

Hampshire Water Transfer and Water Recycling Project

Environmental Statement – Chapter 21 Summary of likely significant residual effects

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The Southern Water logo graphic consists of three stylized, wavy blue lines of varying lengths, positioned to the right of the text 'Southern Water.'

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21.1 Introduction

- 21.1.1 This chapter has been produced to summarise the likely significant residual effects of the Proposed Development that have been identified through the assessment of likely significant effects. The assessment and full details of all identified likely significant effects are reported within Environmental Statement (ES) Chapters 6 to 20, Volume I (Document reference 6.1, DCO Volume 6).
- 21.1.2 Residual effects are those where a likely significant effect would occur, following implementation of primary (inherent), secondary (foreseeable) and tertiary (inexorable) mitigation, as a result of the Proposed Development (as described in ES Chapter 5 EIA approach and methodology, Volume I (Document reference 6.1, DCO Volume 6)). This takes into account overarching Environmental Impact Assessment (EIA) guidance and advice documents including that within the Institute of Sustainability and Environmental Professionals (formerly the Institute of Environmental Management and Assessment) guidance [1] [2] [3]. Table 21-1 outlines the receptors for which likely significant residual effects are reported within ES Chapters 6 to 20, Volume I (Document reference 6.1, DCO Volume 6). Where no likely significant residual effects are reported for a topic and for a specific Proposed Development stage (i.e. construction, operation or decommissioning), this means that no likely significant residual effects have been identified in the assessment. Only those Proposed Development stages for which likely significant residual effects have been identified within the assessment are reported in Table 21-1.
- 21.1.3 The ‘Assessment of likely significant effects’ section of ES Chapters 6 to 20, Volume I (Document reference 6.1, DCO Volume 6), presents the assessment of likely significant effects for each topic resulting from the construction, operation and decommissioning of the Proposed Development. Comments received from the Planning Inspectorate on behalf of the Secretary of State by way of an EIA Scoping Opinion have been addressed within this ES (refer to ES Appendix 5.3 Response to EIA Scoping Opinion, Volume II (Document reference 6.2, DCO Volume 6) for a full list of EIA Scoping Opinion comments and responses). The likely significant effects of the Proposed Development are assessed considering the primary (embedded into the design) and tertiary (standard industry good practice measures or actions to reduce impacts) mitigation measures identified for the Proposed Development. An overview of primary mitigation measures within the Proposed Development’s design are presented in ES Appendix 3.1 Primary mitigation, Volume II (Document reference 6.2, DCO Volume 6), and the Commitments Register (ES Appendix 5.5 Commitments Register, Volume II (Document reference 6.2, DCO Volume 6)). Tertiary mitigation is presented and secured within the various management plans that have been submitted with the Development Consent Order (DCO) application, and summarised in ES Appendix 5.5 Commitments Register, Volume II (Document reference 6.2, DCO Volume 6).
- 21.1.4 The assessment of likely significant residual effects for the ES has also considered secondary mitigation measures (measures or actions to prevent or reduce any

remaining likely significant adverse environmental effects of the Proposed Development) as identified within ES Chapters 6 to 20, Volume I (Document reference 6.1, DCO Volume 6). In some instances, the detail of secondary mitigation measures proposed to mitigate likely significant effects will be determined by the Contractor following DCO consent. Where a commitment to secondary mitigation cannot be secured in the DCO application, this is not taken into account in the assessment of likely significant residual effects.

Table 21-1 Summary of likely significant residual effects

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
ES Chapter 6 Air quality and odour, Volume I				
Construction	No likely significant residual effects identified for construction, operation or decommissioning.			
Operation	Impacts from construction road traffic emissions on designated ecological features within 200m of affected roads are assessed within ES Chapter 8 Terrestrial and freshwater biodiversity, Volume I (Document reference 6.1, DCO Volume 6), where no likely significant residual effects are identified.			
Decommissioning				
ES Chapter 7 Archaeology and cultural heritage, Volume I				
Construction	Old Bedhampton Conservation Area	Direct physical change to the Conservation Area due to the construction of an above-ground section of pipeline, open-cut pipeline construction and temporary construction compounds on the eastern and western sides of Old Mill Dam, along the Pipelines between the Water Recycling Plant (WRP) site and Bedhampton Springs, combined with a temporary change in the setting of the Conservation Area arising from the perception of construction works at Bedhampton Springs and to the west of Mill Lane. The lasting effect on the Conservation Area would reduce to a minor adverse (not significant) effect on completion of construction works.	<p>Primary: A range of measures have been embedded into the Proposed Development design to avoid or reduce environmental effects. Measures specific to cultural heritage likely significant residual effects are:</p> <ul style="list-style-type: none"> • Avoiding designated heritage assets where reasonably practicable. • Minimising disturbance within historic parkland, particularly of mature planting, earthwork remains and water features. • Using existing landform and planting to provide screening • Restoring land and using appropriate planting to restore areas disturbed during pipeline construction or temporary works to pre-existing condition where possible. • Using screening bunding, planting, noise and light controls and other landscape treatments at Above Ground Plant (AGP). • Using appropriate surface treatments and finishes on AGP where appropriate. <p>Tertiary: Good construction practice measures contained in the Outline Construction Environmental Management Plan (CEMP) (Document reference 7.1, DCO Volume 7) are secured by a requirement in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3). Measures of particular relevance to manage cultural heritage likely significant residual construction effects are:</p> <ul style="list-style-type: none"> • Measures to limit construction noise and vibration and emissions, including dust, which will be used to reduce perceptibility of the Proposed Development during construction. • Any disturbance within historic parklands will be returned to pre-construction condition as a minimum. <p>Secondary: No secondary mitigation has been identified that would reduce the significance of temporary likely significant residual effects by physical change or by change to the setting of heritage assets.</p>	Temporary moderate adverse (significant)
Construction	Fort Purbrook (NHLE 1001842)	Temporary effects to the setting of the heritage asset within Section D: The WRP site to Portsdown Hill of the Pipeline between the WRP site and Otterbourne Water Supply Works (WSW). Construction of a shaft and associated temporary construction compound D-1 (location of temporary construction compounds are shown on ES Figure 1.1 Location of the Proposed Development and Order Limits, Volume III (Document reference 6.3, DCO Volume 6)) would affect views of the asset from the south-east.		Temporary moderate adverse (significant)
Construction	Fort Widley (NHLE 1001862)	Temporary effects to the setting of the heritage asset within Section E: Portsdown Hill to Boarhunt of the Pipeline between the WRP site and Otterbourne WSW. Visibility of construction works in the open vista of the cleared field of fire on Portsdown Hill to the north would arguably form a detracting element in the setting of Fort Widley.		Temporary moderate adverse (significant)
Construction	Fort Nelson (NHLE 1001860)	Temporary effects to the setting of the heritage asset within Section E of the Pipeline between the WRP site and Otterbourne WSW. Visibility of construction works forming a detracting element in the field of fire to the north of Fort Nelson.		Temporary moderate adverse (significant)
Construction	Fort Southwick (NHLE 1001808)	Temporary effects to the setting of the heritage asset within Section E of the Pipeline between the WRP site and Otterbourne WSW.		Temporary moderate adverse (significant)

