

Hampshire Water Transfer and Water Recycling Project Water Recycling Plant Site Selection Continual Review Report

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Version 1

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Executive Summary

Introduction

This report details the process and outcomes of the Water Recycling Plant (WRP) site selection continual review work associated with the Hampshire Water Transfer and Water Recycling Project (the Project). Stages 1-4 of the site selection process was undertaken in 2020 and 2021 and the outcomes were presented in Southern Water's (SW) Gate 2 submission to the Regulators' Alliance for Progressing Infrastructure Development (RAPID). This involved both quantitative and qualitative assessment of different WRP parcels, ultimately identifying WRP_72 as the preferred site and WRP_71 as a back-up. The methodology and outcomes of this work can be found at 'Gate 2 Submission: Supporting Technical Report Annex 5: Options Appraisal Process – Future Needs Update (December 2021) (Section 2).

This continual review work updates and tests the site selection process through the addition of Stage 5 and 6, as further details on existing sites emerge and new information is considered, including feedback from the Summer 2022 non-statutory consultation and ongoing engagement with Havant Borough Council (HBC).

Stage 5 of continual review work involved a re-review of all parcels considered as part of Stage 1 of the site selection process reported in SW's Gate 2 submission against qualitative factors (environmental, planning, construction and engineering), ensuring conclusions remain up to date. It also included parcels identified when Stage 1 was revisited following SW's Gate 2 submission to account for different WRP parcel size requirements as a result of the development of the project (see Table 3.1 below).

Stage 6 of the continual review process reviewed existing parcels to ensure the drawing rules had been applied consistently and identified any new parcels for consideration. A qualitative assessment was undertaken for both Stage 5 and 6 so that robust conclusions can be drawn on site selection preference.

Stage 5: Methodology

A two-step methodology to undertake the Stage 5 review was developed. Step 1 considered existing WRP parcels against the criteria identified for the WRP, set out below. A potentially suitable parcel must:

- Be at least 3.2 hectares (ha);
- Not be allocated for housing in a relevant local plan, have planning permission for housing development, or be under construction for housing development;
- Not be on land allocated (in a relevant local plan) as open space;
- Not be within a national or international designated ecological site
- Not be within a national landscape designation; and
- Not be within an international and national heritage designation.

The parcels that did not meet one or more of these criteria were not progressed further (see Section 2.2 which presents the explanation of the below criteria).

The second step of the Stage 5 methodology included a review of environmental, planning, and constructability and engineering considerations for each parcel that met the identified criteria in Step 1. This built upon earlier assessment from Stages 2-4 on these parcels. Subject matter experts (SMEs) were tasked with:

- Identifying receptors, their sensitivity and potential impacts (during construction and operation of the WRP).
- Reviewing environmental and planning risks and opportunities to avoid, reduce, mitigate or offset these.
- Construction and engineering SMEs considered: access; available developable area; enabling works required; existing services; ground conditions; and potential programme impact on delivery.

Environmental and planning reviews were carried out as desktop assessments, whereas the construction and engineering assessments involved desktop work and a site visit to each parcel. The results of the environmental, planning, and construction and engineering reviews were each assigned a risk RAG (red, amber, green) rating, which indicated high risk (red), moderate risk (amber) and low risk (green) (Table 2.1-2.3).

Outcomes of Stage 5 Continual Review: Qualitative Review of Parcels

A total of 24 WRP parcels were assessed in accordance with the criteria for Step 1 of Stage 5 of the methodology; 13 of the 24 parcels were not progressed at this stage, whilst the remaining 11 parcels were progressed to Step 2 of Stage 5 (further qualitative assessment). The 11 parcels that were progressed to Step 2 were: WRP_58, WRP_68, WRP_70, WRP_71, WRP_72, WRP_73, WRP_74, WRP_75, WRP_76, WRP_146 and WRP_149.

Table 1 below shows the RAG scoring for the 11 parcels at Step 2. As set out in the NPSWRI (paragraph 4.10.1), applicants should discuss the land use implications of projects with the relevant local planning authority. The site selection methodology was included in the Summer 2022 public consultation, and ongoing discussions have been held with HBC to seek feedback on the initial outcomes of this review.

Table 1: Results of the Stage 5 qualitative review

Parcel	Area (ha)	Environment	Planning	Constructability and Engineering
WRP_58	7.8	Red	Amber	Amber
WRP_68	5.6	Red	Green	Amber
WRP_70	3.7	Red	Amber	Amber
WRP_71	10.6	Green	Green	Amber
WRP_72	9.3	Amber	Green	Green
WRP_73	5.3	Amber	Amber	Red
WRP_74	5.4	Red	Amber	Amber
WRP_75	5.3	Red	Amber	Amber
WRP_76	5.5	Amber	Green	Red
WRP_146	4.2	Amber	Amber	Red
WRP_149	6.1	Amber	Amber	Amber

Stage 6: Methodology - New and Amended Parcels

This stage identifies alternative WRP parcels, or alternative parcel configurations, that were not previously considered. This is to ensure that all reasonable alternatives are considered. To be consistent with the earlier site selection evaluation, environmental, planning, and construction and engineering factors were assessed in line with Stage 4 criteria (plus any additional criteria used during Stage 5, e.g. potential impact to noise and air quality).

Stage 6 firstly involved a check and review of existing parcels to ensure the drawing rules were applied consistently. This resulted in amendments to a number of existing parcels.

Amended parcels (Section 6):

- WRP_153: This parcel consists of WRP_146 and the adjacent existing general industrial areas to the south and east;
- WRP_154: This parcel is an amendment to WRP_71 to ensure the drawing rules have been applied consistently;
- WRP_155: This parcel is a combination of WRP_73, WRP_74 and WRP_75 to form a larger parcel.

In addition, checks were undertaken to consider if other parcels should be considered following the feedback from HBC).

New parcels identified(Section 6):

- WRP_157: This is a new parcel consisting of a developed area made up of existing general industrial units east of Southmoor Lane; and
- WRP_158: This is a new parcel south of Penner Road comprising the site currently occupied by SSE that was suggested by HBC for review and the HBC owned Norse South East Depot.
- Budds Farm Wastewater Treatment Works (WTW): This was considered at Stage 1 but wasn't progressed further in accordance with the methodology. As part of Stage 6, further checks were undertaken to determine if there is sufficient space with alternative configuration within the boundary of Budds Farm WTW.

Stage 6: New and Amended Parcels Review Outcomes

Assessments were undertaken by competent experts in environmental, planning, and constructability and engineering disciplines. An assessment of the risk of each parcel is provided below. As part of this stage SW engaged with HBC to present initial considerations to provide an opportunity for feedback.

Table 2: Stage 6 RAG ratings for new and amended parcels

Parcel	Area (ha)	Environment	Planning	Constructability and Engineering
WRP_153	7.4	Amber	Amber	Amber
WRP_154	8.0	Green	Green	Amber
WRP_155	16.4	Red	Amber	Amber
WRP_157	26.1	Green	Green	Amber
WRP_158	6.1	Green	Green	Amber
Budds Farm WTW	19.0	Red	Green	Red

Following the outcomes of Stage 5 and Stage 6, parcels that were scored as having either a red or amber across all three categories were not progressed further. **Four remaining parcels were identified as having low and moderate risk and progressed to the next review stage, these parcels were WRP_72, WRP_154, WRP_157 and WRP_158.**

These parcels were then considered on the basis of the RAG ratings and professional judgement to determine the best performing site for the WRP (see Section 6.1). **WRP_72 is considered to perform the best against the defined criteria. WRP_158, WRP_157 and WRP_154 are all considered to be equally suitable after WRP_72 as all have similar potential environmental and planning risks.**

Land Availability and Cost Review

Following the qualitative review of parcels (Stages 5 and 6), parcels that were identified as having a combined low and moderate risk in terms of the environmental, planning, constructability and engineering considerations,

as set out in Section 2.3, were progressed through this cost review. **This high-level analysis is intended to provide an extra 'lens' over the potential suitability of land parcels. A cost review** was therefore undertaken for the following parcels:

- WRP_72
- WRP_154
- WRP_157
- WRP_158

To inform the comparison between parcels at this early stage, several assumptions have been made to support the cost review given there is limited detail on the likely costs for each parcel (Section 7.2). The assumptions have been developed by the project’s Lands Team (Fisher German) and the engineering/construction team (Stantec/SW) based on professional experience and judgement, with the information known at the time (Q1 2023). **Given the high-level nature of the cost lens at this stage, it is possible that actual costs could vary once there is more information available on likely land acquisition and construction costs.**

The output of the cost review shows that WRP_72 has the lowest overall estimated cost when considering land purchase, tunnelling and enabling works based on the information available at this stage.

Table 3: Total estimated cost for construction (tunnel and enabling)

Parcel	Engineering Cost		Total Cost (tunnelling and enabling) (6 ha)
WRP_72	Tunnelling	£428,094,681.33	£431,195,831.13
	Enabling works	£3,101,149.80	
WRP_154	Tunnelling	£452,561,531.38	£456,599,621.38
	Enabling works	£4,038,090.00	
WRP_158	Tunnelling	£531,305,341.40	£535,631,005.40
	Enabling works	£4,038,090.00	
WRP_157	Tunnelling	£541,095,017.70	£545,133,107.70
	Enabling works	£4,038,090.00	

Table 4: Estimated land per hectare cost

Parcel	Size (ha)	Land (£/ha)
WRP_72	9.3	£2,120,493.33
WRP_157	26.1	£2,366,475.10
WRP_154	8.0	£3,113,125.00
WRP_158	6.1	£3,764,754.10

*

1 Introduction

1.1 Background

- 1.1.1 The Water Recycling Plant (WRP) is a key component of the Hampshire Water Transfer and Water Recycling Project (the Project). The site selection process for the project is intended to continue throughout the scheme development phase of the project. The initial stages of the site selection process identified a preferred site for the WRP known as WRP_72. Southern Water (SW) consulted on this preferred WRP site, and the process it went through to identify it, as part of the Summer 2022 non-statutory consultation for the Project. This enabled SW to seek initial views and feedback from consultees.
- 1.1.2 The methodology for the WRP site selection process already undertaken up to Stage 5 and 6 is summarised below. The full write up of the methodology is set out in Annex 5 of SW's Gate 2 submission:
- Stage 0 – Development of the site selection process and methodology including determination of a search envelope for the components of each solution that was being considered at the time;
 - Stage 1 – Identification of terrestrial (and where relevant marine) parcels based on initial physical requirements;
 - Stage 2a & Stage 2b – Sensitive receptor proximity appraisal, identification of major development and an appraisal of their compatibility with the process components for each solution that was being considered;
 - Stage 3 – Assessment against regional and local planning policies, **engineering criteria and proximity to additional receptors not considered at Stage 2a;**
 - Stage 4 – Spatial assessment of the process components to identify a list of configurations which consists of site and route.
- 1.1.3 The initial site selection process Stages 1-4 included a quantitative appraisal of the different WRP parcels through Stages 1 to 3, followed by a qualitative review at Stage 4.
- 1.1.4 At Stage 1, a total of 24 parcels were identified for the WRP. The **site selection process resulted in the selection of WRP_72 as the preferred site following Stage 4.** The 24 parcels are shown in Figure 1.1.

1.2 Purpose

- 1.2.1 This document reports on the process and outcomes of the next stage of continual review work (Stage 5 and 6) that has been undertaken to support the site selection for the WRP.
- 1.2.2 The purpose of the continual review process is to review and update the outcomes of the site selection work already undertaken by considering changes to the project requirements and any new information from engagement with stakeholders. The site selection work already undertaken, which is summarised in paragraph 1.1 of this report, was **reported in more detail in Annex 5 of SW's Gate 2 submission,** as part of the Regulators Alliance for Progressing Infrastructure Development (RAPID) regulatory funding framework, and **at the Summer 2022 public consultation for the Project.**
- 1.2.3 The continual review process ensures that the site selection for the WRP has appropriate regard to relevant changes in circumstance, including feedback from the Summer 2022 public consultation and ongoing engagement with HBC.
- 1.2.4 The continual review process for the WRP consists of two stages:

- Stage 5: Further qualitative review, building on the site selection work already undertaken at Stages 1-4, of the likely environmental, planning, constructability and engineering considerations identified on WRP parcels. All parcels previously identified in Stage 1 of the WRP site selection process were reviewed to ensure that the conclusions drawn in the initial stages of the site selection work remain up to date as the project progresses and are reflective of current site circumstances. This also incorporated any parcels that were identified after Stages 1-4, which were reported on at SW's Gate 2 submission, through a back-check exercise which tested varying size requirements as the technical requirements of the project evolved. Stage 5 sets a minimum parcel size which represents the smallest area in which the WRP could be accommodated. This allowed for a review of all parcels that could potentially be developed.
- Stage 6: This stage is the identification of any new or amended parcels that were then assessed using the Stage 4 criteria (which includes environmental, planning, constructability and engineering constraints).

1.2.5 As part of both stages of the continual review, engagement with particular stakeholders has been undertaken where, for example, alternative WRP parcels or alternative parcel configurations have been identified. This consisted of engagement with HBC in its role as both local authority and landowner (in respect of parts of WRP 71, WRP 73, WRP 74, WRP 75 and WRP 149) and with SSE (WRP_158) to understand the potential future use of its site. This is to help ensure that all reasonable alternatives are considered, and that SW continues to have regard to feedback as it progresses with scheme development. Further engagement and consultation with identified consultees on the site selection process will be undertaken as SW progresses through the DCO process.

1.3 Planning Policy Context

- 1.3.1 Pursuant to the Planning Act 2008 (the 2008 Act), the Secretary of State (SoS) must decide the application in accordance with any relevant NPS, and have regard to the relevant NPS, any local impact report, and any other matters considered both "important and relevant" to the decision.
- 1.3.2 The National Policy Statement for Water Resources Infrastructure (2023) (NPSWRI) is the relevant National Policy Statement that has effect. The main documents that may be considered relevant and important to the SoS's decision would also include:
- Policies from the adopted development plan and other relevant planning policy documents;
 - National Planning Policy Framework; and
 - Planning Practice Guidance.
- 1.3.3 Whilst the National Planning Policy Framework ('NPPF') does not contain specific policies for projects consented under the DCO regime, it can be an important and relevant consideration under the 2008 Act. This would be where there are no directly applicable NPS policies, or where there are no relevant and/or up to date Development Plan policies.
- 1.3.4 Paragraph 3.1.3 of the NPSWRI states notes that:
- "In considering any proposed development, and in particular, when weighing its adverse impacts against its benefits, the Examining Authority and the Secretary of State should take into account its potential:*
- *Benefits, including its contribution to meeting the need identified in a water company's water resources management plan, the facilitation of economic development including: job creation, reduction of financial disparities, housing and environmental improvement and any long-term or wider benefits*
 - *Adverse impacts, including any longer-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts."*

1.3.5 The preferred site, and the process undertaken to identify that site, has been considered against the relevant policies in the NPSWRI, noted in the Planning Considerations below.

