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Your ref:  
Our ref: – Mannings Heath\_EIASO  
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Dear Sir/Madam

## **Town and Country Planning (Environmental Impact Assessment) Regulations 2017**

### **Request for an EIA Screening Opinion for installation of a long-distance aqueduct (3.6km) from Mannings Heath WTW to Horsham sewer network.**

I am writing on behalf of Southern Water Services Ltd. (SWS) to formally request a screening opinion under the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations) regarding proposals to install a new 3.6km waste water pipeline from Mannings Heath WTW to the wider Horsham sewerage network.

Mannings Heath WTW is an existing operational wastewater treatment site located at National Grid Reference X 520292, Y 517383 and will be the starting point of the pipeline. The WTW is located to the north of Mannings Heath within the administrative boundaries of Horsham District Council and West Sussex County Council. The WTW is located at the end of an access road off Gaggle Wood as shown in Appendix A. The finish point of the pipeline will be at National Grid Reference X 129073, Y 129974 at the junction of Queensway and Chesworth Lane in Horsham.

This letter and enclosed supporting documentation is a formal request under the Town & Country Planning (Environmental Impact Assessment) Regulations 2017, for a screening opinion for the proposed development.

This letter and enclosed supporting documentation have been prepared to support the request for an EIA Screening Opinion and provide the information identified in the EIA Regulations. It presents the findings of a study undertaken to assess the potential environmental effects of the proposed scheme. It describes the environmental context; predicts the potential effects on the environment and outlines the management and mitigation measures that will be implemented to avoid significant effects.

The proposed development is considered to fall under “Schedule 2 development” of the EIA Regulations 2017:

- A description of development referenced in Column 1 of the table in Schedule 2; [parts] 10 (l) 'Installations of long-distance aqueducts';
- Schedule 2 where that development is located in, or partly in, a sensitive area as defined in Regulation 2(1).

The proposed works at Mannings Heath WTW are in themselves not considered to fall under Schedule 2 development as the area of that development would be less than 1000m<sup>2</sup> and are not located in a 'sensitive area'. However the works have been included in this screening assessment as it is not considered appropriate to separate the two and will be considered as whole, albeit under Schedule 2, Part 10 (l).

The EIA Regulations 2017 require that such proposals be assessed against three broad criteria, namely:

- The characteristics of the proposed development (e.g. its size, treatment process, use of natural resources, quantities of pollution and waste generated);
- The sensitivity of the receiving environment; and
- The characteristics and significance of the potential effects (magnitude and duration) (e.g. pollution and nuisance potential, topography, proximity of dwellings and the potential impact of traffic movements).

The design process has included consideration of proposals by SWS Environmental Advisors and Ecologists. This has enabled potential impacts to be avoided by design where possible and minimised and mitigated elsewhere.

SWS assessment of the proposed development and its potential environmental effects is that it is not likely to have significant adverse impacts on the environment and therefore we would not expect the development to be classed as an EIA development.

The proposed new pipeline infrastructure is located entirely within the third party land though if the proposed development is not screened as 'EIA development' the new infrastructure would largely be installed with the benefit of Southern Water's Permitted Development (PD) Rights for 'development not above ground level required in connection with the provision, improvement, maintenance or repair of a sewer, outfall pipe, sludge main or associated apparatus' - under the Town and Country Planning (General Permitted Development) (England) Order 2015 (as amended) (GPDO 2015), Part 13, Class B (a). At the time of writing it is also expected that the proposed works with Mannings Heath WTW would benefit from South Water's PD rights as they would fall under Part 1 Class B (f)...*'any other development in, on, over or under their operational land, other than the provision of a building but including the extension or alteration of a building'*.

A 15m section of the pipeline will be installed above ground and will not benefit from the permitted development rights detailed above as the proposed development will not be on operational land, as such a planning application will be submitted at a future date.

The temporary site compounds would benefit from PD rights under Schedule 2 Part 4 Class A of the GPDO 2015 for "the provision on land of buildings, moveable structures, works, plant or machinery required temporarily in connection with and for the duration of operations being or to be carried out on, in, under or over that land or on land adjoining that land".

The proposed works on the WTW will be developed to meet the requirements of the revised Environment Agency Environmental Permit.

## **Scheme Driver**

The Mannings Heath WTW project is driven by the Wastewater Framework (WFD\_IMPG) driver to meet a phosphorus limit (P) of 0.5 mg/L (Annual Average) with an iron limit (Fe) of 4 mg/l (95%) and 8 mg/l upper tier. The regulatory date has been confirmed as 22/12/2024. Southern Water are proposing to pump 9.1l/s from Mannings Heath WTW to the gravity sewer network that discharges to Horsham New WTW removing the continuous discharge to the receiving water body (tributary of the River Arun).

## **Development Description and Development**

The Mannings Heath solution includes the conversion of an existing structure at Mannings Heath WTW into a new pumping station within the WTW boundary and the construction of a 3.6km pipeline heading westwards discharging into the existing Horsham New sewer network before being conveyed to Horsham WTW for treatment and discharge. The current Flow to Full Treatment (FFT) consent of 7l/s will be also be increased to 9.1 l/s which will reduce storm spills at Mannings Heath WTW. The existing inlet screen that screens all incoming flows will be retained as will the storm tank and overflow.

The proposal to transfer flows to Horsham WTW rather than upgrading Mannings Heath WTW is dictated to a large extent by the physical constraints of the site. The new processes required to meet the new permit conditions could not have been accommodated safely on site due to the current size of the WTW and the severe ground subsidence on the western fence line. The site is surrounded on all sides by ancient woodland and is located in very close proximity to a steep wooded valley that adjoins the western fence line. Beyond the eastern fence line is narrow strip of ancient woodland that is itself adjacent to the private gardens associated with the residential properties on The Birches. Furthermore the requirement for ferric dosing would have resulted in regular chemical deliveries to the site and the addition of sludge tankering from the site, which would have led to an intensification of site activity and vehicle movements through a residential area.

A proposal was considered to build a new Mannings Heath WTW to west of the ancient woodland, though this would have required approximately 5600m<sup>2</sup> of land to accommodate the new process treatment plus a new 250m access road from the Brighton Road to be constructed. This was discounted on the grounds the location of the new WTW would fall within the High Weald AONB and a permanent change of land use of this nature would not be viewed favourably.

The proposed preferred development will consist of the following;

### **Mannings Heath WTW**

- Installation of a standby generator, including fuel delivery bunded area
- Installation of a new washwater pumping station and potable water connection.

- Installation of a new MCC, kiosk\*, ducts and drawpits and cabling.
- Extension of the existing mains supply to the new MCC.
- Installation of a new telemetry outstation.

\*kiosk dimension to be specified following detailed design. However, at the time of writing it is anticipated that any individual kiosk shall be less than 29m<sup>3</sup> in volume.