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
		Visibility of construction works to the north of the asset forming a detracting element in the setting of Fort Southwick.	Monitoring: Landscape restoration and screening will require monitoring during the aftercare period to ensure that planting is successfully established. Proposals for monitoring contained in the Outline Landscape and Ecology Management Plan (LEMP) (Document reference 7.5, DCO Volume 7) are secured by a requirement in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3).	
Construction	Church of St Nicholas, Boarhunt (NHLE 1350613)	Temporary effects to the setting of the heritage asset within Section E of the Pipeline between the WRP site and Otterbourne WSW. Construction noise, particularly from temporary construction compounds E-6a and E-6b and the Boarhunt Road crossing to the south, combined with glimpsed visibility of works would affect the rural and contemplative setting and tangible links to the past of the church and graveyard.		Temporary moderate adverse (significant)
Construction	Park Pale at Marwell Park (NHLE 1012308)	Temporary effects to the setting of the heritage asset within Section L: Lower Upham to Brambridge of the Pipeline between the WRP site and Otterbourne WSW. Perceptibility of construction works to the south and west of the asset, including construction noise and vehicle movements as well as visibility of the trenchless construction works and associated temporary construction compounds would affect the viewers ability to 'read' the layout of the historic fishponds and their relationship to the asset.		Temporary moderate adverse (significant)
Construction	Otterbourne Manor (NHLE 1013055)	Temporary effects to the setting of the heritage asset along Section M: Brambridge to Otterbourne WSW of the Pipeline between the WRP site and Otterbourne WSW. Perceptibility of construction works, including visibility of open-cut trenching and associated vehicle movements to the west of Otterbourne Manor, and of temporary construction compound M-1 to the south-west with associated construction noise, which would slightly erode the existing rural context.		Temporary moderate adverse (significant)
Operation	No likely significant residual effects identified for operation or decommissioning.			
Decommissioning				
ES Chapter 8 Terrestrial and freshwater biodiversity, Volume I				
Construction	No likely significant residual effects identified for construction.			
Operation	Statutory designated sites	Operation of the Proposed Development would reduce the requirement for water abstraction from the River Itchen Special Area of Conservation and Site of Special Scientific Interest and. This reduction in abstractions would help to maintain natural watercourse flow and contribute to the conservation objective of maintaining or restoring the structure and function of habitats and species.	No mitigation measures required for beneficial effects.	Long-term major beneficial (significant)
Decommissioning	No likely significant residual effects identified for decommissioning.			

