desalination (KTZ): East Thanet	2041	0.3/DS	LSE	No AE	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.	No AE I/C	operate cumulatively to affect the site or its features during operation; however, adverse effects as a result of operational discharges will not occur with appropriate design / location of the outfall, and near-shore effects can be avoided through design. Adverse i/c effects do not therefore appear to be a potentially unavoidable consequence of option delivery.
Desalination (KTZ): East Thanet	2041	0.3/DS	LSE	No AE	Adverse effects alone will not occur (construction completed under Option THA20); 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.	No AE I/C	

The Mens SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Recycling (SNZ): Littlehampton WTW with river discharge (15Ml/d)	2031	3.6	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	Potentially exposed to construction effects only; most schemes not temporally coincident and effects alone can be avoided in any case with normal measures.
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	3.6	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Interzonal transfer (SNZ-SWZ): Pulborough to Worthing	2040	4.3	No effect	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Bulk import (SNZ): Havant Thicket Reservoir to Pulborough (50Ml/d)	2040	3.9	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Groundwater (SNZ): New borehole at Petworth (4Ml/d)	2031	2.3	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	
Groundwater (SNZ): Reinstate West Chiltington (3.1Ml/d)	2029	8.3	No effect	n/a - No LSE	-	No AE I/C	
Recycling (SNZ): Horsham with storage at Pulborough (6.8Ml/d)	2058	3.7	Uncertain*	No AE	Adverse effects alone will not occur (no pathways, magnitude of change too small, etc.) or are clearly avoidable with scheme-level measures that are known to be available, achievable and likely to be effective; residual effects after mitigation (etc.) likely to be nil or very small, so low risk of i/c effects.	No AE I/C	

The New Forest Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (HRZ-HSW): Romsey Town and Test valve (3.1Ml/d)	2026	6.2	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (site not exposed to construction effects (distance, no pathways for site-derived pollutants., construction not coincident); operational effects from groundwater options nil (distance or confined nature of aquifer) therefore no potential for i/c effects).
Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	2031	7.9	No effect	n/a - No LSE	-	No LSE I/C	
Groundwater (HRZ): New boreholes at Romsey (4.8Ml/d)	2031	8.5	No effect	n/a - No LSE	-	No LSE I/C	
Groundwater (HSW): Test MAR (5.5Ml/d)	2036	4.9	No effect	n/a - No LSE	-	No LSE I/C	

The New Forest SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (HRZ-HSW): Romsey Town and Test valve (3.1Ml/d)	2026	5.7	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (site not exposed to construction effects (distance, no pathways for site-derived pollutants., construction not coincident); operational effects from groundwater options nil (distance or confined nature of aquifer) therefore no potential for i/c effects).
Interzonal transfer (HSE-HSW): Yew Hill WSW to River Test WSW bi-directional (60Ml/d)	2031	6.6	No effect	n/a - No LSE	-	No LSE I/C	
Bulk import (HSE): PWC Source A to Lower Itchen WSW (21Ml/d)	2032	10	No effect	n/a - No LSE	-	No LSE I/C	

Groundwater (HRZ): New boreholes at Romsey (4.8Ml/d)	2031	8.2 No effect	n/a - No LSE	-	No LSE I/C	
Groundwater (HSW): Test MAR (5.5Ml/d)	2036	3.4 No effect	n/a - No LSE	-	No LSE I/C	