## Mannings Heath Pipeline

- Construction of a 3.6km pipeline from Mannings Heath WTW to the Horsham New (HONE) Gravity System. The pipeline will have an outside diameter of 160mm and will be routed from Mannings Heath WTW (UK grid reference TQ202 291) to manhole 3901 (UK grid reference TQ174 299) Chesworth Lane Horsham. The proposed works run through largely arable and pasture land with areas of hedgerow and woodland present.
- The pipeline shall include isolation valves, air valves and washouts as required by the detailed design and in compliance with Southern Water Specifications.
- Construction of above ground section of pipeline, 15m span, supported by four part buried concrete piers.

**Table 1: Proposed development - key plant and infrastructure**  
**(also refer to drawings 751162-CD101 ENV to 751162-CD105 ENV, 751162-CD202 and 751162-CD202 and 751085-SWS-XX-ZZ-DR-C-00001 )**

Description	Dimensions (l x w x h) in metres	Capacity (m <sup>3</sup> )	Finish / Material	Planning / PD *
Gravity and Rising Main Sewer (Below Ground)	3545m length 160mm diameter	NA	PE and Ductile iron	PD
Rising Main Sewer(Above Ground)	15m length 160mm	NA	Ductile Iron	Planning
Concrete Plinths	0.2x 0.8 x 1.5 2.9 x 1.9 x 2	NA 11	Concrete Coated Steel	PD/Planning PD
Fuel Tank				
Generator Container	4.9 x 2.9 x 2.4	34	Coated Steel	PD
Motor Control Centre (MCC) kiosk	TBC	TBC	Satin finish – Holly Green / Glass Reinforced Plastic (GRP) kiosk.	TBC
Air Valves	2.4m diameter	NA	Concrete Chamber with concrete cover slab	PD
Washouts	2.4m diameter	NA	Concrete Chamber with	PD

Description	Dimensions (l x w x h) in metres	Capacity (m <sup>3</sup> )	Finish / Material	Planning / PD *
			concrete cover slab	

In the table above: subject to EIA screening, Planning / PD refers to specific planning permission or Permitted Development (as outlined above).

## Temporary Working Areas / Compound/ Construction

Three temporary compound will be established along the pipeline easement and will each comprise of one welfare office with compound 2 having the addition of a drying unit, office and one lock up for materials. The compound will also provide parking areas for site staff vehicles. Some construction materials will be stored at these compounds but the majority of materials such as the polyethylene pipe and bedding material will be delivered to the point of excavation and installation at trench side and temporarily stored within the working easement.

Compound 1 will be located immediately adjacent to the A281 (Brighton Road) at grid reference x:519769, y:128899. The existing farm access and hard standing will be used and widened to accommodate the compound detailed above and will be demarcated by heras fencing, the total area will measure 25m x 25m.

Compound 2 will be located immediately adjacent to Sedgwick Lane at grid reference x:518708, y:128958. The existing farm access and hard standing will be used and widened to accommodate the compound detailed above and will be demarcated by heras fencing, the total area will measure 50m x 50m.

Compound 3 will be located immediately adjacent to Kerves Lane at grid reference x: 518161, y: 129314. The existing farm access and hard standing will be used and widened to accommodate the compound detailed above and will be demarcated by heras fencing, the total area will measure 25m x 25m.

### Open Cut pipeline

The proposed pipeline will be installed using standard construction methods. It is anticipated that there will be one pipeline gang working along the route. The methods of construction will be those conventionally used for this type of cross-country pipeline. Open cut excavation will be used for the majority of the route, with no-dig techniques employed in seven locations, where they will reduce impacts at environmentally sensitive areas or otherwise restricted areas such as road crossings.

A working corridor width of 20m between perimeter fences/demarcation will be required as a general rule, though this will be narrowed where required including the crossing of any hedgerows where trenchless method or existing gaps can be used where the working width will be 6m. The topsoil will be stripped for the width of the excavation and the access strip, and stored to one side of the easement. Construction vehicles and construction traffic will then run on the subsoil though this will be limited tractor and trailer, 6 or 9 tonne dump truck or excavator. The pipes will be strung out along the route in readiness for their installation.

The trench will be excavated to a depth of approximately 1.5m to 4.5m in order to ensure the pipe can be buried with a cover of 0.9m in the field and 1.2m in the road to prevent frost damage and excessive vehicle loadings. The width of the trench at the surface would vary depending on ground conditions at the specific location though would be a maximum of 1.6m, subject to trench depth. After placement of any necessary bedding material in the base of the trench, the pipeline sections would be installed.

The pipes will be strung out beside the trench and joined by butt welding method. Pipe sections are likely to be 12 metres in length and each weld is likely to take approximately 1 to 2 hours. The trench would be open for up to 50m to 100m at a time. Once three to four pipes are welded, these would be lowered into the trench using the excavators. The arisings would then be used to backfill the trench sections progressively as the work continued. Lastly, the stripped top soil layers would be returned to the trench line to restore the finished ground level.

### Trenchless (Horizontal Direction Drill)

Directional drilling uses technology to form an opening (known as a “bore”) into which the pipe can be pulled. The ‘drill’ uses a computer controlled steerable high pressure water jet to cut through the ground ahead of it along a predefined route. Initially a pilot bore will be drilled to establish the desired alignment of the pipeline. Once a satisfactory alignment is established ‘reaming’ passes will be made of cutting heads of increasing sizes until the desired diameter is achieved.

The high density polyethylene pipe will have a 160mm external diameter and a pipe wall of approximately 40mm. The entire length of pipe to be pulled through the bore will be assembled by electro-fusion welding of sections of pipe together, which effectively makes a single length of pipe. The pipe is pulled into the bore using cables and hydraulics. Where necessary the space around the outside of the pipe is filled with grout to prevent ground settlement. Pure bentonite solution will be used to lubricate the drilling process, remove cuttings, and support the bore while there is no pipe inside it. Bentonite is a natural absorbent clay mineral formed by breakdown of volcanic ash and is chemically inert.

A starter pit and the receptor pit for the directional drill are also needed either side of the drilled section these will occupy an area of approximately 1.2m deep x 3m wide x 4m long at a minimum up to a maximum of 2m deep x 10m wide x 10m long. Following completion these areas will be fully reinstated.

### Air Valves and Washouts

A total of 3 air valves (AV) and 4 washout chambers (WO) will be constructed at high points (AV) and low points (WO) along the pipeline route, the final locations are to be determined by hydraulic modelling. The chambers will be excavated to a depth of between 1500mm and 4000mm and a width of approximately 2400mm. The excavation will be undertaken using a 360° hydraulic excavator. Where present topsoil will be scraped off and stored adjacent to the excavation separately from subsoil.

Following excavation, the base of each chamber will be formed through concrete pour and then cylindrical pre-cast chamber rings installed in sections to ground level. A reinforced concrete slab will be installed at ground level by concrete pour and an accompanying concrete plinth. The excavation, construction and reinstatement of the air valve and washout chambers will require the same items of plant as detailed in the open cut pipeline methodology section.

SWS will seek agreement from the landowners for use of the land and seven access points to the pipeline working easement. Some access tracks to the working easement will require minor localised improvement, such as the filling of potholes. Following completion these minor improvements will remain though all other areas at the end of the construction period, temporarily affected by the proposed works, will be reinstated as close as practicable to the pre-existing site condition.