Planning Considerations

1.3.6 The NPSWRI states the ‘applicant should comply with the legal obligations and policy set out in the National Policy Statement on the assessment of alternatives’, which includes:

- The Environmental Impact Assessment Regulations that require projects with significant environmental effects to include a description of the reasonable alternatives studied by the applicant and an indication of the main reasons for the option chosen, taking into account the significant effects of the project on the environment.
- Other specific legal obligations that require the consideration of alternatives, such as the Habitats Regulations¹ and Water Framework Directive Regulations².
- Specific policies in the NPSWRI that require the consideration of alternatives, such as the flood risk sequential test or the assessment of alternatives for development in a National Park, the Broads and Areas of Outstanding Natural Beauty.

1.3.7 The site selection process has therefore been prepared to comply with the above and ensure that the scheme development process has had appropriate regard to reasonable alternatives for the project.

1.3.8 In order to assess each of the potential sites for the WRP, an assessment of each site against the NPSWRI has been undertaken and reported as relevant. These considerations are then set out in Section 3 and 5 of this report under the following headings:

- Land use (including open space and socio economic);
- Biodiversity;
- Landscape;
- Historic environment; and
- Flood Risk.

1.3.9 Local Plan policies, including site allocations, ecological and landscape designations, have also been taken into account. Where any such policies are in conflict with the NPS, less weight has been afforded to them and the National Policy Statement prevails for purposes of decision making given the national significance of the infrastructure (paragraph 1.1.9 of the NPSWRI).

¹ Conservation of Habitats and Species Regulations 2017 (as amended)

² Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

1.4 Engineering and Construction Consideration

1.4.1 Stages 5 and 6 of this continual review has used the following assumptions to be able to provide a robust review of the engineering and construction consideration:

- The assessment assumes that the site will need to connect into Budds Farm WTW, Havant Thicket Reservoir and Otterbourne Water Supply Works (WSW).
- A preferred pipeline corridor was presented at the Summer 2022 public consultation on the Project. This sets out the preferred connections between Budds Farm WTW, the Havant Thicket Reservoir and Otterbourne WSW through the WRP. The Summer 2022 public consultation presented WRP_72 site as the central location for connections to the north east towards Havant Thicket Reservoir and to the west towards Otterbourne WSW. **This assessment assumes that any changes to the preferred pipeline corridor would only be the part of the pipeline into the WRP parcel and the rest of the preferred pipeline corridor would remain the same** (as set out at the Summer 2022 public consultation).
- The route west to Otterbourne WSW would connect into the corridor “section P” shown on the diagram, which is in the Purbrook area. (see Appendix A). **The High-Lift Pumping Station (HLPS) would preferably be co-located with the WRP, and the exact location would be determined in accordance with the scheme development methodology.**
- The Pipelines and tunnels will not change in diameter.
- Programme
 - An outline programme for delivery of the project has been developed, based on the best engineering solution pipeline route consulted on in the summer 2022 public consultation. The estimated impact of individual site characteristics, including the tunnel routes, are described as a likely increase or decrease to that baseline programme.
 - Where the assessment identifies sections of pipeline route that would need to be constructed by tunnelling, it would be a 24-hour activity as the operation of the Tunnel Boring Machine (TBM) would generally need to be continuous to avoid technical difficulties for the TBM to stop and then start up again.
 - Where the assessment identifies sections of pipeline route that would need to be constructed by tunnelling to connect to the best engineering pipeline route consulted on in the summer 2022 public consultation, it is assumed that this would be one continuous tunnel using a single TBM.

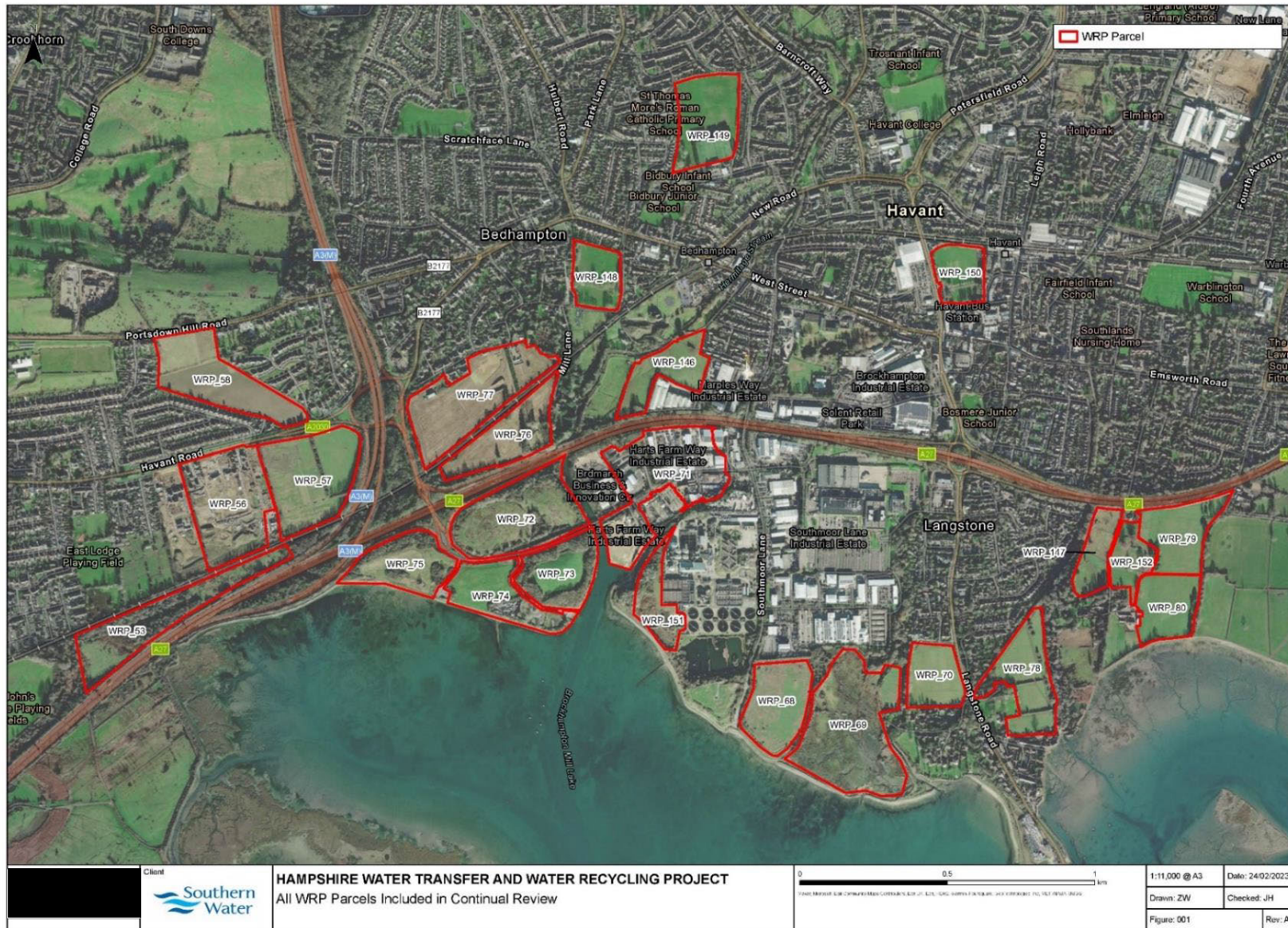


Figure 1.1: WRP Parcels Included in the Continual Review Process

2 Stage 5: Further Qualitative Review of Parcels Methodology

2.1 Introduction

2.1.1 The continual review process considered all parcels identified by the WRP site selection process again to check that the conclusions drawn in the initial stages of WRP site selection work remain valid and up to date as the project progresses.

2.2 Step 1: Initial Sift of Parcels

2.2.1 The first step of the continual review was undertaken to evaluate all the parcels that were identified in the WRP site selection. Step 1 is set out in the following sections. All WRP parcels (as identified at Stage 1) were reviewed against the following criteria. A potentially suitable WRP parcel must:

- Be at least 3.2 hectares (ha);
- Not be allocated for housing in a relevant local plan, have planning permission for housing, or are under construction for housing;
- Not be on land allocated (in a relevant local plan) as open space³;
- Not be within a national or international designated ecological site ;
- Not be within a national landscape designation; and
- Not be within an international or national heritage designation.

2.2.2 Parcels were not progressed if they did not meet one of the above criteria as they were considered to not be suitable. Further justification for the selection of these criteria is set out below.

Minimum Parcel Size

2.2.3 Stage 1 of the WRP site selection process defines the minimum parcel size. Throughout the development of the project, the minimum size requirements and understanding of the requirements for the WRP has been kept under review, which has resulted in revisions to the minimum area needed to accommodate the WRP. The ongoing site selection process has also informed the minimum size for the WRP site. Table 2.1 sets out an overview of the developments in the Stage 1 minimum parcel size required for the WRP.

Table 2.1. Minimum parcel size timeline

Project Milestone	Date	Minimum Parcel Size	Overview
Stage as reported in SW's Gate 1 Submission	Sept 2020	3.2 ha	For a 61 MI/d WRP, a minimum of 3.2 ha permanent land take is required for the development of above and below ground assets such as buildings, process units and kiosks. Additional permanent land required for landscaping and mitigation, and additional

³ Footnote 154 of the NPSWRI states “Open space is defined in the Town and Country Planning Act 1990 as land laid out as a public garden, or used for the purposes of public recreation, or land which is a disused burial ground. However, in applying the policies in this section, open space should be taken to mean all open space of public value, including not just land, but also areas of water (such as rivers, canals, lakes and reservoirs) which offer important opportunities for sport and recreation and can act as a visual amenity. “ Land that is not designated as open space may also fall within this definition and therefore is considered further as part of the qualitative assessment undertaken at Stages 5 and 6.

Project Milestone	Date	Minimum Parcel Size	Overview
			temporary land for construction have not been included in this minimum parcel size.
Stage 1 as reported in SW's Gate 2 Submission	December 2021	4.0 ha	For a 61 MI/d WRP, a minimum of 4.0 ha permanent land take is required. Additional permanent land required for landscaping and mitigation, and additional temporary land for construction have not been included in this minimum parcel size.
Site search criteria: Summer 2022 Public Consultation	July 2022	6.0 ha	For a 15 MI/d WRP with potential to expand to 60 MI/d, a minimum of 6.0 ha permanent land take is required. This includes land required for temporary construction areas, tunnel shafts for connecting pipelines, and the high lift pumping station (HLPS).
Stage 5: WRP Site Selection Continual Review	November 2022 - ongoing	3.2 ha	To allow for consideration of all parcels that have been considered at Stage 1, the continual review reverted back to the smallest size that was considered for the WRP which is 3.2 ha. Additional permanent land required for landscaping and mitigation, and additional temporary land for construction have not been included in this minimum parcel size.

2.2.4 The minimum parcel size of 3.2 ha only provides sufficient space for the WRP and does not include space for temporary construction compounds for construction of the WRP, tunnel shafts to connect to Havant Thicket Reservoir and Otterbourne WSW, or the HLPS. Therefore, additional land would likely be required during the construction phase if a smaller parcel were selected. The minimum parcel size increased up to 6 ha as our understanding of the scheme developed in line with SW's preference to co-locate all construction and operational components related to the WRP and the HLPS on a single site to minimise land take and local impacts. However, to ensure all potentially suitable parcels that have been considered as part of the earlier Stages 1-4 were reviewed, the original minimum parcel size was reverted to in the continual review. Additional land would therefore be required during both the construction and operational phases if a smaller parcel were selected for just the WRP.

Land Being Developed for Housing

2.2.5 Since parcels were identified at Stage 1, planning permission for residential developments has been granted on a number of those parcels. Many of these are currently being built out, meaning the parcels no longer meet the Stage 1 parcel requirements, which set out that parcels should not be located on private residences within developed residential areas. As such, these parcels were not considered further in the continual review (Table 3.1).

Existing Open Space

2.2.6 Paragraph 4.10.10. of the NPSWRI notes "Existing open space, sports and recreational buildings and land should not be developed unless the land is no longer needed or the loss would be replaced by equivalent or better provision in terms of quantity and quality in a suitable location."

2.2.7 There are a number of parcels that are not within existing open space or sport and recreational buildings and land. In accordance with the policy in the NPSWRI, sites used for open space or sport and recreational should be avoided, unless such it can be determined that they are no longer needed or can be re-provided.

Parcels within Sensitive Environmental Designations

- 2.2.8 A number of parcels identified at Stage 1 of the WRP site selection were located within an international or national environmental designations. The NPSWRI provides the tests that the Secretary of State should take into account. These include:
- Paragraph 4.3.12 of the NPSWRI, **if significant harm to biodiversity resulting from the development cannot be avoided then development consent may be refused**, and the highest level of biodiversity protection is afforded to sites identified through international conventions (Paragraph 4.3.13);
 - Paragraph 4.8.22 of the NPSWRI, harmful impact on designated heritage asset should be weighed against the public benefit of development, and
 - Paragraph 4.9.11 of the NPSWRI, **“Great weight should be given to conservation and enhancement of landscape and scenic beauty in nationally designated landscapes. The Secretary of State should refuse development consent in these areas except in exceptional circumstances”** (Paragraph 4.9.12).
- 2.2.9 Therefore, parcels that had the potential conflict with these NPSWRI policies were not progressed.

2.3 Step 2: Further Qualitative Review of Parcels

- 2.3.1 A further qualitative review of the environmental, planning, constructability and engineering constraints was undertaken on the remaining parcels to ensure that the previous outcomes of the initial WRP site selection work remain valid and up to date as the project progresses.

Environmental and Planning Review

- 2.3.2 The environmental and planning review was a qualitative desk-based assessment undertaken to complement the approach and reinforce the outcomes of the assessment in Stage 2 and 3 of the WRP site selection process. **This refined the long list of identified parcels using a quantitative methodology that assigned a score to parcels depending on their location relative to various receptors.** As stated above at Paragraph 1.3.8, for planning, only certain NPSWRI policies most relevant to site selection were included within the review.
- 2.3.3 The qualitative review considered the following topics identified in the NPSWRI:
- Air quality;
 - **Biodiversity and nature conservation** (terrestrial and marine);
 - Climate Change (Carbon Emissions);
 - Dust, odour and artificial light;
 - **Flood risk;**
 - Historic environment;
 - **Landscape and visual;**
 - Land use;
 - Noise and vibration;
 - Resource and **waste management;**
 - Socio-economics;
 - Traffic and transport; and
 - **Water quality and resources.**
- 2.3.4 As the potential WRP parcels included in this stage have already been reviewed through Stages 2, 3 and 4 of the WRP site selection process, **the constraints of each parcel were already known. The purpose of this review was to provide a more detailed understanding of the potential suitability of each parcel and identify the risks and constraints in policy terms and have regard to any new information** to

check the conclusions remain up to date. Therefore, not all topics were reviewed, only topics where a more detailed understanding of the constraint was required to inform the assessment of the parcel.

2.3.5 The environmental and planning review was undertaken by competent SMEs on the project who provided a qualitative assessment as follows:

- Identification of receptors, their sensitivity and potential impacts during the construction and operation of the WRP; and
- Review of the environmental and planning risk of the parcel, and the degree to which such risks could reasonably be avoided, reduced or mitigated, or could be offset based on the available information.