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
ES Chapter 9 Marine biodiversity, Volume I				
Construction	No likely significant residual effects identified for construction, operation or decommissioning.			
Operation				
Decommissioning				
ES Chapter 10 Carbon and climate change, Volume I				
Construction	No likely significant residual effects identified for construction, operation or decommissioning.			
Operation				
Decommissioning				
ES Chapter 11 Land quality and ground conditions, Volume I				
Construction	No likely significant residual effects identified for construction, operation or decommissioning.			
Operation				
Decommissioning				
ES Chapter 12 Land use and agriculture, Volume I				
Construction	Commercial property and land: Wickham Park Golf Club	Temporary loss of commercial land due to open-cut construction of Section G: Crockerhill to Wickham of the Pipeline between the WRP site and Otterbourne WSW through parts of Wickham Park Golf Club and through the car park, and a temporary construction compound in the southern part of the golf course.	<p>Primary: A range of measures have been embedded into the Proposed Development design to avoid or reduce environmental effects. Measures specific to land use and agriculture likely significant residual effects are to avoid commercial property and land and BMV agricultural land where reasonably practicable as part of the Proposed Development to reduce the risk of disruption to land use and agriculture.</p> <p>Tertiary: Good construction practice measures contained in the Outline CEMP (Document reference 7.1, DCO Volume 7) are secured by a requirement in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3). Measures of particular relevance to manage land use and agriculture likely significant residual effects are:</p> <ul style="list-style-type: none"> The Contractor will prepare and adhere to the detailed Soil Resource Management Plan (SRMP), which will form part of, or be appended to, the detailed CEMP(s). An Outline SRMP is contained in Appendix B of the Outline CEMP (Document reference 7.1, DCO Volume 7). The Outline SRMP sets out the overall approach to managing soil resources affected by the Proposed Development and describes the measures and principles required to reduce potentially harmful impacts on soils. Agricultural land loss - Stiles, gates or gaps will be incorporated into temporary fencing where reasonably practicable to maintain access for landowners/occupiers. 	Temporary major adverse (significant)
Construction	Commercial property and land: Winters Hill Hall	Temporary loss of commercial land due to the open-cut construction of Section K: The River Hamble to Lower Upham of the Pipeline between the WRP site and Otterbourne WSW through parkland at Winters Hill Hall, with Break Pressure Tank (BPT)-K and an associated temporary construction compound immediately north-east of Winters Hill Hall.		Temporary moderate adverse (significant)
		Permanent loss of land associated with BPT-K immediately north-east of Winters Hill Hall.		Permanent moderate adverse (significant)
Construction	Commercial property and land: Wickham Park Golf Club and Winters Hill Hall	Temporary in-combination effects on amenity for sensitive commercial property and land (Wickham Park Golf Club and Winters Hill Hall) from the combination of effects reported in ES Chapter 6 Air quality and odour, ES Chapter 13 Landscape and visual, ES Chapter 15 Noise and vibration and ES Chapter 18 Traffic and transport, Volume I (Document reference 6.1, DCO Volume 6).		Temporary moderate adverse (significant)

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
Construction	Agricultural land: Best and most versatile (BMV) agricultural land	Temporary, short-term loss of 114 hectares (ha) of BMV agricultural land removing a substantial area from production during the construction phase. The effect on Grade 1 and 2 land would be significant. Most of the agricultural land impacted is within the Pipeline between the WRP site and Otterbourne WSW.	<p>Where reasonably practicable, additional access points will be provided by agreement with the landowner/occupier to allow access across the construction working width and thereby mitigate field severance.</p> <p>The Contractor will engage with owners and operators of Wickham Park Golf Club and Winters Hill Hall specifically around the extent of the proposed temporary possession of land, the approach to access and expected impacts from the relevant construction works. The Contractor will have regard to any feedback received when finalising its proposals. The Outline CEMP (Document reference 7.1, DCO Volume 7) also includes measures in relation to air quality, water environment and construction methodologies that have relevance to agricultural land and soils.</p>	Temporary moderate adverse (significant)
Construction		Permanent loss of 1.588ha of BMV agricultural land for AGP. The effect on Grade 2 land would be significant.	<p>Measures contained in the Framework Construction Traffic Management Plan (CTMP) (Document Reference 7.2, DCO Volume 7) and the Framework Rights of Way Management Plan (RoWMP) (appended to the Framework CTMP (Document Reference 7.2, DCO Volume 7)) as secured by requirements in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume), will reduce construction traffic impacts on journey times and avoid temporary road closures on roads used for journeys at regional and national levels and reduce construction impacts on the Public Rights of Way (PRoW) network. A Traffic Management Strategy (TMS) (Document Reference 7.3, DCO Volume 7) provides supporting information regarding any road closures and associated traffic management that may be required during the construction phase of the Proposed Development.</p> <p>Secondary: The requirement for the Contractor to engage with owners and operators of Wickham Park Golf Club and Winters Hill Hall specifically around exact land take needs and construction access/impacts so that the Contractor can consider the latest feedback within the detailed design post-consent has been included as a measure within the Outline CEMP (Document reference 7.1, DCO Volume 7) and is therefore secured as tertiary mitigation. The detail of secondary mitigation measures proposed to mitigate likely significant residual effects to these receptors will be determined by the Contractor post-consent. As these measures are not yet defined and are not secured through the DCO, they have not been taken into account in the assessment of likely significant residual effects.</p> <p>Monitoring: No likely significant adverse effects related to land use and agriculture would require monitoring, beyond the in-combination effects on amenity, for which monitoring measures will be specific to the contributing topics and effects and therefore included in the relevant chapters.</p>	Permanent moderate adverse (significant)