### Pipe Bridge Foundations

A total of four part buried concrete piers will be needed to support the pipeline crossing of the river valley. The piers will be excavated to a depth of between 1500mm and 2000mm and measuring approximately 800mm x 200mm. The excavation will be undertaken using a 360° hydraulic excavator where safe to do so and when not safe, or within the RPA of the retained trees, the excavation will be hand dug. Where present topsoil and leaf litter will be carefully scraped off and stored adjacent to the excavation separately from subsoil. Any soil not used for reinstatement will be translocated to another section of the woodland.

Following excavation, the base of each chamber will be formed through concrete pour and then pre-caste piers installed in sections to ground level and in the case of the two outer piers just above ground level.

### Construction Programme

Construction will commence in July 2023 and take approximately 12 months. It is not currently anticipated that any on site out of hours working will be required to achieve the finish date. Therefore, construction work will generally be undertaken between 07:30 and 18:00 Mondays to Fridays and 07:30 to 14:00 on Saturdays. Work on Sundays or any Bank holidays will be avoided where possible. Advance agreement with Environmental Health will be sought prior to any works during anti-social hours.

### Traffic Management and Access

During the construction period, the proposed development and compounds will be accessed from the public highway via existing farm tracks or additional stoned tracks, though primary access points will be from Kerves Lane, Sedgewick Lane and the A281. Use of any shared access tracks to obtain access to the pipeline easement will be agreed with the landowners and any reinstatement required implemented post works, though these access points are already used by farm plant and it is not expected there will be any change to the surfaces post completion.

The peak mobilisation period is anticipated to run for 20 days from July 1<sup>st</sup> 2023 and will require 1 x articulated lorry, 2 x grab wagons, 4 x light vans and 3 x cars per day to Compound 1,2 and 3. Once peak mobilisation has been completed approximately 1 x grab wagons, 3 x light vans and 1 x cars per day will be required for a total of 50 weeks, though this activity will not be in one place for that duration as the traffic and access points will change in accordance with which section of the pipeline is being installed.

Construction traffic movements will be managed in accordance with best practice through implementation of a Traffic Management Plan. Liaison will be undertaken with West Sussex County Council to agree signage requirements and any diversions or closures required.

Operation and maintenance of the scheme will be included into the daily, monthly and annual operation and maintenance routine of the site operations team. Therefore, it has been assessed there will not be a significant increase in operational traffic following the completion of the works.

### **Site Lighting**

Mannings Heath WTW is an unmanned site, with only periodic attendance by Site Operators for inspection and maintenance. It is not expected any lighting will be required, though if during detailed design this is required, all lighting will be manually switched on/off, with lights only being on when operators are on site and low light conditions occur. To mitigate any impact on protected species and the surrounding environment, lighting will be orientated away from site boundaries, to minimise light trespass and maximise the light on the tasks. Kiosks will contain internal lights that are manually switched on/off from within the kiosk.

Construction work will take place during daylight hours Monday to Friday with some working potentially taking place on Saturday. Temporary lighting will only be required when light levels are below what is required to safely carry out the task. Lighting will be manually switched on/off and will only be on as required to safely access site and for any specific task. The location of lighting will depend on the task to be undertaken and will be set up for individual activities as required. Site staff will aim to undertake all activities that would require task lighting during daylight hours to avoid impact. However, if it is absolutely necessary to undertake activities requiring task lighting outside of daylight hours the lighting used will be directional and shielded LED lighting.

### **Demolition / Decommissioning**

As part of the proposed development some existing features on the WTW will be decommissioned, including but not limited to the Primary Settlement Tank 1 & 2 and associated chambers, Primary Settlement Tank desludge pumps, Trickling Filter Dosing Siphon Chambers, Trickling Filters 1,2 &3, Humus Settlement Tank 1 & 2 and associated chambers, Air Lift desludge pumps, Filter wetting pumps, Washwater sump, Package SAFF and Blowers, SAFF FST tank, Final Effluent Chamber, Sludge Tank, Sludge tank decant chamber and MCC Kiosk.

Due to the size of and amount of concrete contained within these structures it is not proposed to demolish and remove from site, though they will be made safe and isolated from the wastewater treatment process.

Some existing below ground pipework made redundant by the works will be sealed with concrete plugs. There is also the potential for buried redundant structures to require break-out as part of groundworks, though this will be small and localised in nature.



## Site Reinstatement

As the above ground development at Mannings Heath WTW is entirely within the boundaries of an existing operational WTW, it is anticipated that there will be minimal effects on the surrounding environment. Reinstatement of the on-site working area will be to a standard that suits the ongoing operational function of the WTW. The temporary compound areas required for the construction phase of the pipeline will also be reinstated in agreement with the landowners. The pipeline working easement and the trench to accommodate the pipeline will also be fully reinstated to pre commencement conditions in agreement with the landowners.

## Ecology

The potential ecological impacts of the development have been considered and reviewed throughout the project development by an ecologist working with the engineering design team to ensure negative impacts are addressed and as far as practicable designed out, and that any opportunities for ecological enhancements are implemented where possible.

A Preliminary Ecological Appraisal (PEA) was undertaken of the proposed development in April and May 2022 and 8 ponds within 250m of the pipeline route were also tested for great crested newt eDNA at the same time. The PEA was used to inform further surveys and mitigation and an Ecological Impact Assessment (EclA) which is presented below.

In addition a walkover of the Mannings Heath WTW outfall location and 20m was undertaken in October 2021 to determine the impact of the flow cessation on the receiving watercourse.

## Statutory Designated Sites

### Internationally Designated Sites

There are no Internationally designated sites within 2km of the proposed development. However, there are two sites within 30km which are designated for bats:

- Ebernoe Common Special Area of Conservation (SAC) – c. 19km west.
- The Mens SAC – c. 14km south-west-west

The qualifying feature (and primary reason for selection) for Ebernoe Common is barbastelle *Barbastella barbastellus* and Bechstein Myotis *Myotis bechsteinii* bats and a qualifying feature (although not the primary reason for selection) for The Mens is barbastelle bats. The Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol document (South Downs National Park Authority and Natural England, 2018) provides guidance on measures to avoid impacts to bats associated with SACs and when surveys may be required. Natural England recommends that the following impact zones around any SACs are assessed:

- 6.5km key conservation area – all impacts must be considered as habitats within this zone are considered critical for sustaining the populations of bats within SACs; and

- 12km wider conservation area - significant impacts or severance to flightlines to be considered.

As neither site is within 12km it is highly unlikely that there would be an impact on either SAC from the proposed development. In addition to this, the core sustenance zone<sup>1</sup> (CSZ) (Collins 2016), which is the area surrounding a communal bat roost within which habitat availability and quality will have a significant effect on the resilience and conservation status of the colony using the roost, is 6km for barbastelle bats and 3km for Bechstein bats<sup>2</sup> and so the bat populations in the SACs will not be affected.