2.3.6 The environmental and planning qualitative review consisted of a desk-based review and did not involve any site investigations at each parcel.

2.3.7 The outcomes of the qualitative review for each topic were assigned environmental and planning risk ratings. Further details of the risk rating process are provided in Tables 2.2 - 2.4 below.

2.3.8 The environmental and planning review and the assigning of the risk rating was informed by, and had regard to the following:

- Policy tests set out in the NPSWRI;
- National Planning Policy Framework (2021) (NPPF);
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017; and
- The Conservation of Habitats and Species Regulations 2017 (as amended) (Habitat Regulations).

Construction and Engineering Review

2.3.9 The construction and engineering review comprised of a desk-based review and site visits to all of the parcels included within the qualitative review at Step 2. The evaluation was undertaken by competent construction and engineering SMEs and the review considered the following for each parcel:

- Access;
- Available developable area;
- Enabling works required;
- Existing known services at the parcel;
- Ground conditions; and
- Programme impact (e.g. from additional tunnel lengths) of delivering the WRP at the parcel.

2.3.10 The construction and engineering review is based on the information available for each of the above criteria at this early stage of project development in order to inform an assessment of likely risks for each parcel. As the project progresses, the information on construction and engineering requirements will develop as more information becomes available.

2.3.11 Following the review of the WRP parcels against the above considerations, a construction and engineering risk rating was applied. This is provided in the tables below.

Risk Rating

2.3.12 Following the completion of the environmental and planning review and the construction and engineering review, three risk ratings were applied to each parcel to represent the likely risk of the parcel in environmental, planning, and constructability and engineering terms.

2.3.13 The risk rating took the form of a red, amber and green (RAG) rating following the scoring criteria set out in Tables 2.2-2.4 below for environment, planning and construction and engineering criteria.

Table 2.2: Risk rating for the environmental review

RAG Rating	Definition
High Risk	Potential for significant adverse impact that is unlikely to be capable of being mitigated to an acceptable level .
Moderate Risk	Potential for moderate adverse impact that could likely be reduced, but not avoided , through the use of mitigation.
Low Risk	No potential adverse impact likely or minor impact likely but capable of being mitigated to an acceptable level.

Table 2.3: Risk rating for the planning review

RAG Rating	Definition
High Risk	Potential for significant conflict with a policy of the NPSWRI which directs the Secretary of State to refuse development consent.
Moderate Risk	Potential for conflict with one or more policies of the NPSWRI and would require a balanced judgment against the benefits of the project.
Low Risk	No potential for a significant conflict with the policies of the NPSWRI.

Table 2.4: Risk rating for the construction/engineering review

RAG Rating	Definition
Construction/Engineering High Risk	Potential for a significant adverse impact unlikely to be capable of a suitable design resolution and likely to lead to a significant delay to the project.
Construction/Engineering Moderate Risk	Potential for a moderate adverse impact that could likely be reduced through mitigation but with potential residual delay.
Construction/Engineering Low Risk	No potential adverse impact identified or a minor impact is identified that is likely to be capable of being mitigated to an acceptable level.

3 Outcomes of Stage 5 Continual Review: Qualitative Review of Parcels

3.1 Initial Sift of Parcels

3.1.1 A total of 24 WRP parcels were identified in the initial WRP site selection process. In accordance with Step 1 of Stage 5, the 24 parcels were reviewed against the initial sift methodology as set out in Section 2.2 (these include parcel size along with environmental and planning constraints). Table 3.1 below sets out all the WRP parcels and highlights the parcels that were not progressed to Stage 5 on account of their size or constraints (highlighted brown).

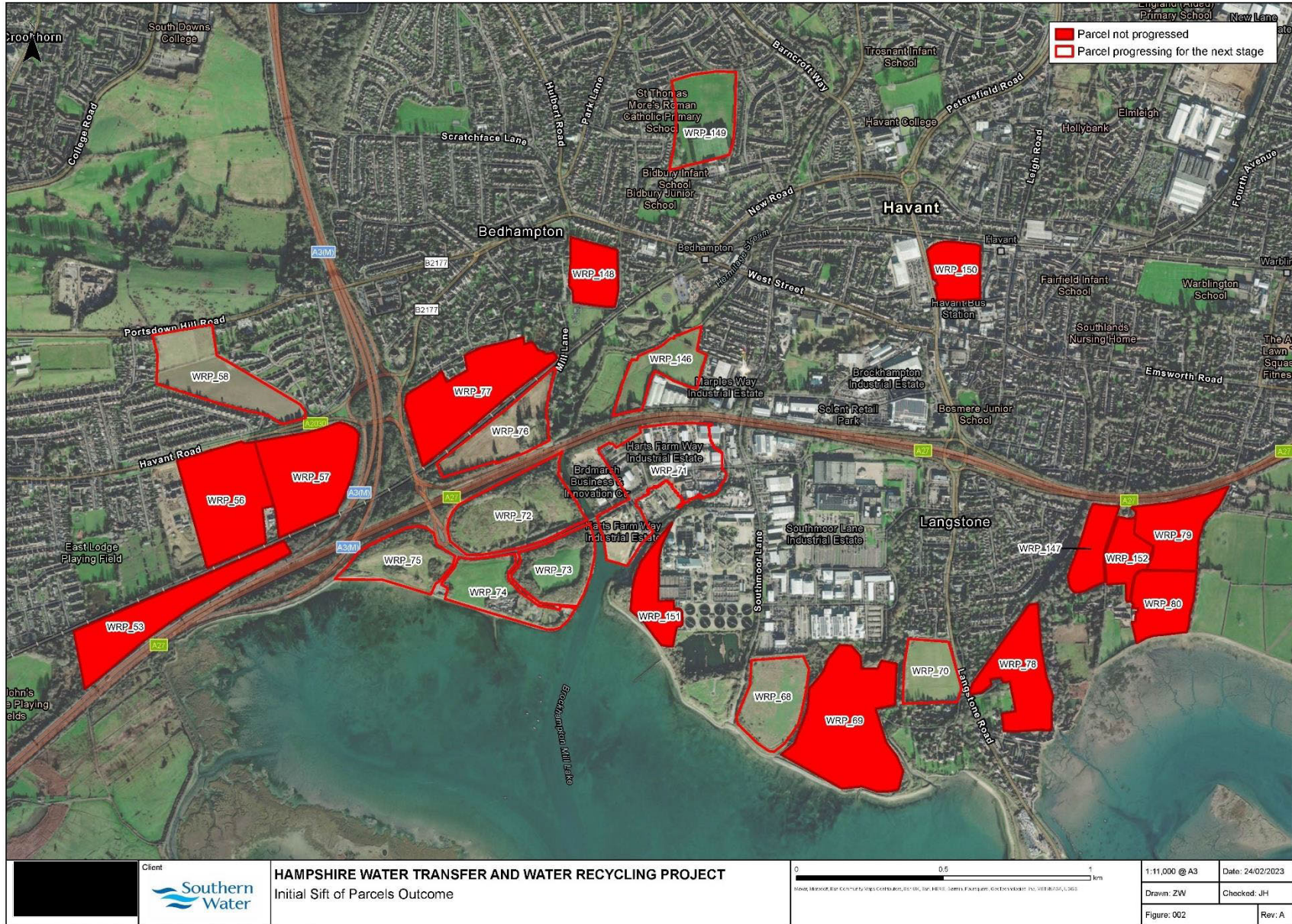
Table 3.1: Initial sift of Parcels outcome

Parcel	Size (ha)	Constraints
WRP_53	7.9	Within the Chichester and Langstone Harbour SPA and Ramsar and the Langstone Harbour SSSI
WRP_56	9.3	Currently being developed for housing
WRP_57	8.8	Currently being developed for housing
WRP_58	7.8	No constraints in line with the methodology in Section 2.2
WRP_68	5.6	No constraints in line with the methodology in Section 2.2
WRP_69	12.6	Within the Chichester and Langstone Harbour SPA and Ramsar and the Langstone Harbour SSSI
WRP_70	3.7	No constraints in line with the methodology in Section 2.2
WRP_71	10.6	No constraints in line with the methodology in Section 2.2
WRP_72	9.3	No constraints in line with the methodology in Section 2.2
WRP_73	5.3	No constraints in line with the methodology in Section 2.2
WRP_74	5.4	No constraints in line with the methodology in Section 2.2
WRP_75	5.3	No constraints in line with the methodology in Section 2.2
WRP_76	5.5	No constraints in line with the methodology in Section 2.2
WRP_77	9.5	Currently being developed for housing
WRP_78	6.1	Within the Chichester Harbour AONB
WRP_79	5.1	Within the Chichester Harbour AONB
WRP_80	4.3	Within the Chichester Harbour AONB
WRP_146	4.2	No constraints in line with the methodology in Section 2.2
WRP_147	2.9	Within the Chichester Harbour AONB and less than 3.2 ha
WRP_148	3.3	Within local green space designated by HBC
WRP_149	6.1	No constraints in line with the methodology in Section 2.2
WRP_150	6.1	Within local green space designated by HBC
WRP_151	3.1	Less than 3.2 ha
WRP_152	2.6	Within the Chichester Harbour AONB

3.1.2 The parcels had been previously reviewed at Stage 4 of the WRP site selection process which was reported within SW's Gate 2 submission, however, as part of the continual review process further qualitative assessments were undertaken to ensure the outcomes remained robust and valid. This Section provides a summary of the outcomes of the 11 Parcels that progressed past Step 1 of Stage 5 and have undergone an additional assessment as part of Step 2 of the Stage 5 continual review process.

3.1.3 The following sections present the environmental, planning, constructability and engineering considerations and outcomes.

Figure 3.1: Initial Sift of Parcels Outcome



3.2 WRP_58

Parcel Location and Description

- 3.2.1 WRP_58 is shown on Figure 3.2 below and is approximately 7.8ha. The Parcel comprises agricultural land and grassland between Havant Road to the south and Portsdown Hill Road to the north. The Parcel is bordered to the east and west by residential areas.



Figure 3.2: Location of WRP_58

Environmental Considerations

- 3.2.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the environmental assessment considered the following topics:

- Air Quality;
- Noise and Vibration;
- Landscape and Visual Impact, and
- Biodiversity.

- 3.2.3 The Parcel is located wholly within the 'Fields off Havant Road' Site of Importance for Nature Conservation (SINC). The development of the WRP within this parcel would result in a negative impact through its direct loss. The NPSWRI notes that *'The Secretary of State should give due consideration to such regional or local designations to ensure that these sites are safeguarded. However, given the need for new infrastructure, these designations should not be used in themselves to refuse development consent where harm cannot be avoided (through locating on an alternative site with less harmful impacts) or adequately mitigated. In these circumstances, there should be compensatory measures.'* (Paragraph 4.3.17 of the NPSWRI).

- 3.2.4 The steeply sloping topography and aspect of the parcel, which faces towards the Chichester Harbour AONB (2.4km at its closest point) means that the more northern part of the parcel would be more exposed and therefore more sensitive to change in terms of its visibility. It may be possible to utilise site layout to sensitively design buildings/plant away from potential setting impacts to the AONB. However, it is likely a WRP at this location would compromise the purposes of the AONB (Paragraph 4.9.14 of the NPSWRI).
- 3.2.5 The Parcel is approximately 550m south of the Chichester and Langstone Harbours SPA and Ramsar and the Solent Maritime SAC. As stated in the NPSWRI (Paragraph 4.3.13), the highest level of biodiversity protection is afforded to these sites. Due to the proximity to these designations, a Habitats Regulation Assessment (HRA) would be required. The parcel is also within 500m to Langstone Harbour SSSI, designated for its saltmarshes and mud flats, which supports internationally important bird populations. The Solent Waders and Brent Goose Strategy⁴ identifies the parcel as a 'Candidate Site'⁵ (site H03) for the internationally important Brent Goose and Solent Wader birds. It is therefore considered functionally linked habitat to the SPA. Further assessment would be required to understand the impacts on these sites.
- 3.2.6 The Parcel also has the potential to support the following species: breeding birds, wintering birds, dormouse, badger; bats and reptiles. Therefore, there is potential for development of the WRP within this Parcel to negatively impact protected species. Further protected species surveys would be required to determine the potential for significant adverse impacts.
- 3.2.7 There are several residential properties in very close proximity to the parcel (less than 5m away). Micro sitting would need to be undertaken to ensure noisy activities and operational buildings are sited away from sensitive receptors. Whilst many of the potential impacts could be reduced through standard control measures, such as site design and construction layout and through management plans to control potential construction impacts, such as dust and emissions and noise and vibration, there are a number of environmental impacts that would need to be satisfactorily overcome for the Parcel to be considered suitable.

Planning Considerations

- 3.2.8 The main planning considerations for WRP_58 are:

Land Use

- 3.2.9 **Existing use:** The parcel is undeveloped and sits between two groups of low density residential properties on the eastern and western boundaries. It does not have any specific policy designations in the HBC Local Plan. The Strategic Housing Land Availability Assessment, Appendix 3 – map of sites (for housing allocations) indicates the parcel was not considered suitable for development.
- 3.2.10 **Agricultural land:** The parcel is classified as Grade 2: Very good quality agricultural land. This is classified as Best and Most Versatile (BMV) Agricultural Land. The NPSWRI (paragraph 4.10.14) notes that 'applicants should use poorer quality land (grades 3b, 4 and 5) where possible to minimise impacts on soil quality'. Given that there are other sites available that would not impact on BMV, the loss of this area would likely conflict with Paragraph 4.10.14 of the NPSWRI.

Biodiversity

- 3.2.11 There are no national or international designations within the parcel. The parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders'. Policy

⁴ published in 2020 by the Solent Waders and Brent Geese Strategy Steering Group

⁵ For the avoidance of doubt, this reference to 'Candidate Site' is not in reference to a Candidate SPA that were submitted to the European Commission before the end of the Transition Period following the UK's exit from the EU, but not yet formally designated. The reference relates to the term used in the Solent Waders and Brent Goose Strategy and is one of the four classifications of sites.

DM23 would require an assessment to be undertaken that demonstrates significant harm to biodiversity could be avoided.

Landscape and Visual

- 3.2.12 The parcel sits along the Portsdown Hill ridgeline, is an open field and has views towards Chichester Harbour AONB. A WRP in this location could impact views and the setting of the Chichester Harbour AONB and should be considered against policy relating to development outside nationally designated areas that might be affected. In accordance with paragraph 4.9.14 of the NPSWRI, development should aim to avoid compromising the purpose of the designation of the AONB.
- 3.2.13 In terms of local policy, the parcel is designated as an undeveloped gap by Policy AL2 of the HBC Local Plan and is considered to have local landscape value. Policy AL2 seeks to prevent development that would lead to coalescence of settlements and development must meet an overriding public need that it cannot be accommodated elsewhere. The policy notes the undeveloped gaps form an important part of the Borough's special environment, as they separate larger settlements from one another creating distinctive identities. The NPSWRI (paragraph 4.9.10) seeks to ensure that *'proposed developments need to be designed and located carefully, taking account of the potential impact on the landscape... the aim should be to avoid or minimise harm to the landscape, providing appropriate mitigation or enhancement measures where possible'*.
- 3.2.14 The NPSWRI (paragraphs 4.9.15 and 4.9.16) notes local landscape impacts should not be a reason for refusing the proposed development, however the development should avoid adverse effects on landscape or minimise harm by reasonable mitigation. A WRP at this location would be incongruous with the local character of the area and would be highly visible and would likely lead to significant landscape and visual impacts, including potential harm to the AONB. These impacts would be difficult to fully mitigate through design due to the sloping nature of the parcel and therefore the WRP at this parcel would likely not be consistent with the NPSWRI.
- 3.2.15 Paragraph 4.9.17 of the NPS requires the Secretary of State to *"judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the development"*. Given the location of the parcel in proximity to existing residential properties to the east and west it is likely that visual impacts would weigh against the overall benefits of the project.