The Swale Ramsar	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	2.5/DS	No effect	n/a - No LSE	-	No AE I/C	Four options have elements that may result in environmental changes that affect this site (the three Isle of Sheppey Desalination schemes, and the Sittingbourne Industrial Re-use option). With regard to the desalination schemes, construction of the transfer main will need to cross this site, although impacts associated with this will only occur once (for the earliest of the modular options) and this will not coincide with any works required for the Sittingbourne scheme; in addition, adverse effects alone can be avoided with established measures. With regard to operation it is likely that The Swale site itself, or its mobile features if using Milton Creek, will be affected by the Sittingbourne Industrial re-use scheme; the alone assessment indicates that the environmental changes associated with this option will not adversely affect the integrity of the European site (although there are some residual uncertainties that can only be resolved with scheme-level investigations). With regard to the Isle of Sheppey Desalination schemes, the location and characteristics of the site relative to the likely zone of influence for the environmental changes associated with the option (e.g. saline plumes) is likely to ensure that direct effects on the site habitats will not occur; however the mobile species may be exposed to these changes when using other sites in the North Kent / Essex Estuaries complex, depending on the precise design of the desalination schemes and outfall design / location. The desalination options are inherently cumulative in this regard, and whilst proxy data from other sites / schemes suggests that environmental changes will be relatively small and adverse effects avoidable there are residual uncertainties that cannot be resolved at the plan level with the scheme data currently available.
Recycling (KME): Sittingbourne industrial water reuse (7.5Ml/d)	2031	0.1/DS	LSE	No AE*	This option was assessed as having No Adverse Effects at WRMP19 and there have been no substantive amendments in either the scheme or the environmental baseline to alter this conclusion. In summary, the net effect of the scheme operation would be to reduce non-saline inputs to Milton Creek from Sittingbourne WwTW by ~7.5Mld; discharges from the WwTW are likely to form a significant component of the non-saline flows in this creek (the permitted discharge of recycled water is ~118Ml/d) and the volumes recovered through recycling will typically be a small proportion of this (note, a proportion of this water would still enter the Swale via the paper mill post-process discharge, although the paper-making process will to some extent be consumptive). The principal issues for The Swale SPA/Ramsar are the potential effects on Milton Creek as 'functional habitat'; and the small reduction in non-saline inputs to The Swale via Milton Creek (note, all potential construction effects can be avoided with established measures). With regard to functional habitat, Milton Creek will be of low value in this regard as (a) it is a constrained creek / channel in a high-disturbance urban / industrial area that will inherently have a low attractiveness for the qualifying features (assuming there are no dominating non-natural attractants) and (b) is substantially lower value than the extensive areas of equivalent mud-flat and creek habitat available in the SPA/Ramsar; it is therefore very unlikely that the creek is critical to the functional integrity of the site, and environmental changes in this location would not be expected to adversely affect these sites. With regard to effects on habitats in The Swale itself, the possibility of localised and minor changes to the invertebrate fauna of The Swale as a result of reductions in non-saline inputs around the confluence with Milton Creek cannot be excluded; however, the reduction of ~7.5Ml/d will be small relative to the inputs from the creek (from the WwTW and surface water catchment in Sittingbourne), and likely inconsequential in relation to the tidal turnover and dominance of saline inputs; furthermore, any minor and localised shifts in biotope would not fundamentally alter the value of the area to the qualifying features; however, aspects of this can only be confirmed with the benefit of project-level survey	No AE I/C	
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	2.5/DS	No effect	n/a - No LSE	-	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	0 Uncertain		No AE	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.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	0/DS	LSE	No AE	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.	No AE I/C	

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Desalination (KME): Isle of Sheppey	2046	0 Uncertain	No AE	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.	No AE I/C	
Bulk import (KTZ): SEW Canterbury to Near Canterbury	2050	7.5 No effect	n/a - No LSE	-	No AE I/C	