## Nationally Designated Sites

The following statutory designated sites are within 2km of the proposed route:

- St. Leonards Ponds Site of Special Scientific Interest (SSSI) – c.1km north-east of the proposed works; and
- St. Leonards Forest SSSI – c.1.5km north of the proposed works.

As the two SSSIs are over 1km from the proposed development and there are no likely impact pathways these sites are not at risk from the proposed development.

## Non-statutory Designated Sites

The following non-statutory sites are within 2km of the proposed route:

- Chesworth Farm Local Wildlife Site (LWS) – see below for further details;
- Denne Road Cemetery LWS – it is not considered likely that the proposed works will affect this site;
- St. Leonards Forest LWS – it is not considered likely that the proposed works will affect this site;
- Leechpool and Owlbeech woods LWS – it is not considered likely that the proposed works will affect this site; and
- Sedgwick Park LWS – it is not considered likely that the proposed works will affect this site.

The pipeline route runs directly through Chesworth Farm LWS towards the most western aspect of the scheme. The Chesworth Farm LWS citation (Local Wildlife Site Citation, site ID H71) states the following:

*Chesworth Farm LWS comprises fields of semi-improved neutral grassland bound by a network of species rich hedgerows, together with a complex of wetland habitats next to the River Arun. The hedgerows are a historical feature of the site and a notable habitat. The hedgerows and the river also provide important connective habitat across the site and connect with the wider landscape beyond the site. The wetland area increases further the diversity of habitats and*

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<sup>1</sup> Collins, J (ed.) (2016), Bat Surveys for Professional Ecologists; Good Practice Guidelines (3rd edn.) The Bat Conservation Trust, London.

<sup>2</sup> [Core Sustenance Zones Explained 04.02.16.pdf \(bats.org.uk\)](#)

species within the site. This includes rush pasture another notable habitat and the nationally rare and endangered plant Cut-grass. Chesworth Farm is also important for birds with 96 species recorded across the site over the last ten years.

Permission to work within this LWS has been obtained from Horsham District Council and method statements including timings of work and habitat management have been agreed with the ranger service for early site investigation work. It is anticipated this will continue for the main construction works.

Other non-statutory sites are not expected to be impacted by the works owing to the distance from them and lack of any potential impact pathways.

## Ancient Woodland

There are a number of blocks of ancient woodland within 2km of the pipeline route and one block located within the proposed works area immediately to the west of Mannings Heath WTW. The latter will be subject to some unavoidable impacts as a result of the scheme but appropriate mitigation shall be put in place to ensure that this is fully addressed, this is detailed in the later Trees and Arboriculture section.

## Summary of Habitats

Desk study information indicates that the following habitats of principal importance (**HPI**) occur within 2km of the proposed:

- Lowland mixed deciduous woodland;
- Hedgerows;
- Wet woodland;
- Ponds;
- Rivers.

The following UKHab habitats were identified during the site visit (UKHab names followed by codes below):

UKHab habitat name	UKHab code
Other neutral grassland	g3c
Modified grassland	g4
Wet woodland	w1d
Lowland mixed deciduous woodland	w1f
Other coniferous woodland	w2c
Other woodland, mixed	w1h
Hedgerow (priority habitat)	h2a
Aquatic marginal vegetation	f2d
Arable and horticultural/ cereal crops	c1c
Buildings	u1b5
Urban – developed land; sealed surface	u1b
Eutrophic standing waters, Ponds (priority habitat)	r1a, 19
Rivers (priority habitat)	r2a

Habitats will be reinstated like-for-like where removed and so no significant residual impact is expected. Careful consideration will be made of the ancient woodland immediately to the west side of Mannings Heath WTW, better quality areas of grassland within Chesworth Farm LWS and sections of hedgerow at crossing points which will be subject to a bespoke package of mitigation measures to ensure that there is no residual adverse impact. See below for further detail.

## Grassland habitats

Most of the grassland surveyed comprised of rather species poor 'modified' grassland lacking in herb species, but some better examples of grassland were located at western end of scheme area in the vicinity of Chesworth Farm LWS which are managed for conservation by Horsham District Council ranger service. Many of these support diverse meadow herb species such as Yellow Rattle *Rhinanthus minor*, Black Knapweed *Centaurea nigra* and Bird's-foot Trefoil *Lotus corniculatus*. One of these meadows was of particular interest with an area of boggy habitat at its centre containing many wet fen species and a diverse sward including relatively uncommon species such as Pignut *Conopodium majus*. This last meadow will not be affected by the scheme and no impacts are likely.

The better-quality grassland elsewhere within the Chesworth Farm LWS will be subject to careful reinstatement with full cooperation of Horsham District Council ranger service who have offered support so this can be done to the highest possible standard and with the intention of resulting in a net enhancement to the affected areas.

## Hedgerows

Grassland habitats were dissected by a network of native species rich hedgerows (an estimated c.13 hedgerow crossing along the proposed pipeline route); many of which were species rich and not highly managed and were connected with blocks of quite high-quality lowland mixed deciduous woodland present along the whole site survey route. Some/ most of these are likely to be classed as 'important' hedgerows under the Hedgerow Regulations 1997.

Use of existing gaps will be made wherever possible to avoid impacts to hedgerows, and where suitable gaps are not present trenchless techniques such as pipe poking/ directional drilling will be utilised to avoid adverse impacts to any hedgerow crossings where this is possible. All removed lengths of hedgerow will be replanted with a diverse range of native shrub species suitable for the locality which will result in an enhancement of the species diversity and age structure in a medium time frame. A Hedgerow Regulations removal notice will be obtained to cover situations where gaps need to be cut in sections of important hedgerows and cannot be replanted within the same year.

## Woodland

The woodland blocks present had a varied structure, and frequently contained a number of ancient woodland indicator plant species. Also, within the woodland habitat surveyed there were numerous large, mature trees throughout. One single block of ancient wet woodland habitat was identified in the deep incised valley woodland habitat immediately west of Mannings Heath WTW, and other strips of woodland had some wet habitats within them where they follow the course of streams/ ditches.

Plantation woodland supporting ornamental non-native conifers was also present in a few places, in one location together with a range of broad-leaved tree/ shrub species and several ancient woodland plants.

All woodland habitats will be avoided by the pipeline route/ working areas with the exception of the ancient woodland on the west side of Mannings Heath WTW where passage through the strip of woodland and across the deep stream valley is unavoidable. A botanical survey will be done to ensure that no significant impacts occur to the habitat and any impacts are mitigated fully and subject to enhancements where possible. Any leaf litter and soil will be retained and redistributed to the area of ancient woodland adjacent to the WTW access track. Further mitigation, if agreeable to the landowner will be provided through the planting of a number of new semi mature native species adjacent to the access track adding to and enhancing the ancient woodland as a whole, the full details of which will be detailed in the planning application submission for the pipe bridge element. Further enhancement measures would include the removal of the various invasive plant species present here and opening up of the woodland structure to allow more light in to encourage the ground layer vegetation.

## **Aquatic habitats**

The site survey area was in close proximity to the River Arun or its tributaries in several places and at one location the river and its tributary Horn Brook came within the site survey area – here there was potential for notable aquatic fauna and invasive plant species were recorded.