Constructability and Engineering Considerations

- 3.2.16 The parcel is long and narrow with a steep gradient that could make construction challenging, with a level difference across the parcel of approximately 40 m over the length of approximately 530 m. Level working platforms would need to be formed by carrying out an extensive cut and fill exercise which would reduce the usable area of the parcel.
- 3.2.17 To construct the levelled platforms, it is likely that they will have a 10 m difference between each platform, which would need either a battered slope or a retaining structure at the level changes and a suitably graded access road between each level which itself would consume and constrain space. The reduction in usable area would be dependent on how each levelled platform was retained and accessed. Further work would be required to determine if all necessary plant and equipment could then be accommodated.
- 3.2.18 The levelled platforms would likely be a less efficient site layout and so would need a more complex site layout and engineering solution. This would likely lead to additional operational, maintenance and costs over the lifetime of the project.
- 3.2.19 Additional buffer areas or acoustic sheds may be needed to reduce significant impacts to nearby residents from construction works, including 24-hour tunnelling activities.

3.2.20 The known services within the parcel are:

- 400mm High Pressure gas pipe runs up the western boundary.
- 24" Portsmouth Water raw waste pipeline cuts across the northern section.

3.2.21 These services would either reduce the area available or require diversion. It is likely that diversion of utilities would be challenging as this is the only open land in the nearby area.

3.2.22 Access to the parcel would either be from Portsdown Hill Road or Havant Road.

3.2.23 All earthworks including levelling and service diversions would need to be complete before construction commences. It is likely that earthworks could add approximately 12 to 18 months to the programme.

3.2.24 Due to the distance of the parcel to Budds Farm WTW, a tunnel would be required to receive treated wastewater and return reject water. This tunnel would be approximately 1.8 km, which would be delivered using the same Tunnel Boring Machine (TBM) and have a 6 to 8-month impact on programme due to the additional tunnelling works. The tunnel lengths to Havant Thicket Reservoir would be reduced but the tunnel length towards Otterbourne WSW would increase, so there would likely be no overall impact on the schedule.

3.3 WRP_68

Parcel Location and Description

3.3.1 WRP_68 is shown on Figure 3.3 and is approximately 5.6 ha. The parcel is located within open grass and scrubland and is bordered to the north, east and west by trees and hedgerows. Southmoor Lane to the east of the parcel would provide access to the parcel. To the south of the parcel is Langstone Harbour and the Solent Way walking route.



Figure 3.3: Location of WRP_68

Environmental Considerations

- 3.3.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the following environmental topics were considered:
- Biodiversity;
 - Marine Biodiversity;
 - Hydrology and Flood Risk; and
 - Soil Quality and Agricultural Land.
- 3.3.3 The parcel is within approximately 20 m of the Chichester and Langstone Harbours Ramsar, SPA and Solent Maritime SAC. As stated in the NPSWRI (Paragraph 4.3.13), the highest level of biodiversity protection is afforded to these sites and harm to the integrity of the designation must be avoided. The Solent Waders and Brent Goose Strategy⁶ identifies the site as a Secondary Support Area for the internationally important Brent Goose and Solent Wader bird and is therefore considered functionally linked habitat to Chichester and Langstone Harbours SPA. A WRP in this location has the potential to harm the integrity of the Chichester and Langstone Harbours SPA and Ramsar and Solent Maritime SAC, and therefore a HRA would be required.
- 3.3.4 The parcel is within approximately 20m of the Langstone Harbour SSSI, designated for its saltmarshes and mud flats, which supports internationally important bird populations. Due to the proximity of the parcel to the SSSI, there is potential for the WRP to cause disturbance to these birds, during construction and operation. Paragraph 4.3.15 of the NPSWRI states "*Where a proposed development is likely to have a significant adverse effect on an SSSI (either individually or in combination with other developments), development consent should not normally be granted*". Further assessment would be required to understand the impacts on the SSSI.
- 3.3.5 An ecological walkover of the parcel was undertaken during April 2021 to inform a Preliminary Ecological Appraisal (PEA) for the earlier stages of the site selection. Habitats of Principal Importance (HPI) were recorded on the parcel. These are defined as coastal floodplain grazing marsh and coastal salt marsh. The parcel is unimproved permanent pasture used for low intensity grazing, which is attractive to nesting birds. In the winter surface flooding in parts of the parcel attract wintering wildfowl. Therefore, the development of the WRP has the potential to negatively impact HPI, through direct loss. Where possible, impacts on these habitats should be avoided, unless the benefits of the development clearly outweigh the harm (Paragraph 4.3.19 of the NPSWRI).
- 3.3.6 The southern end of the parcel includes the 'Southmoor - Big Field (south edge)' SINC. The 'Southmoor Reserve' SINC is located 80m east of the parcel and is connected to the parcel through scrub. The development of the WRP within this parcel would result in a negative impact to Southmoor - Big Field (south edge) SINC through its direct loss. Habitat within the parcel should be retained where possible. If this is not possible, it is recommended that habitat replacement planting should be included within the design.
- 3.3.7 The parcel has not had any protected species baseline surveys undertaken. However, it has potential to support the following species: breeding birds, wintering birds, dormouse, badger; bats and reptiles. Protected species surveys would be required to determine the potential for significant adverse impacts.

⁶ published in 2020 by the Solent Waders and Brent Geese Strategy Steering Group

- 3.3.8 Part of the parcel is located within Flood Zones 2 and 3. There is a risk that when flooding occurs this could facilitate a pathway for impact to the marine environment during construction and/or operation.
- 3.3.9 The sea wall has been the subject of damage resulting in parts of the parcel being underwater at high tide at present. The sea wall's failing has resulted in what used to be coastal grazing marshland returning to saltmarsh which provides breeding and feeding sites for wading birds. As well as its biodiversity its transformation to saltmarsh is enhancing the carbon sequestration potential of the area.

Planning Considerations

The main planning considerations for WRP_68 are:

Land Use

- 3.3.10 **Existing use:** The parcel forms part of a local ecological habitat called Southmoor Nature Reserve, which is open grassland and is bordered to the north, east and west by trees and hedgerows. The parcel is 20m from Langstone Harbour SSSI and there are industrial buildings to the north (outside the parcel).

Biodiversity

- 3.3.11 There are no national or international designations on the parcel, however it is located approximately 20m from the Solent Maritime SAC, the Chichester and Langstone Harbour SPA and Ramsar and the Langstone Harbour SSSI. Development of the WRP at this parcel would have the potential to disturb important bird populations which are qualifying features for these sites. Where significant adverse effects are identified this would be in conflict with Paragraph 4.3.15 of the NPSWRI and consent should not normally be granted. Paragraph 4.3.13 goes on to state that Habitats sites (Ramsar, SPA and SAC) have the highest level of protection and harm to their integrity should be avoided.
- 3.3.12 The loss of the SINC would be considered in the context of the NPSWRI, which notes that local designations have a fundamental role to play in meeting overall national biodiversity targets. Paragraph 4.3.17 notes that "*The Secretary of State should give due consideration to such regional or local designations to ensure that these sites are safeguarded. However, given the need for new infrastructure, these designations should not be used in themselves to refuse development consent where harm cannot be avoided (through locating on an alternative site with less.*"
- 3.3.13 The parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders'. Policy DM23 would require an assessment to be undertaken that demonstrates significant harm to biodiversity could be avoided.

Landscape and Visual

- 3.3.14 The parcel is located outside of the National Park and close to but not within the Chichester Harbour AONB. Paragraph 4.9.14 of the NPSWRI notes that development should avoid compromising the purpose of the designation and be designed sensitively.
- 3.3.15 There is a Rights of Way along the southern boundary of the parcel.

Flood Risk

- 3.3.16 Large portions of the parcel are within Flood Zone 2 and 3, and as such the sequential test would be required as set out in the NPSWRI and the NPPF. Annex 3 of the NPPF classifies sewage treatment, transmission and water transfer infrastructure as either less vulnerable or water compatible, meaning that an exception test would be required to demonstrate that the development will be safe and not increase flood risk elsewhere.

Constructability and Engineering Considerations

- 3.3.17 The parcel is within Flood Zone 2 and 3 and is subject to flooding during high tide. It may therefore be necessary to increase site levels by approximately 1m across the parcel, and up to 2m at one southern corner. A large quantity of imported material would be required, and this would impact the programme by approximately 10 to 12 months.
- 3.3.18 Projected sea level rise due to climate change and its effect on tidal flooding events is identifying a significant increased flood risk within this parcel and the surrounding area. Raising the levels of the parcel could help to mitigate the potential flood risk impacts but could transfer flood risk to other areas, potentially residential. Further consideration would be needed to understand the risk and whether it is capable of mitigation. See Appendix B for tidal flood risk maps.
- 3.3.19 Existing flood defences, which include a footpath, are in poor condition; some remedial and improvement works are likely to be needed. There is likely to be high ground water, which would likely mean that complex dewatering could be required, anti-flotation measures and tanking/waterproofing undertaken. If the footpath needs to be retained, part of the developable area would be lost to that and to suitable screening along north and south boundaries.
- 3.3.20 Subject to confirmation of plant layout, there is likely to be sufficient room for the WRP, HLPS and tunnelling to be constructed in parallel.
- 3.3.21 Services crossing the northern part of the parcel are:
- 400mm High Pressure gas pipe; and
 - 2no. 450mm Portsmouth Water pipes.
- 3.3.22 Services would need to be diverted. If the services are not diverted, 20% of the parcel could only be used for ancillary uses such as parking, which along with space lost to footpath and screening would make the parcel less suitable considering the project requirements.
- 3.3.23 Ground works including any ground raising and flood defence would likely need to take place prior to construction works beginning, prolonging the programme.
- 3.3.24 Access to the parcel would need to be via Southmoor Lane with a new access proposed.
- 3.3.25 This is one of the most easterly parcels considered. An additional 1km in tunnel length (over the best engineering solution pipeline route from the Summer 2022 public consultation) would be needed for both the pipelines to Havant Thicket Reservoir and towards Otterbourne WSW, which would have an impact on programme of approximately 4 to 6 months with the same Tunnel Boring Machine (TBM) used.
- 3.3.26 A shaft off one of the tunnels could be located on Budds Farm WTW so that the pipelines transferring treated wastewater to the WRP and reject water back to the Long Sea Outfall (LSO) could be contained within one of the tunnels. This would remove the need for horizontal direction drilling these pipelines between Budds Farm WTW and the WRP site, as is required with some of the other parcels being considered.

3.4 WRP_70

Parcel Location and Description

- 3.4.1 WRP_70 is shown on Figure 3.4 below and is approximately 3.7 ha. The parcel is located within open grassland and is bordered to the north and south by residential properties, to the east by Langstone Road and to the west by a dense line of trees. The parcel is a large meadow and forms an open gap on the edge of the residential suburbs of Portsmouth and is part of a chain of open spaces along the northern edge of Langstone Harbour.



Figure 3.4: Location of WRP_70

Environmental Considerations

3.4.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the following environmental topics were considered:

- Air Quality;
- Noise and Vibration;
- Landscape and Visual; and
- Biodiversity.

3.4.3 The parcel is directly bordered to the south and north by residential properties. Background noise levels in the area are likely to be moderate, meaning that construction noise is less likely to lead to significant changes to background noise levels. However, there are several residential properties in very close proximity to the parcel (at least one building directly bordering the parcel). Additional buffer areas or acoustic sheds may be needed to reduce significant impacts to nearby residents from construction and operational works, including 24 hour tunnelling activities for the TBM. The required 24 hour construction working hours could have significant impacts on the nearby residents.

3.4.4 Whilst many of the potential impacts could be reduced through design or standard control measures contained in a management plan that would control potential construction impacts, such as dust and emissions and noise and vibration, there are a number of environmental impacts that would need to be satisfactorily overcome for the parcel to be considered suitable.

3.4.5 The parcel is within close proximity (20m) to Langstone Meadows to the east within the Chichester Harbour AONB. This landscape should be treated with the highest sensitivity due to its statutory status. There is the potential for the proposed WRP to affect the setting of the AONB. Impacts could be reduced by siting the WRP in the northern part of the parcel, on the western side, close to

the existing urban edge, as is recommended at paragraph 4.9.14 of the NPSWRI, but there would still be likely significant residual impacts.

- 3.4.6 The parcel is within 90 m of the Chichester and Langstone Harbours Ramsar, SPA and 300 m to the Solent Maritime SAC. As stated in the NPSWRI (Paragraph 4.3.13), the highest level of biodiversity protection is afforded to these sites. The Solent Waders and Brent Goose Strategy⁷ identifies the site as a Secondary Support Area for the internationally important Brent Goose and Solent Wader bird and is therefore considered functionally linked habitat to Chichester and Langstone Harbours SPA. A WRP in this location has the potential to harm the integrity of the Chichester and Langstone Harbours SPA and Ramsar and Solent Maritime SAC, and therefore a HRA would be required.
- 3.4.7 The parcel is within 90m of the Langstone Harbour SSSI, designated for its saltmarshes and mud flats, which supports internationally important bird populations. There is potential for the proposed WRP to cause disturbance to these birds during construction and operation. Further assessment would be required to understand the impacts on the SSSI and accordance with Paragraph 4.3.15 NPSWRI.
- 3.4.8 An ecological walkover of the parcel was undertaken during April 2021 to inform a PEA for the early stages of the WRP site selection. Coastal floodplain grazing marsh Habitat of Principal Importance (HPI) was recorded on the parcel, therefore, the development of the WRP has the potential to negatively impact HPI, through direct loss. Where possible, these habitats should be avoided, unless the benefits of the development clearly outweigh the harm (Paragraph 4.3.19 of the NPSWRI).
- 3.4.9 The parcel has potential to support the following species: breeding birds, wintering birds, dormouse, badger; bats and reptiles. Therefore, there is potential for development of the WRP within this parcel to negatively impact protected species. Further protected species surveys would be required to determine the potential for significant adverse impacts.

Planning Considerations

- 3.4.10 The main planning considerations for WRP_ 70 are:

Land Use

- 3.4.11 The parcel is currently undeveloped, but it is in a residential area and there is an outline planning application for residential development currently being determined. The development of this parcel for a WRP would prevent that proposal coming forward, should it be granted planning permission (undetermined as of May 2023). It is noted the parcel is not allocated in the Local Plan.