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
Operation	No likely significant residual effects identified for operation.			
Decommissioning	Commercial property and land: Winters Hill Hall	Temporary loss of commercial land to enable the decommissioning associated with BPT-K north-east of Winters Hill Hall.	<p>Tertiary: Decommissioning will be subject to the appropriate permits, consents and regulatory environment at the relevant time. Decommissioning activities are expected to follow good industry practice in place at the time, anticipated to be similar in nature to measures contained in the Outline CEMP (Document reference 7.1, DCO Volume 7).</p> <p>Secondary: Decommissioning works are expected to follow good industry practice in place at the time, with control measures expected to be similar in nature to those set out in the Outline CEMP (Document reference 7.1, DCO Volume 7), the detail of secondary mitigation measures proposed to mitigate likely significant effect will be determined by the Contractor post-consent. As these measures are not yet defined and are not secured through the DCO, they have not been taken into account in the assessment of likely significant residual effects.</p> <p>Monitoring: There are no likely significant adverse effects related to land use and agriculture during decommissioning that would require monitoring.</p>	Temporary moderate adverse (significant)
ES Chapter 13 Landscape and visual, Volume I				
Construction	Landscape: Hampshire Landscape Character Areas (LCA) 2e Forest of Bere West	Temporary reduced tranquillity through noise and visual disturbance from construction activity across the northern part of the LCA largely related to the open-cut construction for the Pipeline between the WRP site and Otterbourne WSW and the construction of BPT-K.	<p>Primary: The landscape and visual impact assessment regards all primary (embedded) mitigation to be related to operational effects in line with the Guidelines for Landscape and Visual Impact Assessment (Third Edition) [4]. Therefore, primary mitigation does not relate to the construction phase.</p>	Temporary moderate adverse (significant)
Construction	Landscape: Hampshire LCA 3c Itchen Valley	Temporary and localised construction effects to the centre of the LCA, comprising sections of open-cut construction for the Pipeline between the WRP site and Otterbourne WSW either side of the Itchen valley.	<p>Tertiary: Good construction practice measures contained in the Outline CEMP (Document reference 7.1, DCO Volume 7) are secured by a requirement in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3). Measures of particular relevance to manage landscape and visual likely significant residual construction effects are:</p>	Temporary moderate adverse (significant)
Construction	Landscape: Hampshire LCA 3e Meon Valley	Some localised temporary physical impacts on the field pattern, some existing vegetation and some impacts on its setting in the east.	<ul style="list-style-type: none"> Minimising the duration and footprint of construction activity where reasonably practicable. Maintaining well-managed and tidy construction working areas and site compounds to reduce their visual impact and appearance in the landscape. Keeping construction lighting to the minimum luminosity necessary for safe working within temporary construction compounds and working areas and where possible, fitting it 	Temporary moderate adverse (significant)
Construction	Landscape: Hampshire LCA 8i Portsdown Hill Open Downs	Construction activity would bisect the majority of the narrow area with most comprising open-cut construction for the Pipeline between the WRP site and Otterbourne WSW across open, gently sloping fields on the dip slope of Portsdown Hill, removing field boundary vegetation. The tranquillity would be temporarily reduced across much of the area. The construction of BPT/Intermediate Pumping Station (IPS) E, IPS-F and several temporary construction compounds would result in particularly intense	<ul style="list-style-type: none"> Minimising the duration and footprint of construction activity where reasonably practicable. Maintaining well-managed and tidy construction working areas and site compounds to reduce their visual impact and appearance in the landscape. Keeping construction lighting to the minimum luminosity necessary for safe working within temporary construction compounds and working areas and where possible, fitting it 	Temporary major adverse (significant)

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
		activity, which may include lighting to illuminate the construction works.	with motion sensors to reduce the duration of potential light spill in night-time views.	
Construction	Landscape: Local Landscape Character Areas (LLCA) 13: Farlington Marshes and coastal parks	The construction of the WRP site would result in localised temporary and permanent changes to land cover patterns and increasing levels of activity, resulting in partial deterioration of the existing landscape character.	<p>Together, the Design Principles Document (Document reference 5.11, DCO Volume 5) and Outline LEMP (Document reference 7.5, DCO Volume 7) provide the securing mechanism for the landscape mitigation within the DCO. They set out actions that will be implemented to achieve the successful establishment of planting and the management of existing and proposed habitats. Post-consent, these elements will be designed to integrate with the wider nature network through the detailed design and how they will be maintained and monitored. The detailed LEMPs will be produced and submitted for approval in accordance with the corresponding requirement in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3).</p> <p>Secondary: For landscape and visual matters, all mitigation relating to construction effects is considered to be tertiary. Therefore, no secondary mitigation has been identified to reduce the temporary likely significant residual effects.</p> <p>Monitoring: Monitoring of likely significant construction effects will be undertaken. Implementation of the mitigation planting will be overseen by a suitably qualified landscape architect during the works to ensure that good practice is followed. The suitably qualified landscape architect will be responsible for the implementation, establishment maintenance, management, and monitoring of all landscape reinstatement. This monitoring will be undertaken in accordance with the measures contained within the Outline LEMP (Document reference 7.5, DCO Volume 7) and are secured by a requirement in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3).</p>	Temporary moderate adverse (significant)
Construction	Landscape: LLCA 15: Portsdown Hill ridge Landscape: LLCA 19: Forest of Bere East wooded farmland LLCA 23: Portsdown Hill open down west	Construction works would disrupt tranquillity locally in areas near the edge of Widley, where construction of the BPT/IPS-E and between the new settlement of Welborne and Wickham, where IPS-F would be located.		Temporary moderate adverse (significant)
Construction	Landscape: LLCA 18: Portsdown Hill northern slopes	Construction activities and establishment of temporary construction compounds would collectively and temporarily alter the landscape pattern and reduce the tranquillity across the rural setting and would disrupt the PRow network, including the Wayfarer's Walk, Pilgrims' Way, and Allan King Way long distance routes.		Temporary major adverse (significant)
Construction	Landscape: LLCA 26: Meon Valley Wickham	Construction activities would reduce tranquillity from construction noise and changes in land use to facilitate the establishment of temporary construction compounds, earthworks, and the construction of the IPS-G. The construction of the Pipeline between the WRP site and Otterbourne WSW would impact the recreational value of the area, with temporary disruptions to the use of Wickham Park Golf Club and a section of the Meon Valley Trail.		Temporary moderate adverse (significant)
Construction	Landscape: LLCA 27: Upper Meon Valley	Partial deterioration due to construction of the adjacent compound and the presence of construction traffic along Mill Lane within the South Downs National Park (SDNP).		Temporary moderate adverse (significant)
Construction	Landscape: LLCA 29: Shedfield Heathlands LLCA 30: Durley Claylands LLCA 33: Durley and Durley Street LLCA 34: Fair Oak wooded farmland LLCA 37: Settled upper Itchen Valley	Similar impacts in these areas would result from open-cut excavation across predominantly arable fields, removal of existing boundary vegetation where it is intersected by the Pipeline between the WRP site and Otterbourne WSW and the erection of several temporary construction compounds. Within LLCA 37: Settled upper Itchen Valley, the introduction of temporary construction compounds with tall elements would disrupt the tranquillity and the sense of wildness of the rural landscape and along the adjacent section of the Itchen Way long distance trail. Within LLCA 34: Fair Oak wooded farmland, the tranquillity and rural character of the area would be affected.		Temporary moderate adverse (significant)