The pipeline will cross one main river and four ordinary water courses but this will be carried out using trenchless technology or in one case using the deck of the existing road bridge or the outside of the bridge structure. Standard pollution prevention measures will also be in place therefore the construction will not impact the watercourses.

During the operation of the scheme, there will no longer be a discharge from Mannings Heath WTW into the small tributary (ordinary watercourse) of the River Arun except for storm overflow. However, the storm overflow events will be reduced as the volume of sewage to be treated will increase. This overall reduction of sewage into the small tributary is of benefit to the aquatic ecology and although the flow in the small tributary will decrease, it will become more akin to its natural state. The sewage from Mannings Heath will be treated at Horsham to a higher standard than at present and so this is also a beneficial impact.

## **Protected species**

### **Badgers**

There is a risk of impacting Badgers *Meles meles* during the proposed works should setts be present within 30m of the proposed route. There is a risk of disturbance and Badgers becoming trapped within excavations. No Badger setts were identified during the site visit, however setts could be present in dense areas of vegetation which were not searched during the survey. A pre-construction site walkover will check for this possibility and suitable advice provided if any issues are identified.

## Bats

There is a risk of affecting foraging, commuting, and roosting bats during the proposed works. There is also a risk of death or injury to individual bats or destruction of a roost during the proposed works should the proposed works require the removal of any mature trees. In addition to this, bats may be subject to temporary disturbance from movement of vehicles and pedestrians along foraging and commuting routes, and impacts from increased light levels should the proposed works be undertaken outside of daylight hours.

As the pipeline route will run in proximity to some large mature trees with potential for roosting bats along field boundaries and within the ancient woodland immediately to the west side of Mannings Heath WTW, a bat roost assessment will be undertaken on any trees likely to be affected. If any works are assessed as affecting bat roosts, they will either be redesigned, subject to standard generic mitigation measures, or a licence will be obtained from Natural England where this is not deemed adequate to protect the bat roosts from any adverse impacts.

## Breeding Birds

There is a risk of the proposed works impacting breeding birds through the disturbance to/clearance of vegetation. The removal of vegetation may disturb nesting birds if carried out during the breeding bird season (March to August inclusive). All habitats may potentially support nesting birds, including open grassland habitats where ground-nesting species such as Skylark *Aluada arvensis* and meadow pipit *Anthus pratensis* may occur especially in Chesworth Farm LWS.

Early site investigation works within Chesworth Farm have been undertaken in consultation with the local ranger and appropriate timings and mitigation agreed to mitigate for any potential impact. A further pre-construction site walkover for the main works will check for breeding birds and suitable advice provided if any issues are identified and mitigation agreed with the local ranger.

Barn Owls: It is considered unlikely that any impacts will occur to barn owls *Tyto alba* provided that any nesting locations and their vicinity are avoided.

## Great Crested Newts

No ponds will be directly impacted by the proposed works. There is however a risk of affecting Great Crested Newts (GCN) *Triturus cristatus* in their terrestrial phase through death or injury to individuals and destruction of habitat through vegetation clearance. For temporary linear schemes developers should take into account any potential impacts when working within 250m of GCN breeding ponds – this needs to be factored in where working within 250m of Pond 37341. This pond lies approximately 150m from the proposed working area, and as such there is a possibility of some impacts arising for GCN – the grassland is not considered to be a resting place for GCN, but may be used for dispersal and foraging, and GCN may use the two sections of hedgerow crossed at approximately 200m from the pond as a resting place.

It is proposed the impacts will fall below the threshold that would trigger the need for an organisational mitigation licence and that mitigation for GCN can be covered by means of a precautionary method of working for this species. The possible impacts and scheme design options will be carefully considered to establish what is needed so that adverse impacts can be avoided to this species.

## Hazel Dormice

There are a minimum of 13 hedgerow crossings identified in an initial assessment of the pipeline route, and the scheme encroaches into the woodland located adjacent to Mannings Heath WTW. Without appropriate mitigation there is a risk of impact to individual Dormice *Muscardinus avellanarius* and the destruction of Dormouse habitat during the proposed works through the removal of hedgerows, scrub, and woodland.

The approach taken minimising impacts to hedgerows and woodland habitat as detailed in the earlier section will minimise impacts to Dormice. Consequently, as for GCN, is considered likely that impacts will fall below the threshold that would trigger the need for an organisational mitigation licence and that mitigation for Dormice can be covered by means of a precautionary method of working for this species. The possible impacts and scheme design options will be carefully considered to establish what is needed so that adverse impacts can be avoided to this species.

## Reptiles

Without appropriate mitigation there is a risk of impact to individual reptiles through the disturbance to/ clearance of vegetation, especially where working within tussocky/ undisturbed other neutral grassland at the western end of the site survey area (Chesworth Farm LWS).

Generic mitigation measures such as sensitive two-stage vegetation clearance will be included within the Construction Environmental Management Plan (see below) and implemented in any suitable habitat and as such no significant residual impacts will occur to reptiles.

## Water vole and Otter

If any watercourses or their marginal habitats are affected by the proposed scheme there will be a potential risk of disturbance to Otters *Lutra lutra* and/ or Water Voles *Arvicola amphibius*. As the stream within the ancient woodland west of Mannings Heath WTW is entirely unsuitable for these species has no potential for their occurrence and as all other waterbodies are avoided through construction method there is no potential for impacts to Otters and/ or Water Voles.

## Invasive Plant Species

There is a risk of spreading invasive species during the proposed works through the tracking of vehicles and excavations. There are particular risks from the spread of invasives where Skunk Cabbage *Symplocarpus foetidus* and Floating Pennywort *Hydrocotyle ranunculoides* were found in the wetland area off Chesworth farm, along Horn Brook/ River Arun.

Risks will also be present where works are to be carried out in proximity to the hedges and habitats where invasive Rhododendron *Rhododendron ponticum* occurs beside Mannings Heath WTW, and where Cherry Laurel *Laurus prunocerasus* occurs in woodland strips within the scheme area.

Standard best practice mitigation measures will be included within the Construction Environmental Management Plan and implemented to ensure that no spreading of invasive species is caused as a result of the scheme.

The precautionary working methods referred to above together with any other ecological mitigation required will all be included within a Construction Environmental Management Plan (CEMP). This document will be agreed with the contractor as part of their working method statements and its implementation overseen by the scheme ecologist to ensure that all mitigation measures are completed to the highest possible standard.