Biodiversity

- 3.4.12 There are no national or international designations on the parcel. The parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders'. Paragraph 4.3.17 of the NPS notes that "*The Secretary of State should give due consideration to such regional or local designations to ensure that these sites are safeguarded. However, given the need for new infrastructure, these designations should not be used in themselves to refuse development consent where harm cannot be avoided (through locating on an alternative site with less harmful impacts) or adequately mitigated. In these circumstances, there should be compensatory measures.*"

Landscape and Visual

- 3.4.13 The parcel is located outside of the National Park and is within close proximity (20m) to the Chichester Harbour AONB. Paragraph 4.9.14 of the NPSWRI notes that development should avoid compromising the purpose of the designation and be designed sensitively. A WRP at this location

⁷ published in 2020 by the Solent Waders and Brent Geese Strategy Steering Group

would be highly visible and would likely lead to landscape and visual impacts. These impacts would likely be difficult to mitigate through design due to exposed and open nature of the parcel and therefore the WRP at this parcel would likely conflict with the NPSWRI.

- 3.4.14 The NPSWRI (Paragraph 4.9.10) seeks “to ensure that ‘proposed developments need to be designed and located carefully, taking account of the potential impact on the landscape... the aim should be to avoid or minimise harm to the landscape providing appropriate mitigation or enhancement measures where possible.’”
- 3.4.15 Paragraph 4.9.17 of the NPSWRI requires the Secretary of State to “judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the development”. Given the location of the parcel in proximity to existing residential properties to the north and south it is likely that there would be significant landscape and visual impacts on the local residents, which would weigh against the benefits of the proposed development.

Historic Environment

- 3.4.16 The parcel is within 10 m of the Mill Lane Conservation Area and as set out in Paragraph 4.8.17 of the NPSWRI it will be necessary to ‘to avoid or minimise any conflict between the conservation of the heritage asset and any aspect of the proposal’.

Constructability and Engineering Considerations

- 3.4.17 The parcel is generally level and is elevated relative to the surrounding residential areas. The parcel is likely to require a large buffer around the parcel to allow screening, most likely in the form of planting or bunding, to avoid and reduce visual impacts. It is not yet clear if the remaining developable area would be of a sufficient size to accommodate the proposals.
- 3.4.18 Depending on plant footprint and need for screening, there may not be sufficient space for HLPS. If the HLPS can be sited here, it’s very unlikely that there would be sufficient construction space to progress in parallel with the construction of the WRP itself, meaning a significant impact on programme.
- 3.4.19 Additional buffer areas or acoustic sheds may be needed to reduce significant impacts to nearby residents from construction works, including 24 hour tunnelling activities.
- 3.4.20 Services crossing the southern section of the parcel are:
- 2no. High Pressure Gas mains cross site; and
 - 2no. 450mm Portsmouth Water pipes.
- 3.4.21 Services would either need to be diverted, or if the services are not diverted, they would reduce the area available for buildings by approximately 30% leaving 2.6 ha developable. Service diversion would be necessary to maximise available area so that the WRP can be delivered at this parcel.
- 3.4.22 Access would be off Langstone Road and a new entrance into the parcel would need to be formed.
- 3.4.23 Service diversions and the new entrance would need to be completed prior to works starting.
- 3.4.24 Langstone Road is the only access in to and from Hayling Island and construction traffic would cause a significant increase in existing traffic levels.
- 3.4.25 This is one of the most easterly parcels considered. An additional 1.5 km in tunnel length (over the best engineering solution pipeline route in the Summer 2022 public consultation) would be needed for both the pipelines to Havant Thicket Reservoir and towards Otterbourne WSW having an impact on programme of approximately 6 to 8 months assuming the same Tunnel Boring Machine (TBM) is used.

3.4.26 A shaft off one of the tunnels could be located on Budds Farm WTW so that the pipelines transferring treated wastewater to the WRP and reject water back to the LSO could be contained within one of the tunnels. This would negate the need for horizontal direction drilling these pipelines.

3.5 WRP_71

Parcel Location and Description

3.5.1 WRP_71 is shown on Figure 3.5 below and is 10.6 ha. The parcel comprises a number of warehouses, areas of hardstanding, access roads, a household waste recycling centre and an aggregates wharf. Harts Farm Way, which provides access from the A27 Havant Bypass to the industrial areas to the east, runs through the parcel.



Figure 3.5: Location of WRP_71

Environmental Considerations

3.5.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the following environmental topics were considered:

- Marine Biodiversity;
- Land Quality; and
- Socio-Economics.

3.5.3 The parcel is within 150m of the Chichester and Langstone Harbours Ramsar, SPA and Solent Maritime SAC to the south, which is afforded the highest level of protection within the NPSWRI (paragraph 4.3.13). Due to the proximity of these sites an HRA would be required. In addition, Langstone Harbour SSSI is also located 150m to the south. Further assessment would be required

to understand the impacts on the SSSI. The Solent Waders and Brent Goose Strategy⁸ indicates that the parcel is directly adjacent to a Candidate Site (H09) for the internationally important Brent Goose and Solent Wader bird, which is functionally linked habitat for Chichester and Langstone Harbours SPA.

- 3.5.4 Due to the presence of the Brockhampton Stream, it is assumed that the pipeline required to be constructed between Budds Farm WTW and the parcel would need to be via a trenchless technique. It is possible that migratory fish may utilise Brockhampton Stream for spawning purposes and underwater noise and vibration generated from such an activity could act as a barrier to fish migration. Additionally, there may be requirements to undertake underwater noise modelling to justify any decisions made in the assessment process.
- 3.5.5 Landfill materials in the western part of the parcel are understood to be made ground and could be contaminated. It is unlikely that the soils from the landfilled area can be re-used through conventional means i.e. using mechanisms such as the Contaminated Land: Applications in Real Environments (CL:AIRE) Definition of Waste: Code of Practice (DoWCOP), and as such a bespoke permit may be required from the Environment Agency (EA) to recover the soils for reuse so that they are no longer a 'waste'. Otherwise, the potentially contaminated soils would have to be disposed of if not suitable for reuse, incurring additional costs to the project and permitting requirements. This would need to be considered as part of the reporting during the Desk Top Study production and/or subsequent GQRA production and further surveys and assessments would be required. The parcel condition would need to be investigated in further detail at the next stage.

Planning Considerations

- 3.5.6 The main planning considerations for WRP_71 are:

Land Use

- 3.5.7 **Existing use:** The parcel is currently in employment use. Part of the parcel is also allocated for employment (allocation BD9) in the HBC Local Plan, which could support 16,275 sqm of floorspace. The Local Plan supports development where it would be consistent with the site allocation and takes account of the site-specific requirements.
- 3.5.8 The size of the parcel could allow a number of alternative layout options, which may avoid or reduce potential impacts on existing employment uses (Paragraph 4.10.9 of the NPSWRI).
- 3.5.9 **Mineral safeguarding:** A portion of WRP_71 is designated as a Safeguarded mineral resources site under the Hampshire County Council Minerals and Waste Plan 2013 policy map. In accordance with paragraph 4.10.16 of the NPSWRI, an assessment of impacts to the mineral safeguarded area would need to be undertaken to determine if the loss would be acceptable.

Biodiversity

- 3.5.10 There are no national or international designations on the parcel. The parcel is approximately 150m from the Langstone Harbour SSSI, Chichester and Langstone Harbours Ramsar and SPA and, Solent Maritime SAC to the south, and as noted above further assessment would be required to understand the impacts to the SSSI ”.

Landscape and Visual

- 3.5.11 The parcel is in the urban area boundary of the HBC Local Plan. As the parcel is already developed for employment, it is unlikely a WRP would lead to significant landscape impacts.

⁸ published in 2020 by the Solent Waders and Brent Geese Strategy Steering Group

Constructability and Engineering Considerations

- 3.5.12 Projected sea level rise due to climate change and its effect on tidal flooding events is identifying a significant increased flood risk within this parcel and the surrounding area. Raising the levels of the parcel could help to mitigate the potential flood risk impacts but could transfer flood risk to other areas. See Appendix B for tidal flood risk maps.
- 3.5.13 The parcel is large and includes a variety of existing businesses and industrial units, which are likely to require demolition. A more detailed analysis would be needed to understand the nature of various existing constructions and materials to be managed.
- 3.5.14 Various services including sewers, water mains, 132kV & 33kV power lines cross over the whole parcel so some major diversion work may need to take place. As the total area of the parcel is 10.63 ha, it may be possible to work around service and avoid diversion, lessening any potential impact to programme.
- 3.5.15 Existing buildings would need to be demolished and the parcel remediated before construction could commence. All enabling works would need to be carried out prior to works commencing.
- 3.5.16 Access to the parcel would be via Harts Farm Way.
- 3.5.17 The southwest portion of the parcel is a site occupied by Tarmac. It has the advantage of being close to Budds Farm WTW, enough to allow HDD pipe construction. However, the remainder of the parcel is on the other side of Harts Farm Way, so would require a road crossing. This southwest portion alone would not be sufficient room for the WRP, High-Lift Pumping Station (HLPS) and tunnelling to be constructed in parallel.
- 3.5.18 For the pipeline towards Otterbourne WSW, the potential tunnel route is approximately 300 m longer than the best engineering solution pipeline route in the Summer 2022 consultation, inclusive of tunnelling under the Hermitage Stream. This would add 1 to 2 months to the schedule. However, for the pipeline to Havant Thicket Reservoir, the potential tunnel route would be the same length.
- 3.5.19 For the pipeline connections to Budd Farm for treated wastewater and reject stream transfer, horizontal directional drilling could be utilised if the connection only needed to be made to the Tarmac site, though this would necessitate several additional trenchless crossings to connect this part of the parcel to the part that is located on the north of Harts Farm Way.

3.6 WRP_72

Parcel Location and Description

- 3.6.1 WRP_72 is shown on Figure 3.6 and is approximately 9.3 ha. The parcel consists of open grassland and hardstanding and is bordered by a belt of trees. Harts Farm Way borders the parcel to the south, the A27 borders the parcel to the north and the Hermitage Stream, and a footpath borders the parcel to the east.



Figure 3.6: Location of WRP_72

Environmental Considerations

3.6.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the following environmental topics were considered:

- Biodiversity;
- Marine Biodiversity; and
- Ground Condition.

3.6.3 The parcel is located approximately 170 m north of the Solent Maritime SAC and Chichester and Langstone Harbours Ramsar, SPA, however it is within 20 m of the Hermitage Stream which is upstream and a pathway to these sites. As stated in the NPSWRI (Paragraph 4.3.13), the highest level of biodiversity protection is afforded to these sites. Due to the proximity to these sites, a HRA would be required. The Solent Waders and Brent Goose Strategy⁹ indicates that the western section of the parcel is a Low Use Site (H08) for the internationally important Brent Geese and Solent Wader birds, which is functionally linked to the SPA. To the west of the parcel is a Core Area for Brent Geese and Solent Wader birds, therefore, an environmental buffer is expected to be necessary. The outline planning permission granted on this parcel has a Section 106 contribution to fund mitigation measures for the loss of the low use site.

3.6.4 Due to the proximity of the parcel, there is potential for the proposed WRP to cause disturbance to internationally important bird populations, during construction and operation. Further assessment would be required to understand the impacts on the Langstone Harbour SSSI and accordance with Paragraph 4.3.15 of the NPSWRI.

3.6.5 A lowland woodland HPI has been recorded on the parcel. Sections of the deciduous woodland priority habitat at the northeast corner of the parcel form a buffer between the parcel and the A27 to

⁹ published in 2020 by the Solent Waders and Brent Geese Strategy Steering Group

the north and the Hermitage Stream to the east. The proposed WRP has the potential to negatively impact HPI, through direct loss. Where possible, these habitats should be avoided, unless the benefits of the development clearly outweigh the harm (Paragraph 4.3.19 of the NPSWRI), therefore it is recommended that this woodland is retained as far as practicable. An ecological walkover of the parcel was undertaken during April 2021 to inform a PEA for the early stages of the WRP site selection. The PEA identified suitable habitat for bats, breeding birds, dormouse, badger, reptiles, and great crested newts. Further protected species surveys would be required to determine the potential for significant adverse impacts.

- 3.6.6 Due to the presence of the Brockhampton Stream, it is assumed that the pipeline required to be constructed between Budds Farm WTW and the parcel would need to be via a trenchless technique. It is possible that migratory fish may utilise Brockhampton stream for spawning purposes and underwater noise and vibration generated from such an activity could act as a barrier to fish migration. Additionally, there may be requirements to undertake underwater noise modelling to justify any decisions made in the assessment process.
- 3.6.7 It is unlikely that site soils from the landfilled area can be re-used through conventional means i.e. using mechanisms such as the CL:AIRE DoWCOP, and as such a bespoke permit may be required from the EA to recover the soils for reuse so that they are no longer a 'waste'. Otherwise, the potentially contaminated soils would have to be disposed of if not suitable for reuse, incurring additional costs and permitting requirements. This would need to be considered as part of the reporting during the Desk Top Study production and/or subsequent GQRA production and further surveys and assessments would be required. The parcel condition would need to be investigated in further detail at the next stage.

Planning Considerations

- 3.6.8 The main planning considerations for WRP_72 are:

Land Use

- 3.6.9 **Existing use:** The parcel is allocated for employment (allocation BD11) in the HBC Local Plan, which could support 23,400 m² of floorspace. The Local Plan supports development where it is consistent with the site allocation and takes account of the site-specific requirements.
- 3.6.10 The parcel has outline planning permission (reference: APP/21/00189) for employment development to provide 29,000 m² of B2 / B8 floorspace. Reserved matters applications have not been submitted, nor has the development commenced. The development should accord with Paragraph 4.10.9 of the NPSWRI by identifying any effects on existing or proposed uses on or near to the site.
- 3.6.11 The proposed WRP is broadly consistent with the site allocation for employment use and the development plan is not prescriptive on use class designations. The development plan would not therefore preclude the site coming forward for the proposed WRP use (albeit it would not deliver the form of employment development aspired to in the allocation for a "high quality gateway employment site that could provide up to 23,400 square metres of new manufacturing and/or warehousing floorspace, supporting between 334 and 650 jobs").
- 3.6.12 **Mineral safeguarding:** A very small portion of WRP_72 is designated as a safeguarded mineral resources site under the Hampshire County Council Minerals and Waste Plan 2013 policy map. In accordance with of the NPSWRI (paragraph 4.10.16), an assessment of impacts to the mineral safeguarded area would need to be undertaken to determine if the loss would be acceptable. This would only be necessary if the WRP is proposed to be located on this part of the parcel.

Biodiversity

- 3.6.13 There are no national or international designations on the parcel. The parcel is within 170m of a number of ecological sites, including the Langstone Harbour SSSI, Solent Maritime SAC and Chichester and Langstone Harbours Ramsar / SPA. The design would need to have regard to these

features, informed by further assessment to understand the potential impacts and accordance with Paragraph 4.3.15 NPSWRI.