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Construction	Visual: People travelling along Allan King Way	Viewpoint (VP)038, VP041: Unobstructed views towards the construction of the Pipeline between the WRP site and Otterbourne WSW. The rural character, time depth, and visual connection to the Forest of Bere and the SDNP in the far distance would be interrupted.		Temporary moderate to major adverse (significant)
Construction	Visual: People travelling along Meon Valley Trail	VP054: Construction activities would be visible across Wickham Park Golf Club, where views would diminish especially in areas enclosed by vegetation or where the route is in cutting.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Pilgrims' Way	VP077, VP082: Increased view of construction activities on the approach from the north and within the SDNP from the Pilgrims' Way and from the northern slopes of Wintershill. The construction of the Pipeline between the WRP site and Otterbourne WSW would dominate views changing the rural character. VP029, VP032: Occasional unobstructed views of construction activities from earthworks and temporary presence of temporary construction compounds, construction vehicles and the removal of sections of the hedgerows.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Solent Way	VP016: Obvious and noticeable views of construction activity towards the WRP site, including presence of temporary construction compounds, material storage and visible tall plant. Task lighting at night would be seen against brightly lit Bedhampton Industrial Area. The construction activity would be a visual distraction.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Wayfarer's Walk	VP018, VP019 and VP020: Kinetic approach to Portsdown Hill from the Wayfarer's Walk would experience views of construction, including earthworks and the presence and movement of construction plant across the northern dip slope of Portsdown Hill. The removal of sections of hedgerows would result in slightly increased openness of views across the landscape.		Temporary moderate to major adverse (significant)
Construction	Visual: People travelling along footpath 218/28/1	VP022 and VP023: Prominent views of temporary construction activity related to the large temporary construction compounds within the site of BPT/IPS-E.		Temporary major adverse (significant)
Construction	Visual: People travelling along footpath 218/38/1	VP037 and VP042: Temporary construction activity would be seen across the middle ground in views from PRow.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along footpath 023/14/1			
Construction	Visual:	VP048 and VP051: Views of earthworks and presence of temporary construction compounds located to the north of Wickham, at the junction of		Temporary moderate adverse (significant)

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	People travelling along footpath 251/6/1	Blind Lane and Mill Lane and on the boundary of the SDNP.		
Construction	Visual: People travelling along footpath 207/13/1	VP055, VP073, VP079, VP097, VP106 and VP116: Views of extensive construction activity including earthworks, the presence of temporary construction compounds and the movement of construction plant and vehicles.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along footpath 062/4/1			Temporary major adverse (significant)
Construction	Visual: People travelling along footpath 022/44/1			Temporary major adverse (significant)
Construction	Visual: People travelling along footpath 054/21/1			Temporary major adverse (significant)
Construction	Visual: People travelling along footpath 082/6/1			Temporary major adverse (significant)
Construction	Visual: People travelling along footpath 207/12/2			Temporary major adverse (significant)
Construction	Visual: People travelling along footpath 207/3/2			VP069, VP094 and VP100: Construction activity would be seen across the middle ground of views from PRow to the south and to the north.
Construction	Visual: People travelling along footpath 054/23/1	Temporary moderate adverse (significant)		
Construction	Visual: People travelling along footpath 054/5/3	Temporary moderate adverse (significant)		
Construction	Visual: People travelling along footpath 069/20/1	VP083 and VP084: Construction activities around Wintershill, including tall machinery and large temporary construction compounds would be prominent in views along the footpath.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along footpath 235/20/1			Temporary moderate adverse (significant)
Construction	Visual: People travelling along footpath 084/130/1	VP045, VP123, VP124, VP130 and VP131: View of construction activities across rural fields, including excavation and presence of vehicles, tall machinery and large temporary construction compounds.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along footpath 084/101/1 and 084/103/1			Temporary moderate adverse (significant)
Construction	Visual: People travelling along footpath 084/107/1			Temporary moderate adverse (significant)