## Archaeology and Cultural Heritage

A Desk based assessment (DBA)<sup>3</sup> was undertaken in August 2022 and concluded that;

- The Scheme does not pass through any Conservation Areas, although Horsham Conservation Area lies to the north-west of the scheme;
- No listed buildings are present in any of the proposed parts of the scheme, with the majority located in the historic core of Horsham and the nearest, being the Grade II\* listed Chesworth House (1027063) located approximately 265m to the south-west;
- There is one scheduled monument within the Study Area, a well-established, medieval MOATED SITE AND FISHPONDS 15M SOUTH OF CHESWORTH HOUSE (10214460), located approximately 165m south-west of the proposed pipeline in the Chesworth Farm area;
- A section of the proposed pipeline (approximately 1km) passes through the Chesworth House Medieval Moated Site Archaeological Notification Area (DWS8533).
- The majority of the Site is considered to lie within an area of generally unknown potential for most periods with moderate potential for the medieval and post medieval/modern periods;
- This assessment has identified some moderate localised Palaeolithic and palaeoenvironmental potential in deeper deposits in the vicinity of the lower-lying wetlands where the watercourses (River Arun and Hornbrook tributary) converge around Kerves Lane;
- It is possible that the best archaeological potential for the vicinity of the appraisal Site lies in the lower-lying part of the Site close to the watercourse, where the superficial gravels are located, but it is not clear how accurately the deposits are recorded here,
- The cartographic evidence has revealed a relatively static landscape in which agriculture has been the predominant factor;
- Where present, preservation of archaeological remains across the scheme is likely to be good owing to a broad absence of previous impacts;
- Archaeological deposits within previously undeveloped fields across the appraisal area are likely to survive below the depth of modern ploughing;
- A number of non-designated heritage assets are recorded along or close to the scheme (e.g. the 19th century farmstead and a former outfarm at Buckleigh and anti-tank blocks at the entrance to Chesworth Farm) and there is potential for activity relating to these sites to extend beyond the limits of previous investigations or the identified location of the asset. Where thus far unknown heritage assets are present along the route of the proposed pipeline, there is a possibility that they will be directly impacted by the

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<sup>3</sup> Mannings Heath WTW to Chesworth Lane, West Sussex Historic Environment Desk-Based Assessment (Heritage Statement) ASE Report No. 2022208



groundworks for the scheme, which is likely to result Archaeology South-East Mannings Heath WTW to Chesworth Lane ASE Report No. 2022208 52 in damage and disturbance, and/or potentially the complete destruction, of these assets;

- Minor impact on some surviving historic boundary hedgerows in areas where open trenches are proposed may be unavoidable, but the temporary nature of the scheme means they are likely to be restored fairly quickly following groundwork. Where possible, the scheme may mitigate any impact on extant hedge-lines by using either directional drilling / auger-boring methods or crossing where there are natural gaps; and
- This assessment has found that the scheme will have no significant impact on the setting of designated heritage assets, because of its largely temporary and reversible nature

Given that the proposed route runs through an Archaeological Notification Area (Red – very sensitive) and the remainder runs through an area with either unknown or moderate archaeological potential, archaeological mitigation works were advised and these will be fully implemented prior to main construction and at the time of writing are currently being progressed.

Any excavations proposed in fields (e.g. compound strips and working corridor strips) will be subject to a programme of pre-construction archaeological investigation (non-intrusive geophysical survey and evaluation trenching). This will allow for any surviving archaeological remains to be assessed and recorded prior to the pipe being installed.

Archaeological watching brief monitoring may be also required in any areas where geophysical survey and/or archaeological trenching is not considered to be practical, though this will be confirmed following the initial field work.

At the time of writing Southern Waters contractors are finalising a Written Scheme of Investigation (WSI) that captures the recommendations above with Archaeological South East (ASE) our archaeological specialists. The WSI will ensure that any archaeology found will be protected where possible, and recorded and reported on. Given the extensive archaeological evaluation and reporting proposed it is assessed that any risk to archaeology will be adequately mitigated for and no significant impact is anticipated.

## **Waste and Natural Resources**

The outline design for the scheme considered the waste hierarchy and considered opportunities to reduce waste. A waste management strategy will be developed at detailed design stage of the project to minimise waste.

Approximately 2800m<sup>3</sup> of excavated material will be produced from the proposed works, 900m<sup>3</sup> will be used for backfilling leaving 2,300m<sup>3</sup> approximately for offsite disposal, though the exact volumes will not be confirmed until detailed design has been completed. The excavated material will temporarily be stored in the working width of the excavation prior to removal. Any materials that cannot be re-used on site will, where possible, have a beneficial off-site use identified with disposal to landfill being the last resort.

## Trees & Arboriculture

All woodland habitats will be avoided by the pipeline route/ working areas with the exception of the ancient woodland on the west side of Mannings Heath WTW where passage through the strip of woodland and across the deep stream valley is unavoidable.

A topographical survey has been undertaken which has been used to inform an arboricultural impact assessment which in turn has informed the arboricultural method statement, these are included as supporting documents. The design and routing of the pipeline and pipe bridge have fully considered and adopted the mitigation hierarchy of avoid, mitigate and compensate in accordance with NPPF paragraph 180a, this approach is of particular relevance to the Gaggle Wood Ancient Woodland.

Mannings Heath WTW first appears on the 1958 Ordnance Survey map where an area of Gaggle Wood has been cleared and an access road created. The first establishment of the WTW predates the designation of Gaggle Wood as ancient woodland and the designation is criss-crossed by existing buried Southern Water infrastructure (See Appendix A), the WTW access road and a pipe. The drawing of the boundaries of the ancient woodland resulted in the WTW becoming surrounded on all sides by the ancient woodland designation. As a result any new assets that are required to be connected into the WTW have to pass through the ancient woodland and as such complete avoidance of this designation is not possible.

The proposed development has considered four route options utilizing the mitigation hierarchy of avoid, mitigate or compensate, these are listed below and each option is discussed in more detail in the following sections.

1. Open Cut excavation down the A281, Gaggle Wood Road and down the access track to the WTW – 200m open cut trench through ancient woodland;
2. HDD drill from field to the west of the ancient woodland, and into the existing works return pumping station or another location within the WTW;
3. HDD drill from field to the west of the ancient woodland into a new reception shaft located in the access road, 6m x 6m x 3m deep reception pit plus 75m open cut through ancient woodland;
4. Single shallow shaft in the field to the west of the ancient woodland and arguer bore into the east bank, scaffold across river, auger bore from the works return pump station in to the west bank, install pipe bridge between two concrete piers with a total span of approximately 15m.

### Option 1:

This option has been primarily been discounted as the area of ancient woodland to be impacted would have been far greater than the other options proposed. The 200m section of access track into the works, is very narrow and has existing assets which means that excavating the size of trench needed and space required for laying out the pipe and working on it, would have required a 10m widening of the 200m access track, resulting in 2000m<sup>2</sup> of impact to Ancient Woodland.

### Option 2:

This option was eliminated due to constructability limitations as ground conditions are known to be sand stone which would at best limit the control of any HDD resulting in a significant risk of break out into the river and ancient woodland, or at worst would result in an aborted drill. In addition the topography of the riparian corridor and presence of the river would necessitate a drill depth of approximately 13m to 16m Below Ground Level (bgl). As the width of the WTW is

35m there would not be enough room to accommodate a drill reception area within the WTW itself as the resulting upward bend of drilled pipe would significantly increase the risk of sediment collection and blockage failure, increasing the risk of untreated effluent being released to the environment. This would require the HDD reception area to be accommodated outside of the WTW – see option 3 below.