- 3.6.14 Part of the parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders', meaning that the development would need to avoid or mitigate any significant impacts on the adjoining habitat and to be consistent with Policy DM23.

Landscape and visual

- 3.6.15 The parcel is in the urban area boundary of the HBC Local Plan and has been allocated for employment development. There are no expected significant impacts on local landscape or views.

Constructability and Engineering Considerations

- 3.6.16 The parcel is a former landfill site. Part of the parcel is level and part is mounded, this is likely to require a substantial cut and fill exercise with import and export of material as necessary, to form a level platform. Ground works would need to take place to level the area prior to construction works beginning. This would involve the handling of contaminated soil. The site layout may be constrained by the management of contaminated ground, but the overall parcel size should be sufficient to work within such constraints.
- 3.6.17 Services crossing the parcel are:
- Overhead 33kV power cable run along the south of the parcel.
- 3.6.18 There is no major impact to overall development of the parcel for the siting of the WRP, as the overhead line runs through or close to the planted boundary, but it could need to be diverted if the area was required for construction. There is sufficient room for the WRP, HLPS and tunnelling to be constructed in parallel.
- 3.6.19 Access to the parcel would be via Harts Farm.
- 3.6.20 Enabling works would need to be carried out prior to works commencing. This could be concurrent with other pipeline tunnelling works in the scheme.

3.7 WRP_73

Parcel Location and Description

- 3.7.1 WRP_73 is shown in Figure 3.7 and is approximately 5.3 ha. The parcel consists of open grassland and woodland and appears to contain a number of footpaths. The parcel is south of Harts Farm Way and is bordered to the south and west by an access road to a slipway, and to the east by the Hermitage Stream.



Figure 3.7: Location of WRP_73

Environmental Considerations

3.7.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the following environmental topics were considered:

- Biodiversity;
- Marine Biodiversity;
- Hydrology and Flood Risk; and
- Ground Conditions.

3.7.3 The parcel is within approximately 10 m of the Chichester and Langstone Harbours Ramsar, SPA and Solent Maritime SAC. As stated in the NPSWRI (paragraph 4.3.13), the highest level of biodiversity protection is afforded to these sites. It is a Candidate Site (H09) for the internationally important Brent Geese and Solent Wader birds as set out in the Solent Waders and Brent Goose Strategy, which is functionally linked habitat to the SPA. Due to the proximity to Chichester and Langstone Harbours SPA and Ramsar and Solent Maritime SAC, an HRA would be required.

3.7.4 The parcel is approximately 10m of the Langstone Harbour SSSI, designated for its saltmarshes and mud flats, which supports internationally important bird populations. Due to the proximity of the parcel, there is potential for the proposed WRP to cause disturbance to these birds during construction and operation. Further assessment would be required to understand the impacts on the SSSI and accordance with Paragraph 4.3.15 of the NPSWRI.

3.7.5 An ecological walkover of the parcel was undertaken during April 2021 to inform a PEA for the early stages of the WRP site selection. Lowland woodland HPI has been recorded on the parcel, therefore, the development of the WRP has the potential to impact HPI through direct loss. Where possible, these habitats should be avoided, unless the benefits of the development clearly outweigh the harm (Paragraph 4.3.19 of the NPSWRI). Retaining the deciduous woodland priority habitat

would reduce the developable area. The PEA site walkover identified suitable habitat for breeding birds, wintering birds, dormouse, badger, bats and reptiles. Further protected species surveys would be required to determine the potential for significant adverse impacts.

- 3.7.6 The parcel borders the edge of the Hermitage Stream, which is located at the northern shoreline of Langstone Harbour, however, the parcel is fully contained within the terrestrial environment.
- 3.7.7 As part of the parcel (southern edge) is located within Flood Zones 2 and 3, there is a risk that flooding may occur which could facilitate a contamination pathway for impact to the marine environment during construction and/or operation. A FRA and sequential test would be required.
- 3.7.8 Due to the presence of the Brockhampton Stream, it is assumed that the pipeline required to be constructed between Budds Farm WTW and the parcel would need to be via a trenchless technique. It is possible that migratory fish may utilise Brockhampton stream for spawning purposes and underwater noise and vibration generated from such an activity could act as a barrier to fish migration. Additionally, there may be requirements to undertake underwater noise modelling to justify any decisions made in the assessment process.
- 3.7.9 It is unlikely that site soils from the landfilled area can be re-used through conventional means i.e. using mechanisms such as the CL:AIRE DoWCOP, and as such a bespoke permit may be required from the EA to recover the soils for reuse so that they are no longer a 'waste'. Otherwise, the potentially contaminated soils would have to be disposed of if not suitable for reuse, incurring additional costs to the project and permitting requirements. This would need to be considered as part of the reporting during the Desk Top Study production and/or subsequent GQRA production and further surveys and assessments would be required. The parcel condition would need to be investigated in further detail at the next stage.

Planning Considerations

- 3.7.10 The main planning considerations for WRP parcel 73 are:

Land Use

- 3.7.11 **Existing use:** The parcel is open land, with public rights of way around the perimeter of the parcel. The parcel is not allocated for development.
- 3.7.12 **Mineral safeguarding:** A small portion of WRP_73 is designated as a safeguarded mineral resources site under the Hampshire County Council Minerals and Waste Plan 2013 policy map. In accordance with of the NPSWRI (paragraph 4.10.16), an assessment of impacts to the mineral safeguarded area may need to be undertaken depending on the location of the WRP to determine if the loss would be acceptable.
- 3.7.13 **Open Space:** WRP_73 is not in the Green Belt, but it is understood to form part of the Broadmarsh Coastal Park, which is understood to fall within the definition of open space. The WRP in this location would therefore lead to a loss of open space, which would conflict with the paragraph 4.10.10 of the NPS.

Biodiversity

- 3.7.14 There are no national or international designations on the parcel although it is within approximately 10 m of the Langstone Harbour SSSI, and further assessment would be required to understand the impacts on the SSSI and accordance with Paragraph 4.3.15 of the NPSWRI.
- 3.7.15 The parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders'. Policy DM23 would then require an assessment to be undertaken that demonstrates significant harm to biodiversity could be avoided.

Landscape and Visual

- 3.7.16 The parcel is located outside of the National Park and approximately 1.3km from the Chichester Harbour AONB. Paragraph 4.9.14 of the NPSWRI notes that development should avoid compromising the purpose of the designation and be designed sensitively.
- 3.7.17 In terms of local policy, the parcel is designated as an undeveloped gap by Policy AL2 of the HBC Local Plan and could impact the local landscape. Policy AL2 seeks to prevent development that would lead to coalescence of settlements and development must meet an overriding public need that it cannot be accommodated elsewhere. The policy notes the “*undeveloped gaps form an important part of the Borough’s special environment, as they separate larger settlements from one another creating distinctive identities.*” The NPSWRI (paragraph 4.9.10) seeks to ensure that a “*proposed development needs to be designed and located carefully, taking account of the potential impact on the landscape... the aim should be to avoid or minimise harm to the landscape providing appropriate mitigation or enhancement measures where possible.*”
- 3.7.18 A WRP at this location would likely result in landscape visual impacts.

Flood Risk

- 3.7.19 Small sections at the south of the parcel are within Flood Zone 2 and 3, and as such the sequential test would be required, as set out in the NPSWRI and the NPPF. Parts of the parcel are located outside of areas of high flood risk, which would be sequentially preferable. Annex 3 of the NPPF classifies sewage treatment, transmission and water transfer infrastructure as either less vulnerable or water compatible, meaning that if those parts of the parcel with lower flood risk were not available, the exception test would need to pass by demonstrating that the development will be safe and not increase flood risk elsewhere.

Constructability and Engineering Considerations

- 3.7.20 The parcel is a former landfill, which is very hilly and is likely to require a substantial cut and fill exercise to form a level platform. This would result in export of contaminated material from across the whole of parcel 73, to reduce the parcel to a suitable level.
- 3.7.21 The parcel is not currently subject to flooding, but projected sea level rise due to climate change and its effect on tidal flooding events is identifying a significant increased flood risk within this parcel and the surrounding area. Raising the levels of the parcel could help to mitigate the potential flood risk impacts but could transfer flood risk to other areas. See Appendix B for tidal flood risk map.
- 3.7.22 Depending on WRP phasing there may not be sufficient room for the WRP and tunnel construction to be carried out in parallel which could have significant programme implications. Depending on plant footprint and the possible need to retain some trees, there may not be sufficient space for the WRP. It is expected that the HLPS may require additional land elsewhere.
- 3.7.23 Access to the parcel would be via Harts Farm Way.
- 3.7.24 There is potential for some tree and shrub clearance to be undertaken. All enabling works would need to be carried out prior to works commencing. This involves a large earthworks activity, which could add up to 8 months to the programme.

3.8 WRP_74

Parcel Location and Description

- 3.8.1 WRP_74 is shown in Figure 3.8 below and is approximately 5.4 ha. The parcel consists of open grassland, areas of trees, and areas of hardstanding which includes car and boat parking as well as a slipway into Langstone Harbour. The parcel also appears to contain footpaths. The parcel is south

of Harts Farm Way and the access road to the car parking and slipway, is north of Langstone Harbour and the Solent Way and is east of an access road to a car park.



Figure 3.8: Location of WRP_74

Environmental Considerations

- 3.8.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the following environmental topics were considered:
- Biodiversity;
 - Marine Biodiversity;
 - Hydrology and Flood Risk; and
 - Ground Conditions.
- 3.8.3 The parcel is within approximately 10m of the Chichester and Langstone Harbours Ramsar, SPA and Solent Maritime SAC. It is a Secondary Support Site for the internationally important Brent Geese and Solent Wader birds as set out in the Solent Waders and Brent Goose Strategy, which is considered functionally linked habitat to Chichester and Langstone Harbours SPA. A WRP in this location has the potential to harm the integrity of the Chichester and Langstone Harbours SPA and Ramsar and Solent Maritime SAC, and therefore a HRA would be required.
- 3.8.4 The parcel is within approximately 10m of the Langstone Harbour SSSI, designated for its saltmarshes and mud flats, which supports internationally important bird populations. Due to the proximity of the parcel, there is potential for the propose WRP to cause disturbance to these birds, during construction and operation. Further assessment is required to understand the impacts on the SSSI and accordance with Paragraph 4.3.15 of the NPSWRI.
- 3.8.5 The parcel is within approximately 10m of an area of lowland woodland to the east and coastal floodplain grazing marsh to the west, both of which designated as HPI. Where possible, these

habitats should be avoided, unless the benefits of the development clearly outweigh the harm (Paragraph 4.3.19 of the NPSWRI). Owing to the proximity to HPI, it is important to consider the impacts the WRP may have on these habitats. Both priority habitats have the potential to support protected species such as bats, badgers, dormouse and birds. Further protected species surveys would be required to determine the potential for significant adverse impacts.

- 3.8.6 Part of the parcel (southern edge) is located within Flood Zones 2 and 3, there is a risk that flooding may occur which could facilitate a pathway for impact to the marine environment during construction and/or operation. A FRA and sequential test would likely be required.
- 3.8.7 Due to the presence of the Brockhampton Stream, it is assumed that the pipeline required to be constructed between Budds Farm WTW and the parcel would need to be via a trenchless technique. It is possible that migratory fish may utilise Brockhampton stream for spawning purposes and underwater noise and vibration generated from such an activity could act as a barrier to fish migration. Additionally, there may be requirements to undertake underwater noise modelling to justify any decisions made in the assessment process.
- 3.8.8 It is unlikely that site soils from the landfilled area can be re-used through conventional means i.e. using mechanisms such as the CL:AIRE DoWCOP, and as such a bespoke permit may be required from the EA to recover the soils for reuse so that they are no longer a 'waste'. Otherwise, the potentially contaminated soils would have to be disposed of if not suitable for reuse, incurring additional costs to the project and permitting requirements. This would need to be considered as part of the reporting during the Desk Top Study production and/or subsequent GQRA production and further surveys and assessments would be required. The parcel condition would need to be investigated in further detail at the next stage.

Planning Considerations

- 3.8.9 The main planning considerations for WRP parcel 74 are:

Land Use

- 3.8.10 **Existing use:** The parcel is open land and the southeast part of the parcel is used as a car park. The parcel is within approximately 10 m of the Langstone Harbour SSSI. There is Public Right of Way (PROW) along the southern boundary.
- 3.8.11 **Mineral safeguarding:** A small portion of WRP_73 is designated as a safeguarded mineral resources site under the Hampshire County Council Minerals and Waste Plan 2013 policy map. In accordance with of the NPSWRI (paragraph 4.10.16), an assessment of impacts to the mineral safeguarded area may need to be undertaken depending on the location of the WRP to determine if the loss would be acceptable.
- 3.8.12 **Open Space:** WRP_74 is not in the Green Belt, but it is understood to form part of the Broadmarsh Coastal Park. The WRP in this location would therefore lead to a loss of open space (as defined in the TCPA 1990), which would conflict with the paragraph 4.10.10 of the NPS.

Biodiversity

- 3.8.13 There are no national or international designations on the parcel, but it is approximately 10m from Chichester and Langstone Harbours Ramsar, SPA, Solent Maritime SAC and Langstone Harbour SSSI. Where significant adverse effects are identified, consent should not normally be granted (Paragraph 4.3.15 of the NPSWRI).
- 3.8.14 The parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders'. Policy DM23 would then require an assessment to be undertaken that demonstrates significant harm to biodiversity could be avoided.

Landscape and Visual

- 3.8.15 The parcel is located outside of the National Park and approximately 1.4km from the Chichester Harbour AONB. Paragraph 4.9.14 of the NPSWRI notes that development should avoid compromising the purpose of the designation and be designed sensitively.
- 3.8.16 In terms of local policy, the parcel is designated as an undeveloped gap by Policy AL2 of the HBC Local Plan and could have local landscape value. Policy AL2 seeks to prevent development that would lead to coalescence of settlements and development must meet an overriding public need that it cannot be accommodated elsewhere. The policy notes the “*undeveloped gaps form an important part of the Borough’s special environment, as they separate larger settlements from one another creating distinctive identities.*” The NPSWRI (paragraph 4.9.10) seeks “*to ensure that ‘proposed developments need to be designed and located carefully, taking account of the potential impact on the landscape... the aim should be to avoid or minimise harm to the landscape providing appropriate mitigation or enhancement measures where possible.’*”
- 3.8.17 A WRP at this location would likely result in landscape visual impacts.

Flood Risk

- 3.8.18 Small sections at the south of the parcel are within Flood Zone 2 and 3, and as such the sequential test would be required as set out in the NPSWRI and the NPPF. Parts of the parcel are located outside of areas of high flood risk, which would be sequentially preferable. Annex 3 of the NPPF classifies sewage treatment, transmission and water transfer infrastructure as either less vulnerable or water compatible, meaning that if those parts of the parcel with lower flood risk were not available, the exception test would need to be satisfied by demonstrating that the development will be safe and not increase flood risk elsewhere.