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Construction	Visual: People travelling along footpath 023/14/1			Temporary major adverse (significant)
Construction	Visual: People travelling along footpath 251/1/1	VP128: Temporary change to the open character of the arable field where large temporary construction compounds, IPS-G, construction activity, stock piling and machinery would be in view.		Temporary moderate adverse (significant)
Construction	Visual: Residents of Widley (western edge)	VP018, VP019 and VP020: The construction of the Pipeline between the WRP site and Otterbourne WSW and AGP would be visible in the background across the dip slope of Portsdown Hill, including major earthworks, the presence and operation of temporary construction compounds and construction activities and the removal of existing vegetation from field boundaries. Task lighting, if needed, would be perceptible within the relatively dark rural landscape in views to the west.		Temporary moderate to major adverse (significant)
Construction	Visual: Residents of Wickham	VP065: Residents of Titchfield Lane fronting Wickham Park Golf Club would experience views of construction activities across the road. VP125: Some residents on the periphery of Wickham could perceive construction activity across arable fields. VP128: Views from the rear of properties off Winchester Road/A334 of excavation and two temporary construction compounds. Task lighting during winter workings shifts could impact residents.		Temporary moderate adverse (significant)
Construction	Visual: Residents of Shirrell Heath	VP055 and VP116: Views of construction of the Pipeline between the WRP site and Otterbourne WSW from properties on the outer edges of Shirrell Hill.		Temporary moderate to major adverse (significant)
Construction	Visual: Residents of Lower Upham	VP085 and VP090: Views of construction activity along the northern slope of Wintershill, including earthworks, cranes and other machinery for construction of the Pipeline between the WRP site and Otterbourne WSW and BPT-K. VP117 and VP118: Residential streets in proximity to the Order Limits would also experience views of construction activity.		Temporary moderate adverse (significant)
Construction	Visual: Residents of Durley	VP120: Views of construction of the Pipeline between the WRP site and Otterbourne WSW from properties on the outer edges of Durley.		Temporary moderate adverse (significant)
Construction	Visual: Residents of Crowdhill	VP093: Residents of properties on the northern edge of Crowdhill would experience views of construction activity.		Temporary moderate adverse (significant)
Construction	Visual: Residents of Colden Common	VP094, VP096, and VP100: Residents of properties on the southern edge of Colden		Temporary moderate to major adverse (significant)

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
		Common would experience views of construction activity.		
Construction	Visual: Visitors of Fort Nelson	VP038: Unobstructed views from Allan King Way towards the construction of the Pipeline between the WRP site and Otterbourne WSW towards the bottom of the dip slope of Portsdown Hill.		Temporary moderate adverse (significant)
Construction	Visual: People using Broadmarsh Coastal Park	VP016: Views of construction activity in the background when looking north towards the WRP site from the footpath and the adjacent coastal park.		Temporary moderate adverse (significant)
Construction	Visual: People visiting Portsdown Hill Viewpoint and associated public open space	VP021: Views facing east along the road towards the site of BPT/IPS-E would experience views of construction traffic and tall machinery accessing the site.		Temporary moderate adverse (significant)
Construction	Visual: People in open space north of Fort Widley	VP024: Filtered views from the specific viewpoint to the east of Fort Widley of construction activity to the north.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along A32 (Hoad's Hill)	VP126: Views of construction of the Pipeline between the WRP site and Otterbourne WSW.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along B2177	VP031: View of construction of the Pipeline between the WRP site and Otterbourne WSW across the foreground and middle ground of the view, including the presence of two temporary construction compounds obstructing views of the landscape beyond. VP090: Noticeable changes to views from glimpses of construction activity, including earthworks, the movement of construction vehicles and the presence of temporary construction compounds.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along B3354	VP093: Views of construction of the Pipeline between the WRP site and Otterbourne WSW.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Harts Farm Way	VP015: Views of construction activity surrounding the WRP site, where construction activity and taller plant would be seen through occasional gaps in the boundary vegetation.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Crooked Walk Lane	VP036: Construction activities would disrupt the existing views towards the Forest of Bere, Southwick and the SDNP.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Ashley Down Lane	VP039 and VP043: The open character of the rural landscape would allow unobstructed views of construction activity from roads lacking roadside vegetation and within areas with scarce built form.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Nine Elms Lane			Temporary moderate adverse (significant)
Construction	Visual:	VP125: Open views towards construction activity would be possible from roads such as Forest Lane.		Temporary moderate adverse (significant)

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
	People travelling along Forest Lane			
Construction	Visual: People travelling along Frith Lane	VP051: The approach to Mill Lane west of Wickham would experience views of the temporary construction compound which would introduce temporary built form.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Titchfield Lane	VP065: People passing by Wickham Park Golf Club would experience oblique views of construction activity, including the removal of vegetation, and the presence of machinery increasing the openness of views.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Winters Hill	VP083: Tall machinery and large temporary construction compounds which would be visible within the foreground of views.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Pricketts Hill	VP052, VP073, VP065, VP117, VP118 and VP120: Localised, short section of roads, experiencing temporary traffic management and construction activity.		Temporary moderate adverse (significant)
Construction	Visual: People travelling along Cudridge Lane			Temporary major adverse (significant)
Construction	Visual: People travelling along Bishopstoke Lane			Temporary moderate adverse (significant)
Construction	Visual: People travelling along Alma Lane			Temporary moderate adverse (significant)
Construction	Visual: People travelling along Scivier's Lane			Temporary moderate adverse (significant)
Operation: Year 15	No likely significant residual landscape effects identified at year 15 of operation			
Operation: Year 15	Visual: People traveling along Pilgrims' Way	VP082: Views of BPT-K from the Pilgrims' Way through established planting.	Primary: A range of measures have been embedded into the Proposed Development design to avoid or reduce environmental effects or deliver environmental benefits. The landscape and visual impact assessment has informed a landscape-led approach to the Proposed Development design from the outset and are secured by the Design Principles Document (Document reference 5.11, DCO Volume 5), aligning with the National Infrastructure Commission's Project Level Design Principles guidance and addressing the National Infrastructure Commission's Design Principles for National Infrastructure. Measures specific to landscape and visual likely significant residual effects include: <ul style="list-style-type: none"> Defining Order Limits to avoid physical impacts on the SDNP. Siting the Proposed Development to avoid or reduce the loss of existing vegetation and siting permanent AGP to relate to 	Permanent moderate adverse (significant)
Operation: Year 15	Visual: People travelling along footpath 218/28/1	VP022: Views of the BPT/IPS-E from the footpath to the west would gradually increase on the approach to the new built form and would be seen in the foreground of the view.		Permanent moderate adverse (significant)