The Swale SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	2.5/DS	No effect	n/a - No LSE	-	No AE I/C	Four options have elements that may result in environmental changes that affect this site (the three Isle of Sheppey Desalination schemes, and the Sittingbourne Industrial Re-use option). With regard to the desalination schemes, construction of the transfer main will need to cross this site, although impacts associated with this will only occur once (for the earliest of the modular options) and this will not coincide with any works required for the Sittingbourne scheme; in addition, adverse effects alone can be avoided with established measures. With regard to operation it is likely that The Swale site itself, or its mobile features if using Milton Creek, will be affected by the Sittingbourne Industrial re-use scheme; the alone assessment indicates that the environmental changes associated with this option will not adversely affect the integrity of the European site (although there are some residual uncertainties that can only be resolved with scheme-level investigations). With regard to the Isle of Sheppey Desalination schemes, the location and characteristics of the site relative to the likely zone of influence for the environmental changes associated with the option (e.g. saline plumes) is likely to ensure that direct effects on the site habitats will not occur; however the mobile species may be exposed to these changes when using other sites in the North Kent / Essex Estuaries complex, depending on the precise design of the desalination schemes and outfall design / location. The desalination options are inherently cumulative in this regard, and whilst proxy data from other sites / schemes suggests that environmental changes will be relatively small and adverse effects avoidable there are residual uncertainties that cannot be resolved at the plan level with the scheme data currently available.
Recycling (KME): Sittingbourne industrial water reuse (7.5Ml/d)	2031	0.1/DS	LSE	No AE*	This option was assessed as having No Adverse Effects at WRMP19 and there have been no substantive amendments in either the scheme or the environmental baseline to alter this conclusion. In summary, the net effect of the scheme operation would be to reduce non-saline inputs to Milton Creek from Sittingbourne WwTW by ~7.5Mld; discharges from the WwTW are likely to form a significant component of the non-saline flows in this creek (the permitted discharge of recycled water is ~118Ml/d) and the volumes recovered through recycling will typically be a small proportion of this (note, a proportion of this water would still enter the Swale via the paper mill post-process discharge, although the paper-making process will to some extent be consumptive). The principal issues for The Swale SPA/Ramsar are the potential effects on Milton Creek as 'functional habitat'; and the small reduction in non-saline inputs to The Swale via Milton Creek (note, all potential construction effects can be avoided with established measures). With regard to functional habitat, Milton Creek will be of low value in this regard as (a) it is a constrained creek / channel in a high-disturbance urban / industrial area that will inherently have a low attractiveness for the qualifying features (assuming there are no dominating non-natural attractants) and (b) is substantially lower value than the extensive areas of equivalent mud-flat and creek habitat available in the SPA/Ramsar; it is therefore very unlikely that the creek is critical to the functional integrity of the site, and environmental changes in this location would not be expected to adversely affect these sites. With regard to effects on habitats in The Swale itself, the possibility of localised and minor changes to the invertebrate fauna of The Swale as a result of reductions in non-saline inputs around the confluence with Milton Creek cannot be excluded; however, the reduction of ~7.5Ml/d will be small relative to the inputs from the creek (from the WwTW and surface water catchment in Sittingbourne), and likely inconsequential in relation to the tidal turnover and dominance of saline inputs; furthermore, any minor and localised shifts in biotope would not fundamentally alter the value of the area to the qualifying features; however, aspects of this can only be confirmed with the benefit of project-level survey	No AE I/C	
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	2.5/DS	No effect	n/a - No LSE	-	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	0 Uncertain	No AE	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.	No AE I/C	

Desalination (KME): Isle of Sheppey	2046	0/DS	LSE	No AE	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.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	0	Uncertain	No AE	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.	No AE I/C	
Desalination (KME): Isle of Sheppey	2046	0	Uncertain	No AE	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.	No AE I/C	
Bulk import (KTZ): SEW Canterbury to Near Canterbury	2050	7.5	No effect	n/a - No LSE	-	No AE I/C	

Wealden Heaths Phase 2 SPA	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (SNZ): Petersfield refurbishment (1.6Ml/d)	2029	DS	No effect	n/a - No LSE	-	No AE I/C	Not affected by any SW options
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	4.9	No effect	n/a - No LSE	-	No AE I/C	

Woolmer Forest SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Groundwater (SNZ): Petersfield refurbishment (1.6Ml/d)	2029	DS	No effect	n/a - No LSE	-	No AE I/C	Not affected by any SW options
Bulk import (SNZ): SEW RZ5 to Pulborough	2040	7.1	No effect	n/a - No LSE	-	No AE I/C	

Wye and Crundale Downs SAC	Year	Dist(km)	Scr. concl.	AA concl.	AA Summary	I/C concl.	I/C Summary
Interzonal transfer (KME-KTZ): KME-KTZ bi-directional (15.8Ml/d)	2026	8.1	No effect	n/a - No LSE	-	No LSE I/C	No LSE alone; no risk of i/c effects (construction only; site not exposed (distance, no pathways for site-derived pollutants))
Interzonal transfer (KTZ-KME): Utilise full existing transfer capacity (9Ml/d)	2040	8.1	No effect	n/a - No LSE	-	No LSE I/C	
Bulk export (SHZ): Rye to SEW	2050	9.6	No effect	n/a - No	-	No LSE I/C	