Constructability and Engineering Considerations

- 3.8.19 The parcel is a former landfill site which is hilly and is likely to require a substantial cut and fill exercise to form a level platform. This could result in a large volume of exported contaminated material (previous landfill site) to reduce the parcel to a suitable level. Ground works would need to take place to level the area prior to construction works beginning and the safe management and removal of any contaminated soils would need to be ensured.
- 3.8.20 The parcel is not currently subject to flooding, but projected sea level rise due to climate change and its effect on tidal flooding events is identifying a significant increased flood risk within this parcel and the surrounding area. Raising the levels of the parcel could help to mitigate the potential flood risk impacts but could transfer flood risk to other areas. See Appendix B for tidal flood risk map.
- 3.8.21 The parcel is bounded by the access road and a slipway to a boat yard and parking areas for the Broadmarsh Coastal Path. It may be challenging to move the boat storage and marine unit away from the slipway as these are likely intrinsically linked. Retaining this and the flood risk may mean the parcel is not large enough, but further consideration is required to understand the developable area.
- 3.8.22 There is sufficient room for WRP, HLPS and tunnelling to be constructed in parallel, subject to confirmation of plant footprint, retention of coastal path.
- 3.8.23 Services crossing the northern section of the parcel are:
- Overhead 33kv power cable.
- 3.8.24 The cable presents no major impact to overall development of the parcel, due to only clipping the far northwest corner, however, this may impact the access location. Access to the parcel would be via Harts Farm Way. There is potential to use the existing entrance to the parcel with some improvements.

3.8.25 All enabling works would need to be carried out prior to works commencing. Tunnel routes to Havant Thicket Reservoir and towards Otterbourne WSW would need to be approximately an additional 400m, which could impact the programme approximately 2 to 3 months.

3.9 WRP_75

Parcel Location and Description

3.9.1 WRP_75 is shown in Figure 3.9 and is approximately 5.3 ha. The parcel is located within open grassland and areas of trees. The parcel is south of Harts Farm Way and slipways associated with the A27 and A3(M), west of an access road to a car park and north of the Langstone Harbour and Solent Way.



Figure 3.9: Location of WRP_75

Environmental Considerations

3.9.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the following environmental topics were considered:

- Biodiversity;
- Marine Biodiversity;
- Hydrology and Flood Risk;
- Ground Conditions; and
- Soil Quality and Agricultural Land.

3.9.3 The parcel is within approximately 10 m of the Chichester and Langstone Harbours Ramsar, SPA and Solent Maritime SAC. It is a Core Area for the internationally important Brent Geese and Solent Wader birds as set out in the Solent Waders and Brent Goose Strategy, which is functionally linked habitat for Chichester and Langstone Harbours SPA. A WRP in this location has the potential to

harm the integrity of the Chichester and Langstone Harbours SPA and Ramsar and Solent Maritime SAC, and therefore a HRA would be required.

- 3.9.4 The parcel is approximately 10m from the Langstone Harbour SSSI, designated for its saltmarshes and mud flats, which supports internationally important bird populations. Due to the proximity of the parcel, there is potential for the proposed WRP to cause disturbance to these birds, during construction and operation. Further assessment would be required to understand the impacts on the SSSI and accordance with Paragraph 4.3.15 of the NPSWRI.
- 3.9.5 The parcel has been identified as being coastal floodplain grazing marsh and deciduous woodland HPI, therefore, the development of the WRP has the potential to negatively impact HPI, through direct loss. Where possible, these habitats should be avoided, unless the benefits of the development clearly outweigh the harm (paragraph 4.3.19 of the NPSWRI). There are numerous protected species recorded in the area, including bats, birds, reptiles, mammals and plants. Further protected species surveys would be required to determine the potential for significant adverse impacts.
- 3.9.6 Part of the parcel (southern edge) is located within Flood Zones 2 and 3, there is a risk that flooding may occur which could facilitate a pathway for impact to the marine environment during construction and/or operation. An FRA and sequential test are likely to be required.
- 3.9.7 Due to the presence of the Brockhampton Stream, it is assumed that the pipeline required to be constructed between Budds Farm WTW and the parcel would need to be via a trenchless technique. It is possible that migratory fish may utilise Brockhampton stream for spawning purposes and underwater noise and vibration generated from such an activity could act as a barrier to fish migration. Additionally, there may be requirements to undertake underwater noise modelling to justify any decisions made in the assessment process.
- 3.9.8 It is unlikely that site soils from the landfilled area can be re-used through conventional means i.e. using mechanisms such as the CL:AIRE DoWCOP and as such a bespoke permit may be required from the EA to recover the soils for reuse so that they are no longer a 'waste'. Otherwise, the potentially contaminated soils would have to be disposed of if not suitable for reuse, incurring additional costs to the project and permitting requirements. This would need to be considered as part of the reporting during the Desk Top Study production and/or subsequent GQRA production and further surveys and assessments would be required. The parcel condition would need to be investigated in further detail at the next stage.

Planning Considerations

- 3.9.9 The main planning considerations for WRP_75 are:

Land Use

- 3.9.10 **Existing use:** The parcel is open land and there is a PRoW alongside the southern boundary.
- 3.9.11 **Open space:** WRP_75 is not in the Green Belt, but it is understood to form part of the Broadmarsh Coastal Park. The WRP in this location would therefore lead to a loss of open space (as defined in the TCPA 1990), which would conflict with the Paragraph 4.10.10 of the NPS.

Biodiversity

- 3.9.12 There are no national or international designations on the parcel though it is within approximately 10 m of the Langstone Harbour SSSI, and as noted above development of this parcel would potentially disturb important bird populations. Where significant adverse effects are identified, consent should not usually be granted (Paragraph 4.3.15 of the NPSWRI).

- 3.9.13 The parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders'. Policy DM23 would then require an assessment to be undertaken that demonstrates significant harm to biodiversity could be avoided.

Landscape and Visual

- 3.9.14 The parcel is located outside of the National Park and is approximately 1.8km from the Chichester Harbour AONB. Paragraph 4.9.14 of the NPSWRI notes that development should avoid compromising the purpose of the designation and be designed sensitively.
- 3.9.15 In terms of local policy, the parcel is designated as an undeveloped gap by Policy AL2 of the HBC Local Plan and could have local landscape value. Policy AL2 seeks to prevent development that would lead to coalescence of settlements and development must meet an overriding public need that it cannot be accommodated elsewhere. The policy notes the *undeveloped gaps form an important part of the Borough's special environment, as they separate larger settlements from one another creating distinctive identities*. The development should accord to Paragraph 4.10.9 of the NPSWRI.
- 3.9.16 A WRP at this location would likely result in landscape visual impacts.

Flood Risk

- 3.9.17 Small sections at the south of the parcel are within Flood Zone 2 and 3, and as such the sequential test would be required as set out in the NPSWRI and the NPPF. Parts of the parcel are located outside of areas of high flood risk, which would be sequentially preferable. Annex 3 of the NPPF classifies sewage treatment, transmission and water transfer infrastructure as either less vulnerable or water compatible, meaning that those parts of the parcel with lower flood risk were not available, the exception test would need to be satisfied to demonstrate that the development will be safe and not increase flood risk elsewhere.

Constructability and Engineering Considerations

- 3.9.18 The parcel is a former landfill site which is a steeply sloping and is likely to require a substantial cut and fill exercise to form a level platform. This could result in a large volume of exported contaminated material to reduce the parcel to a suitable level. Ground works would need to take place to level the area prior to construction works beginning and the safe management and removal of any contaminated soils would need to be ensured.
- 3.9.19 Projected sea level rise due to climate change and its effect on tidal flooding events is identifying a significant increased flood risk within this parcel and the surrounding area. Raising the levels of the parcel could help to mitigate the potential flood risk impacts but could transfer flood risk to other areas. See Appendix B for tidal flood risk map.
- 3.9.20 The parcel is bounded by the access road to the Chalkdock Lake car park which may need to be retained. There is sufficient space for WRP, HLPS and tunnelling to be constructed in parallel, subject to confirmation of plant footprint, and retention of coastal path. Further consideration of the likely layout and retaining existing features would be required.
- 3.9.21 Services crossing the parcel are:
- Overhead 33Kv power cable.
- 3.9.22 These services create no major impact to overall development of the parcel, as the overhead line only clips the far northwest corner of the parcel but may impact the entrance location. Further consideration of the access route is required and whether it would be impacted by overhead power cables.
- 3.9.23 Access to the parcel would be via Harts Farm Way. Current layout would only allow traffic to turn left on leaving site and arriving from the east along Harts Farm Way. There is limited space onto Harts

Farm Way between road to Chalkdock Lake car park and roundabout. There is the potential to use the existing entrance to the parcel with some improvements.

- 3.9.24 Development of this parcel would result in an increased distance to Budds Farm WTW which may make a tunnel necessary (to receive treated wastewater, return reject water) under the Chichester and Langstone Harbours Ramsar, SPA and Solent Maritime SAC This tunnel would be approximately 1km which would be delivered using the same TBM and have a 4 to 6 month impact on programme.

3.10 WRP_76

Parcel Location and Description

- 3.10.1 WRP_76 is shown Figure 3.10 below and is 5.5 ha. The parcel is located within agricultural land which also contains areas of trees and a small area of grassland in the southeast. The parcel is bordered to the north by a railway line, to the west and south by the A27 Havant Bypass on-slip and east by Mill Lane and some residential properties.



Figure 3.10: Location of WRP_76

Environmental Considerations

- 3.10.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the following environmental topics were considered:

- Air Quality;
- Noise and Vibration;
- Landscape and Visual;
- Arboriculture;
- Soil Quality and Agricultural Land;

- Historic Environment;
- Traffic and Transport; and
- Ground Conditions.

- 3.10.3 The parcel comprises an arable field enclosed by the A27 trunk road to the south and west at its junction with the A3(M), which is lined by mature trees, and a railway line to the north. There are groups of mature trees in the southern part of the parcel, this group of trees are protected by Tree Preservation Order (TPO). The project would seek to avoid the TPOs and root protection areas (RPAs). Where possible.
- 3.10.4 The parcel is bound to the east by the southern extent of Old Bedhampton Conservation Area which includes The Old Mill House (NHLE 1340188), a Grade II Listed Building which dates back to the 18th century. In consideration of the existing tree line and hedgerow along the eastern boundary of the parcel, there is potential for further landscaping options to mitigate any visual intrusion from the proposed WRP upon the Conservation Area and Grade II Listed Building. Trees within the Conservation Area may be impacted by works taking place in the parcel. An arboricultural impact assessment would be required to determine the full impact of any proposed works on nearby trees and hedgerows.
- 3.10.5 There is potential for buried archaeological remains to be encountered across the parcel. There would be a requirement to undertake a programme of non-intrusive and intrusive archaeological evaluation (i.e. geophysical survey and trial trenching) to inform any mitigation requirements such as archaeological excavation.
- 3.10.6 A large housing estate is currently under construction to the north of the railway line and there are some isolated properties to the east at the end of Mill Lane. Residential properties are sensitive receptors which may be impacted by the proposed WRP, Adherence to control related management plans would likely mitigate construction impacts and visual screening could be implemented within the design to mitigate potential visual impacts.
- 3.10.7 It is unlikely that site soils from the landfilled area can be re-used through conventional means i.e. using mechanisms such as the CL:AIRE DoWCOP, and as such a bespoke permit may be required from the Environment Agency to recover the soils for reuse so that they are no longer a 'waste'. Otherwise, the potentially contaminated soils would have to be disposed of if not suitable for reuse, incurring additional costs to the project and permitting requirements. This should be considered as part of the reporting during the Desk Top Study production and/or subsequent GQRA production and further surveys and assessments would be required. The parcel condition would need to be investigated in further detail at the next stage.
- 3.10.8 To the north of the parcel is a Source Protection Zone (SPZ) and therefore an assessment of the potential groundwater impacts would be required as a result of the potential for adverse effects to groundwater intended for human consumption. Paragraph 4.15.5 of the NPSWRI states "Where the proposed development is likely to have adverse effects on the water environment, the applicant should undertake an assessment of the existing status and impacts of the proposed development on water quality, water resources and physical characteristics as part the Environmental Statement. A project specific Water Framework Directive assessment may also be required." Further assessment is therefore required.
- 3.10.9 There are several residential properties in close proximity to the parcel (approximately 15 metres). Whilst many of the potential impacts could be reduced through standard control management plans, to control potential construction impacts, such as dust and emissions and noise and vibration, there are a number of environmental impacts that would need to be satisfactorily overcome for the parcel to be considered suitable.

Planning Considerations

3.10.10 The main planning considerations for WRP parcel 76 are:

Land use

3.10.11 The parcel is in **agricultural use and is not allocated for development**. Directly north of the A3(M) is a residential site that is currently under construction. There is a PRoW that runs through part of the parcel.

3.10.12 **Agricultural land:** Part of this parcel is classified as **Grade 1: Excellent quality agricultural land**, which is considered Best and Most Versatile (BMV) Agricultural Land. The NPSWRI (paragraph 4.10.14) notes that '*applicants should use poorer quality land (grades 3b, 4 and 5) where possible to minimise impacts on soil quality*', and then goes on to note to (Paragraph 4.10.25) that the economic and other benefits of the best and most versatile agricultural land should be taken into account, alongside any mitigation that may minimise or avoid impacts on soil or soil resources. If there are impacts to the BMV, the benefits of the project would need to outweigh these impacts in accordance with paragraph 1.1.5 of the NPSWRI.

Biodiversity

3.10.13 There are no national or international designations on the parcel. The parcel is designated in the HBC Local Plan (Allocations) (2014) as an **'Uncertain site for Brent Geese and/or Waders'**. Policy DM23 would then require an assessment to be undertaken that demonstrates significant harm to biodiversity could be avoided.

Landscape and Visual

3.10.14 The parcel is located outside of the National Park and not near to an AONB.

Historic Environment

3.10.15 The parcel is approximately **10m from the Old Bedhampton Conservation Area**. Paragraph 4.8.15 of the NPSWRI would be engaged which requires "*In determining applications, the Secretary of State will seek to identify and assess the particular significance of any heritage asset that may be affected by the proposed development (including by development affecting the setting of a heritage asset), taking account of the available evidence and any necessary expertise.*"

3.10.16 Any impact to the conservation area would depend on the siting and location of the WRP at the parcel and further assessment of the potential impacts would therefore be required following more detailed siting design work.

Constructability and Engineering Considerations

3.10.17 The **parcel is generally flat and consists mainly of agricultural land with some potentially contaminated land in the southeast corner as this part of the parcel was part of an old sewage treatment works.**

3.10.18 The **parcel is not currently subject to flooding**, but projected sea level rise due to **climate change and its effect on tidal flooding events is identifying a significant increased flood risk within this parcel and the surrounding area**. Raising the levels of the parcel could help to mitigate the potential flood risk impacts but could transfer flood risk to other areas. See Appendix B for tidal flood risk map.