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
			<p>existing landform and vegetation patterns to maximise landscape integration.</p> <ul style="list-style-type: none"> • Conserving and responding positively to landscape, ecology and historic features of value, including below-ground features. • Reducing working width for open-cut sections from the typical 40m when intersecting sensitive constraints, where required. • Using trenchless construction methods for crossings to avoid or reduce impacts on the environment, communities, or key transport infrastructure. • Reinstating the existing landscape pattern following construction in line with the design principles. <p>Trees removed to facilitate construction will be reinstated. Where ash trees have been removed these will be replaced with a mixture of broadleaved species to increase resilience, maintain landscape character and biodiversity value.</p> <p>New trees will be planted to mitigate tree loss, enhance and reinforce the existing landscape structure, and assist with visual screening.</p> <p>To provide visual mitigation and restore and enhance ecological connectivity, new hedgerows will be created, existing hedgerows will be enhanced with infill planting and sections of hedgerow removed to facilitate construction will be reinstated.</p> <p>Tertiary: Together, the Design Principles Document (Document reference 5.11, DCO Volume 5) and the Outline LEMP (Document reference 7.5, DCO Volume 7) provides the securing mechanism for the landscape mitigation within the DCO. It sets out the actions that will be implemented to achieve the successful establishment of planting and the management of existing and proposed habitats. Post-consent, these elements will be designed to integrate with the wider nature network through the detailed design and how they will be maintained and monitored. The detailed LEMP(s) will be produced and submitted for approval in accordance with the corresponding requirement in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3).</p> <p>Secondary: For landscape and visual matters, all mitigation relating to operation effects is considered primary or tertiary. Therefore, no secondary mitigation has been identified to reduce the remaining likely significant residual effects.</p> <p><u>Monitoring:</u> Monitoring of planting growth and maintenance will be undertaken by a suitably qualified landscape architect during the</p>	

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
			first five years following implementation to ensure it establishes successfully.	
Decommissioning		The residual landscape and visual decommissioning effects are the same as those reported for the residual landscape and visual construction effects in section 13.8 of ES Chapter 13 Landscape and visual, Volume I (Document reference 6.1, DCO Volume 6). Decommissioning landscape and visual effects are considered to be no greater than those identified during the construction phase and are assessed as being the same as construction effects. This is because the activities relating to decommissioning would be similar to construction but carried out in the context of enhanced landscape mitigation. Decommissioning will be subject to the appropriate permits, consents and regulatory environment at the relevant time. Decommissioning activities are expected to follow good industry practice in place at the time, anticipated to be similar in nature to measures contained in the Outline CEMP (Document reference 7.1, DCO Volume 7).		
ES Chapter 14 Major accidents and disasters, Volume I				
Construction	No likely significant residual effects identified for construction, operation or decommissioning.			
Operation				
Decommissioning				
ES Chapter 15 Noise and vibration, Volume I				
Construction	No likely significant residual effects identified for construction, operation or decommissioning.			
Operation				
Decommissioning				
ES Chapter 16 Resources and waste management, Volume I				
Construction	No likely significant residual effects identified for construction in relation to mineral safeguarding.			
Construction	Hazardous landfill	The WRP site is situated on a historic landfill site, likely containing hazardous waste (i.e. asbestos containing material). The hazardous waste forecast represents approximately 9% of the total waste generated during the construction of the Proposed Development requiring off-site disposal to landfill. This would comprise a 0.31% reduction in the available hazardous landfill capacity projected to be available in England at the end of construction.	<p>Primary: A range of waste considerations have been embedded into the Proposed Development design to avoid or reduce environmental effects. During pipeline corridor selection, criteria were applied to reduce waste generation and avoid known contaminated sites where practicable.</p> <p>Tertiary: Good construction practice measures in the Outline CEMP (Document reference 7.1, DCO Volume 7) are secured by a requirement in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3). Measures of particular relevance to manage waste likely significant residual construction effects include:</p> <ul style="list-style-type: none"> Managing waste in accordance with good practice and the waste hierarchy, reducing waste to landfill and support circular economy during construction. Development of a SWMP by the Contractor as part of detailed CEMP(s) which will include measures to minimise hazardous waste through design opportunities. <p>Secondary: A substantial portion of hazardous waste from the historic landfill site (the WRP site) would contain asbestos containing materials. It may be possible for this material to be disposed of at non-hazardous landfill sites within a separate cell for Stable Non-Reactive Hazardous Waste (SNRHW) providing it meets SNRHW waste acceptance criteria. This will be evaluated by the</p>	Permanent moderate adverse (significant)