#### Option 3:

This option was eliminated due to HDD ground condition risks detailed above, though this option would have helped reduce the operational risks associated with Option 2. However the reception pit location would have impacted approximately 18m<sup>2</sup> of ancient woodland plus a 10m widening of approximately 75m access track to route the open cut pipeline back into the WTW, which would have resulted in a total 768m<sup>2</sup> of ancient woodland being impacted.

#### Option 4:

This option is proposed to be progressed as it represents the best option in terms of constructability and minimizes the area of impact on the ancient woodland. The construction area will impact on approximately 220m<sup>2</sup> of ancient woodland, the full details of the pipeline alignment and the trees impact are detailed in the supporting Arboricultural Impact Assessment and Method Statement, though are summarized below.

Given the constrained setting of WTW option 4 of the constructable options will require the least amount of excavation within the ancient woodland designation and lowest impact. The pipeline route has been optimized to ensure that no Category A trees will be adversely impacted with the route requiring the removal of Category C groups of Hazel, one category C Holly and one category B Beech. Works will be required with the wider root protection area of two category A trees, though these works will be limited to the installation of pipeline supports with the majority of excavation being negated through the fact that the pipeline itself will be above ground in this location.

All works within the designation will be implemented in accordance with mitigation detailed in the Arboricultural Method Statement and a project arboriculturalist will be advising on the construction works and design as it progresses to ensure any impacts are mitigated for, this will include but will not be limited to the supervision of any reinstatement to ensure the pipe supports and surrounding material does not materially harm the soil bank or any roots of retained trees through over compaction. Any leaf litter and soil will be retained and redistributed to the area of ancient woodland adjacent to the WTW access track. Enhancement measures would include the removal of the various invasive plant species present here and opening up of the woodland structure to allow more light in to encourage the ground layer vegetation. Further mitigation, if agreeable to the landowner will be provided through the planting of a number of new semi mature native species adjacent to the access track adding to and enhancing the ancient woodland as a whole, the full details of which will be detailed in the planning application submission for the pipe bridge element.

The proposed works are unlikely to significantly impact the visual amenity of the local area as a result of the proposed tree removals which are located within a ravine area and are not visible to the surrounding area. Although the trees that have been identified for removal are situated within an area of ancient woodland, the trees selected are only representative of a low retention value. Whilst a section of the works are to be undertaken within the RPAs of retained trees, the nature of those works are such that they can be completed without causing significant impact,

subject to the adoption of appropriate working practices as detailed in a future Arboricultural Method Statement.

Given the context of the existing assets within the designation and the restrictive setting of the WTW these impacts have been mitigated to ensure the impact on the ancient woodland is not significant.

## Water Resources

The proposed works will not be located within a groundwater Source Protection Zone, though will cross four ordinary watercourses and one Environment Agency WTW main river, though the river will be crossed utilising trenchless technology.

The proposed pump away solution will result in a cessation of flows from the Mannings Heath WTW into the receiving watercourse. An ecological assessment<sup>4</sup> was undertaken to better understand the impact that this cessation of flow would have on this watercourse and also the River Arun. The Mannings Heath WTW final effluent cessation technical memo concluded that removing the flow from Mannings Heath WTW would return the receiving stream to a more natural state and will of course also reduce the nutrient input at this location which would have a positive impact on the stream and the receiving waterbodies downstream. It was also concluded that the contribution of the flow from the WTW to the River Arun was so small that it would not have any impact on the ecology of the River Arun or the Upper Arun SSSI some 26km downstream.

Any variations to the current discharge of FE from Mannings Heath WTW will need to be agreed between SW permitting team and the Environment Agency.

The receiving watercourse from Mannings Heath WTW is not a WFD waterbody though the ordinary watercourse flows into the River Arun which is a WFD waterbody (Arun Source Waterbody (GB107041012920) - this had a Poor status in 2016). The pipeline also crosses a section of this WFD waterbody<sup>5</sup>, though it is currently proposed to be installed utilising trenchless construction methodology. Due to the nature of the works a WFD screening assessment will not be required, though this can be confirmed following a constructability review.

The construction activities associated with the proposed works may require the temporary discharge of water from excavations. All dewatering activities are to be undertaken in accordance with the 'Temporary dewatering from excavations to surface water' Regulatory Position Statement (RPS) published by the EA.

The proposed works will not be located within a groundwater Source Protection Zone although they are on a Secondary A superficial aquifer with no underlying bedrock aquifer.

Measures to prevent contamination of controlled water will be adopted and incorporated into construction management planning. Any re-fuelling works will be carried out in a designated bunded area of hardstanding more than 10m from a watercourse or surface drain.

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<sup>4</sup> 751162 - Mannings Heath WTW Final effluent cessation Rev1

<sup>5</sup> <https://therivertrust.maps.arcgis.com/apps/webappviewer/index.html?id=f17e7729d7fb412ba77fa33287b9c725> - [last accessed 24/03/22]

Given the above it is assessed that any risk to water resources will be adequately mitigated for and no significant impact is anticipated.

### **Flood Risk**

Gov.uk Flood Risk Maps for planning indicates the proposed works are largely in a Flood Zone 1 (low risk of flooding from rivers (1 in 1000)), though some sections of the pipeline will be within Flood Zone 3 (High risk of flooding from rivers (1 in 100)).

Long term flood risk maps indicates the site is predominantly of very low risk of flooding from surface water but there are also areas of high risk that the pipeline will cross.

The crossing of the four drains/ditches will require ordinary water consent from the LLFA and a number of conditions will likely be attached to any consent granted. A section of the pipeline crosses a section of the River Arun which is a designated Environment Agency main river. It is currently proposed to cross the River Arun utilising trenchless construction methodology which will benefit from a FRA 3 exemption, though this will need to be confirmed and registered with the Environment Agency.

Given the above it is assessed that there no significant flood risk is anticipated.

### **Landscape and Visual Assessment**

The majority of the proposed works will not take place within a statutory designated area for landscape, though a 500m section of pipeline will cross the High Weald AONB.

The High Weald AONB, a designation of national importance for landscape protection. The High Weald National Character Area (NCA) Profile 122 is characterised by a mixture of fields, small woodlands and farmsteads connected by historic routeways, tracks and paths. There are four statements of environmental opportunity detailed within the NCA profile (SE01-4), which include the maintenance and enhancement of existing woodland and pasture components, including historical field patterns bounded by shaws, hedgerow and farm woods and promoting benefits for water quality and water flow within all Wealden rivers, streams and flood plains.

The proposed scheme will not permanently impact upon historic field patterns, routeways or woodland, shaws or farm woodland and no trimming/lopping of trees will be required within the AONB. The outcome of the proposed scheme is improved quality of final effluent released into the environment, thereby contributing to an improvement in the water quality of the river and complementing the statements within the NCA.

The section of pipeline that crosses the AONB is currently a mixture of arable and grazed field immediately to the west of the WTW which is located at 68m Above Ordnance Datum (AOD), though the site falls away approximately 2m over a distance of 40m in an east to west direction. The existing process units are either positioned on level ground or terraced into this slope. The closest residential receptor is located approximately 50m to the east at a similar elevation, though there are no views of the WTW from this receptor or other receptors as the site is screened on all sides by dense woodland.