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
			<p>Contractor and may reduce impacts on hazardous waste landfill capacity.</p> <p>Treatment options of hazardous waste are also under consideration that would result in diverting hazardous waste from landfill, including:</p> <ul style="list-style-type: none"> • Treatment and remediation of hazardous soils off-site. • Treatment of hazardous waste with the aim of reducing contamination to the extent the materials can be managed as non-hazardous. <p>Hazardous waste management measures secured in the Outline CEMP (Document reference 7.1, DCO Volume 7) will ensure that all suitable options for diverting hazardous waste from landfill will be considered by the Contractor during construction, and that wherever possible, no hazardous waste excavated from historic landfills will be sent directly off-site for disposal at landfill, without assessing the possibility for treatment, remediation and/or recovery.</p> <p>Given mitigation measures are not currently confirmed, they are not defined or secured as secondary mitigation in the DCO application.</p> <p>Monitoring: Details on how waste generation and its management will be monitored, and reported, are set out in the Outline CEMP (Document reference 7.1, DCO Volume 7).</p>	
Operation	No likely significant residual effects identified for operation or decommissioning.			
Decommissioning				
ES Chapter 17 Socio-economics, tourism and health, Volume I				
Construction	Health: Residential neighbourhoods in Widley (Purbrook ward)	Temporary effects on neighbourhood amenity in Widley due to visual effects, mainly on people in their homes, including views across the ridge from Portsdown Hill Road, during the construction of the Pipeline between the WRP site and Otterbourne WSW.	<p>Primary: A range of measures have been embedded into the Proposed Development design to avoid or reduce environmental effects. Measures specific to health likely significant residual effects include:</p> <ul style="list-style-type: none"> • Avoiding settlements, PRoW, and property where practicable to reduce the risk of disruption to property, land, and access. <p>Tertiary: Good construction practice measures contained in the Outline CEMP (Document reference 7.1, DCO Volume 7) are secured by a requirement in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3). Measures of particular relevance to manage health likely significant residual construction effects include:</p> <ul style="list-style-type: none"> • The Contractor will ensure that secure barrier fencing, lighting and a gate person (where practicable) are in place to reduce 	<p>General population: Temporary moderate adverse (significant)</p> <p>Vulnerable groups: Temporary moderate adverse (significant)</p>

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
Construction	Health: Drivers, pedestrians, equestrians and cyclists – (wider community)	For vulnerable groups, increased Heavy Good Vehicle (HGV) movements in residential areas and neighbourhood centres may affect the perception of safety for pedestrians.	<p>safety risks and perceptions of safety risks around construction sites for the public.</p> <ul style="list-style-type: none"> Avoiding temporary road closures on roads used for journeys at a regional or national level. Limiting working width for open-cut construction in rural areas which will be reduced when intersecting sensitive constraints to reduce impact. Avoiding the demolition of any residential properties. <p>Measures contained in the Framework CTMP (Document Reference 7.2, DCO Volume 7) and Framework RoWMP (appended to the Framework CTMP (Document Reference 7.2, DCO Volume 7) as secured by requirements in Schedule 2 to the draft DCO (Document reference 3.1, DCO Volume 3), will reduce construction traffic impacts on residents, businesses, the associated in-combination effects on amenity and reduce construction impacts on the PRow network. A TMS (Document Reference 7.3, DCO Volume 7) provides supporting information regarding any road closures and associated traffic management that may be required during the construction phase of the Proposed Development.</p> <p>Secondary: No secondary mitigation measures are identified in relation to health.</p> <p>Monitoring: Proposed monitoring of impacts and mitigation relevant to the health assessment are set out in ES Chapter 6 Air quality and odour, ES Chapter 13 Landscape and visual, ES Chapter 15 Noise and vibration, ES Chapter 18 Traffic and transport, ES Chapter 19 Water environment, Volume I (Document reference 6.1, DCO Volume 6).</p>	Vulnerable groups: Temporary moderate adverse (significant)
Operation	Socio-economics: Consumers of drinking water supplied by the Applicant (wider community)	Provision of essential infrastructure to guarantee future supply of drinking water. Improved water supply is expected to have a beneficial impact on economic development in the South East England region.	No mitigation measures identified for beneficial effects.	Permanent major beneficial (significant)
Operation	Health: Consumers of drinking water supplied by the Applicant (wider community)	Provision of essential infrastructure to provide resilience to the future supply of drinking water. The avoidance of a potential future water deficit in South East England would have a permanent beneficial health effect for the wider population. For vulnerable groups, who would be more likely to experience adverse health consequences in the event of a drinking water deficit, the effect is considered to be greater.		General population: Permanent moderate beneficial (significant) Vulnerable groups: Permanent major beneficial (significant)
Decommissioning	Health: Residential neighbourhoods in Widley (Purbrook ward)	Temporary effects on neighbourhood amenity in Widley due to visual effects, mainly on people in their homes, including views across the ridge from	Tertiary: Decommissioning will be subject to the appropriate permits, consents and regulatory environment at the relevant time.	General population: Temporary moderate adverse (significant)

Phase	Receptor(s)	Description of likely significant effect	Mitigation measures	Significance of likely residual effect
		Portsdown Hill Road, during the decommissioning of the Pipeline between the WRP site and Otterbourne WSW.	Decommissioning activities are expected to follow good industry practice in place at the time, anticipated to be similar in nature to measures contained in the Outline CEMP (Document reference 7.1, DCO Volume 7).	Vulnerable groups: Temporary moderate adverse (significant)
Decommissioning	Health: Drivers, pedestrians, equestrians and cyclists – (wider community)	Perceptions of safety within vulnerable groups: Pedestrians in residential areas and neighbourhood centres affected by increased HGV movements during decommissioning are particularly likely to be affected.	Secondary: No secondary mitigation measures are identified in relation to health.	Vulnerable groups: Temporary moderate adverse (significant)
ES Chapter 18 Traffic and transport, Volume I				
Construction	No likely significant residual effects identified for construction, operation or decommissioning.			
Operation				
Decommissioning				
ES Chapter 19 Water environment, Volume I				
Construction	No likely significant residual effects identified for construction, operation or decommissioning.			
Operation				
Decommissioning				
ES Chapter 20 Cumulative and in-combination effects, Volume I				
Construction	No likely significant cumulative or in-combination residual effects identified for construction, operation or decommissioning.			
Operation				
Decommissioning				

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from
Southern
Water. 

The Southern Water logo graphic consists of three white, wavy lines that resemble water waves, positioned to the right of the word "Water".