None of the boundary and screening vegetation to east, west or north of the WTW is to be removed, though a 10m corridor (at its widest) will need to be established to enable the installation of the proposed pipe bridge, though the majority of the trees in this location to be removed are of a height and location as to not be visible from the AONB, with the larger more significant trees being retained. In the unlikely event that wider ranging views are afforded to the WTW these are not anticipated to significantly alter as a result of the proposed works as they are in keeping with the extant infrastructure.

The permanent elements of the works will largely be below ground though there will be a requirement for seven above ground manholes, though these will be flush to the ground level in track and road locations, or if required by the land owner include a concrete collar that will sit above the ground level or be fenced off with stock proof fencing or similar in off track/highway locations. Once the temporary installation works have been completed there will be no change to the existing appearance of the area.

The proposed above ground crossing of the watercourse immediately to the west of the WTW will not be visible from any location other than within the ravine itself which is privately owned and not open to the public. Furthermore the vast majority of the pipe supports will be buried below ground level with only the 160mm ductile pipeline and associated security devices (fan and raptors) being visible, albeit for only a 15m span. The existing above ground pipeline, which is considerably longer in length and higher in elevation than the proposed, is not visible from any publicly accessible areas and/or the adjacent AON, this will also be the case for the proposed 15m section.

Based on the above, no likely significant effect on landscape is anticipated.

## Noise

### Construction

There will be temporary and relatively short-lived noise impacts during construction. During construction appropriate working hours and good working practices in accordance with BS5228 –Parts 1 & 2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites will be followed (including sensitive timing of potentially noisy work) which will lower the potential for noise impacts. Liaison will take place with the closest residential receptors so they will be aware of the construction programme duration and when noisier activities will take place. The mitigation identified in the BS 5228:2009+A1:2014, Parts 1 and 2 construction noise and vibration assessment will be fully implemented during construction.

### Operation

As part of the proposed works a standby emergency generator will be installed at Mannings Heath WTW which will only be used when the site experiences a power cut. Southern Water carried out a “fall off calculation” to determine if a full BS 4142:2014+A1:2019 (methods for rating and assessing industrial and commercial sound) assessment was required.

WHO guidelines (World Health Organisation, Night Noise Guidelines for Europe, 2009) state in order to avoid sleep disturbance a rating of 45dBLAeq at the facade of a residential property is recommended. The predicted noise level at facade associated with the proposed installation was calculated as 49dB(A), therefore above the WHO guideline value. Noise levels calculated

for the residential curtilage are 51dB(A), therefore above the WHO guideline value for outdoor space of 50dB LAeq.

BS8233:2014 recommends that an internal noise level of 30dB LAeq,8hour is desirable between the hours of 23:00 to 07:00 and 35dB LAeq,16hour between the hours of 07:00 to 23:00. Where development is considered necessary BS8233:2014 states that internal noise target levels can be relaxed by up to 5dB and reasonable internal conditions still be achieved. The total anticipated noise level in the bedroom on the exposed facade associated with the proposed installation is 34dB(A).

Given the levels anticipated in this assessment and the infrequent use of the generator during powers cuts it is not expected that a full BS 4142:2014+A1:2019 assessment is required, as complaints and the need for acoustic mitigation are not considered likely.

Given the temporary and linear nature of the proposed development and distance to sensitive residential receptors, noise emissions from the proposed works are unlikely to result in any significant impact at these receptors.

## **Odour and Dust**

The proposed development will not result in any new sources of odour from what is currently on site at Mannings Heath WTW. The pipeline itself will have a seven washouts and air valves at low and high points respectively, though these are not typically sources of odour, the air relief valve in the air valve chamber connects to the sewer and depending on the hydraulic conditions air is drawn into the pipeline or expelled to atmosphere. Given the infrequent operation of the air valve and the closest receptor to these air valves is beyond 100m it is not anticipated there will be any significant odour impacts.

During construction good practice measures will be implemented such as damping down of dust generating activities will be undertaken and specified in a Construction Environmental Management Plan.

Given the temporary and linear nature of the proposed development and distance to sensitive residential receptors, dust emissions from the proposed works are unlikely to result in any impact at these receptors.

## **Rights of Way and Local Disturbance**

There are a number of Public Rights of Way (PRoW) in the vicinity of the proposed route and several of these will require temporary local diversion. This will be undertaken via consultation with the PRoW Officer at West Sussex to agree and secure any consents required, though it is anticipated that the PRoW will remain open.

As the works will be predominantly in off highway locations, there is not anticipated to any significant impact on road users. A New Roads and Street Works Act Consent will be obtained for works within the highway and liaison will be undertaken with West Sussex Country Council to agree signage requirements and any diversions or closures required, this will be of particular relevance to the short section of pipeline and tie in works on Chesworth Lane.

Although there will be a small amount of additional traffic on the local highway during the construction works as detailed in the traffic management section above these will be small in number and spread along the pipeline and its easement access points.

Given the temporary and linear nature of the proposed development and distance to sensitive residential receptors, rights of way and local disturbance from the proposed works are unlikely to result in any significant impact.

### **Risk from Major Accidents and/or Disaster**

The proposed pipeline and works at the existing WTW site do not present a significant risk from major accident and/or disaster.

### **Risk to Human Health**

The design of the pipeline will ensure that the necessary construction standards are met to provide adequate resilience against major accidents and disasters. During the construction period risk assessments and method statements will be prepared to ensure that adequate responses are planned in the event of the above in line with current Health and Safety Legislation. Once operational the proposed works will improve the quality of treated effluent being released to the environment, which further safeguards human health.

### **Cumulative**

A review of the West Sussex County Council and Horsham District Council planning portal confirmed there are no major developments that could cumulatively result in a significant environmental impact. Furthermore given the relatively low numbers of construction and operational vehicle movements associated with the WTW and pipeline it is not expected there will be any significant cumulative effects regardless of any future development.

### **Summary**

Throughout the works, the Wildlife and Countryside Act 1981 (as amended), the Habitat Regulations 1994 (as amended) and all other relevant environmental legislation will be complied with. All protected species licenses will be obtained as required as informed by further surveys and any mitigation required will be carried out. Where possible, construction methodology will be selected to minimise potential impacts to any protected species.

The archaeological sensitivity of the area has been recognised and mitigation measures will be carried out to ensure collection and recording of any information and items of interest.

The crossing of the ancient woodland and the sensitivity and importance of this designation has been addressed through the application of the mitigation hierarchy as detailed within the paragraph 180a of the NPPF.

In view of the project design, planned project management and our assessment of the areas to be affected we are of the opinion that the proposed development will not lead to significant effects, and as such an EIA is not necessary. We request the Council's opinion in this matter.



Should you require any further information to form a decision, please do not hesitate to contact me.

Yours faithfully

**John Nicklin**  
**Principal Environmental Advisor**  
**Southern Water**

## Appendix A Environmental Information Map – Mannings Heath WTW



## Appendix B – Pipeline Route Overview – Low Res