3.10.19 There is **likely to be sufficient room at the parcel for the WRP, HLPS and tunnel entrances, subject to confirmation of plant footprint**. However, due to required offset from the railway (30m), road (30m) and SPZ (which is outside the parcel to the north, but Portsmouth Water (PW) or the EA may require approval for works beyond the precise SPZ1 boundary if they present a risk to groundwater) the **tunnel shafts will have to be positioned in the middle of the parcel**. These offset distances have been identified to locate the shafts outside of the zone of influence of the railway and road and have been

calculated based on best practice for limits of the zone of influence with the assumption that the angle of response is 45 degrees. The tunnelling operations will require 2.5ha of space around these shafts while construction takes place. **The WRP will not be able to be constructed concurrently with the tunnelling, due to the tunnelling construction space required, leading to a significant impact on programme of circa 2 years.**

3.10.20 Services crossing the parcel are:

- 400mm High Pressure gas main cuts across the West of the parcel; and
- Southern Water sewers cuts across the north east corner.

3.10.21 **These services in themselves would not prohibit development** but if not diverted, they would constrain options for the layout of plant, buildings, infrastructure etc within the parcel.

3.10.22 An assessment was undertaken to understand potential access routes to the parcel during construction and operation.

3.10.23 Access off Mill Lane – Existing masonry arch bridge, likely to be a Network Rail asset that would require a number of structural assessment and inspections including intrusive investigations to determine the suitability of the structure either for construction or operational use. The assessments and inspections would likely require significant engagement with Network Rail, which could take several years to complete. **This route is very unlikely to be suitable for the construction phase as the route to Mill Lane has a constrained junction with Bidbury Lane, narrow road widths and tight junction radii, therefore unlikely to support large vehicles required for construction to access to Mill Lane.** The **bridge itself is unlikely to support the anticipated abnormal vehicle loadings associated with the predicted construction traffic** and following assessment could need modification or replacement. In the permanent operational phase, there is a possibility that the bridge could be used, but subject to the checks and assessments required to determine the suitability (for chemical delivery tankers) and the potentially significant amount of time required to engage and reach agreement with Network Rail in accordance with their safety procedures and protocols (if it is even feasible).

3.10.24 **Access off A27 Havant Bypass on-slip – this option is extremely unlikely to be acceptable to National Highways for permanent access as it would not comply with their current design standards (DMRB-CD122) and it presents a hazard (with slow moving vehicles accessing and egressing the parcel not expected by other drivers leading to a higher risk of accidents).** For the **construction phase, there would be a need for a traffic management regime (including restrictions of number of vehicular movements accessing and egressing the parcel) to be in place on the slip road and mainline of the A27 for the duration of works,** which National Highway could have concerns will cause an impact on the operability of existing road network, as well as leading to a significant impact on programme.

3.10.25 For **construction phase the option of a temporary bridge over the railway was reviewed and considered to be not viable.** The temporary structure would need to be raised 6 – 7 m above the railway and require approach ramps with lengths of 60 – 70 m. The ramps would impinge on housing development to the north and reduce the area for the WRP within the parcel, which would **significantly extend the construction programme.** A temporary bridge would need to be accessed via the residential road network to the north of the Railway. The use of this local highway network during construction could potentially further impact the new residents, as noted under the environmental assessment above.

3.10.26 **Access off the teardrop junction at the top of the A27 slip road was also assessed as unlikely to be feasible due to the large elevation change, proximity to the railway and the need to keep the subway under the junction open to facilitate access to the fields on the other side of the junction.** A circa 80m long ramp would be required after any bridge constructed over the subway, which would further restrict the potential locations for tunnel shafts and significantly extend the construction programme.

- 3.10.27 Due to distance from Budds Farm WTW, a tunnel is envisaged. This would be approximately 900m in length. If delivered using the same TBM this would have an additional 3 to 5 month impact on programme. However, there would be a reduction in the tunnel lengths to Havant Thicket Reservoir and towards Otterbourne WSW (by approximately 300m and 100m respectively) to reduce the programme by approximately 2 months therefore the tunnelling impact on programme would be approximately an additional 1 to 3 months.
- 3.10.28 Due to uncertainties around access and the significant timescales likely to be involved the professional judgement is that the parcel is not considered viable in constructability terms.

3.11 WRP_146

Parcel Location and Description

- 3.11.1 WRP_146 is shown on Figure 3.11 below and is 4.2 ha. The parcel is located within grassland paddocks and bordered to the north and west by the Hermitage Stream and its floodplain, to the south by the A27 and warehouse units, and to the east by further warehouse units and a residential area.



Figure 3.11: Location of WRP_146

Environmental Considerations

- 3.11.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the following environmental topics were considered:
- Air Quality;
 - Noise and Vibration;
 - Biodiversity;
 - Soil Quality and Agricultural Land; and

■ Groundwater.

- 3.11.3 The area has been identified as coastal and floodplain grazing marsh HPI, with deciduous woodland present 43m on the southern aspect of the A27. Where possible, these habitats should be avoided, unless the benefits of the development clearly outweigh the harm (Paragraph 4.3.19 of the NPSWRI). The project would seek to **avoid works within the area of identified coastal and floodplain grazing marsh**, as development of a WRP has the potential to adversely impacted the HPI through direct loss. There are numerous records of protected species, including bats, birds, reptiles, mammals, and plants that could be impacted. Further protected species surveys would be required to determine the potential for significant adverse impacts.
- 3.11.4 The boundaries of the parcel comprise of the Hermitage Stream to the north and west. There is some **Flood Zone 3 (although minor in northern corner) and a culverted river running through the parcel**. The northern part of the parcel encroaches on the SPZ 1 and therefore an assessment of the **potential groundwater impacts is required as a result of the potential for adverse effects to groundwater intended for human consumption** (Paragraph 4.15.5 of the NPSWRI). Further assessment is therefore required.
- 3.11.5 There are **sensitive receptors in close proximity to the parcel, including a school and residential properties**. Whilst many of the potential impacts could be reduced through standard control measures, contained within a management plan to control potential construction impacts, such as dust and emissions and noise and vibration, there are a number of environmental impacts that would need to be satisfactorily overcome for the parcel to be considered suitable.

Planning Considerations

- 3.11.6 The main planning considerations for WRP_146 are:

Land Use and Socio-Economic

- 3.11.7 **Existing and future development:** The **eastern part of the parcel is allocated in the HBC Local Plan for employment use, with up to 12,000m² of floorspace**. The parcel is within approximately 20 m from residential properties to the north east. An outline planning application (reference: APP/22/00669) for residential was validated on 19 August 2022 and has not yet been determined. There is also a Rights of Way path through the parcel. A WRP in this location would likely give rise to impacts on nearby residential receptors.
- 3.11.8 **Mineral safeguarding:** A very **small portion of WRP_146 is designated as a safeguarded mineral resources site** under the Hampshire County Council Minerals and Waste Plan 2013 policy map. In accordance with of the NPSWRI (paragraph 4.10.16), an assessment of impacts to the mineral safeguarded area may need to be undertaken depending on the location of the WRP to determine if the loss would be acceptable. This would only be necessary if the WRP is located at this part of the parcel.

Biodiversity

- 3.11.9 There are no national or international designations on the parcel. The parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders'. Policy DM23 would then require an assessment to be undertaken that demonstrates significant harm to biodiversity could be avoided.

Landscape and Visual

- 3.11.10 The parcel is located outside of the National Park and not within or close to an AONB.
- 3.11.11 Paragraph 4.9.17 of the NPSWRI requires the Secretary of State to "*judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the development.*" The parcel is located near to existing residential

properties to the north and it is likely that there would be significant landscape and visual impacts on the local residents, which would weigh against the benefits of the proposed development.

3.11.12 In terms of local policy, the western part of the parcel is designated as an undeveloped gap by Policy AL2 of the HBC Local Plan. While these impacts may not be reasons for refusing the proposed development, a WRP at this location may lead to landscape and visual impacts.

Flood Risk

3.11.13 There is a small sections of Flood Zone 3 close to the northern boundary, and as such the sequential test would be required as set out in the NPSWRI and the NPPF. Parts of the parcel are located outside of areas of high flood risk, which would be sequentially preferable. Annex 3 of the NPPF classifies sewage treatment, transmission and water transfer infrastructure as either less vulnerable or water compatible, meaning that if those parts of the parcel with lower flood risk were not available, the exception test would need to be satisfied to demonstrate that the development will be safe and not increase flood risk elsewhere.

Constructability and Engineering Considerations

3.11.14 The parcel is L-shaped and generally level. There is a SPZ 1 zone in the northern section of the parcel, any works would need the approval of the EA and Portsmouth Water (PW). (PW may restrict development beyond the precise SPZ1 boundary given the potential for adverse effects to groundwater intended for human consumption). Any structures with deep foundations would need to be positioned as far away from the SPZ 1 as possible and need the approval of PW and the EA.

3.11.15 The parcel is approximately 4.15ha, which is sufficient for the WRP. However, without diverting the major services including a culvert, there would only be less 3.2ha available.

3.11.16 Services crossing the parcel are:

- Overhead 33Kv power cable cuts across the NE corner;
- 3no. Southern Water sewer runs across the Eastern section;
- PW 15" main runs across the Eastern section; and
- Culverted (Environment Agency managed) flood relief branch for the Hermitage Stream runs from northeast to southwest of the parcel. This would be difficult to divert sufficiently so as to not reduce the overall developable area. The Environment Agency has also objected to the pending application (APP/22/00669) and have indicated they would not grant a flood risk activity permit for this application as submitted.

3.11.17 Approximately 25% of the parcel would be sterilised if the overhead lines are not diverted. If the sewers and water main were not diverted, they would constrain options for the layout of plant, buildings, infrastructure etc within the parcel. The culverted watercourse would also restrict potential use of approximately 20% of the parcel. Further investigations would be needed to assess the feasibility of diverting the culvert and the timescales involved, which would be in years. It is also possible that the only diversion route for the culvert would still have to follow a similar hydraulic profile to functionally operate as it is designed to do so, resulting in the reduction to the available area within the parcel. All diversions would need to be completed before works commence.

3.11.18 Access into the parcel is currently off Meyrick Road but as this is residential and quite narrow and would require widening significantly, a new entrance from Ridgway or Marples Way to the south may be preferable. Access to the parcel would need to be constructed prior to works commencing and all enabling works would need to be carried out prior to works commencing.

3.11.19 Due to the distance from Budds Farm WTW a tunnel is envisaged. This would be approximately 700m in length. Delivered using the same TBM this would have a 3 to 5 month impact on programme. The tunnel lengths to Havant Thicket Reservoir and Otterbourne WSW would reduce and increase respectively so there would be no overall impact to the programme. Further analysis

would be required to establish suitable locations for tunnel shafts (taking account of SPZ offset and high risk flood zone) and how these may constrain the site layout and the programme.

- 3.11.20 Due to the timescale constraints and uncertainties around the culvert and the potential need for diversion, the likely constraint of SPZ, and the constraints of other services, the professional judgement is that the parcel would be below the minimum size and is therefore not viable in constructability terms.

3.12 WRP_149

Parcel Location and Description

- 3.12.1 WRP_149 is shown in Figure 3.12 below and is 6.1 ha. The parcel is within open green space which is used by Havant Rugby Football Club. It should be noted that this space is not allocated by HBC as local green space. The parcel is directly adjacent to the St Thomas More's Catholic Primary School separated by a strip of vegetation and is bordered to the north, east and west by residential areas.



Figure 3.12: Location of WRP_149

Environmental Considerations

- 3.12.2 As set out at Paragraph 2.3.4 of this report, the potential constraints of each parcel were already known, therefore, this review is to provide a more detailed understanding of the potential suitability of the parcel and the risks and constraints in policy terms. Therefore, the following environmental topics were considered:

- Air Quality;
- Noise and Vibration; and
- Socio-economics.

- 3.12.3 The properties surrounding the parcel are located in a residential area roughly in the centre of Bedhampton. Residual and background noise levels in the area are likely to be low which increases the sensitivity of the properties to potential noise impacts. The properties are also in very close

proximity to the parcel (less than 15m). Mitigation such as acoustic barriers /shed around the main work areas and enclosures of equipment during the construction and operational phases is likely to reduce airborne noise emissions to acceptable levels. It is recommended that standard control measures are required to control potential construction impacts, such as dust and emissions and noise and vibration.

- 3.12.4 The loss of any of this green space is likely to lead to significant adverse impacts.
- 3.12.5 The parcel is located within a SPZ 1c and therefore an assessment of the potential groundwater impacts is required as a result of the potential for adverse effects to groundwater intended for human consumption (Paragraph 4.15.5 of the NPSWRI). Further assessment is therefore required.

Planning Considerations

- 3.12.6 The main planning considerations for WRP parcel 149 are:

Land Use

- 3.12.7 **Existing use:** The parcel is currently used for the Havant Rugby Football Club and is bordered by residential development and two schools in an urban area. A WRP at this parcel would lead to the loss of this sports facility and would have negative impacts on the nearby residential uses and conflict with paragraph 4.11.12 of the NPSWRI.
- 3.12.8 **Open Space:** WRP_149 is not an allocated green space in the HBC Local Plan, however, it is an area of open space, used for sport and recreation. The loss of open space and a sport and leisure facility would not be consistent with paragraphs 4.10.10 and 4.10.23 of the NPSWRI which notes that the Secretary of State should not grant development on this parcel unless it can be demonstrated the land is no longer needed or the land would be replaced elsewhere. It is unlikely the parcel could be readily relocated elsewhere, and therefore not consistent with the NPSWRI.

Biodiversity

- 3.12.9 There are no national or international designations on the parcel.

Landscape and Visual

- 3.12.10 The parcel is located outside of the National Park and not within an AONB.
- 3.12.11 Paragraph 4.9.17 of the NPSWRI requires the Secretary of State to “*judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the development.*” The parcel is located near to existing residential properties and it is likely that there would be significant landscape and visual impacts on the local residents, which would weigh against the benefits of the proposed development.

Flood Risk

- 3.12.12 The parcel is not located in an area of high flood risk.

Constructability and Engineering Considerations

- 3.12.13 The parcel is located in an area of open land and public open space. A SPZ 1c covers this parcel so any works would need to have the approval of the EA and PW given the potential for adverse impacts to groundwater intended for human consumption.
- 3.12.14 There may be sufficient room for WRP, HLPS and tunnelling to be constructed in parallel, subject to confirmation of plant footprint and screening requirements as well as space for PW pipelines to Havant Thicket Reservoir. There may be a requirement for additional buffer areas or acoustic sheds to reduce significant impacts to nearby residents from construction works, including 24-hour tunnelling activities.

3.12.15 Services crossing the parcel are:

- PW's Bedhampton to Havant Thicket Reservoir pipeline is proposed across this parcel which would split the parcel in two with a permanent standoff zone through the middle unless rerouted.
- Existing power supplies would need to be surveyed and diverted.

3.12.16 A new access from Hooks Farm Way is likely to be needed. This is a narrow road and would require changes to junctions and widening to allow two-way traffic. Suitably widening would result in loss of footpaths and potential encroachment on to curtilages. There would be a programme impact.



3.12.17 Due to distance from Budds Farm WTW a tunnel is envisaged. This would be approximately 1700m in length, however, as this parcel is located on the best engineering solution pipeline route featured in the Summer 2022 public consultation route to Havant Thicket Reservoir, this would only increase the tunnelling by 600m over and above that route. The tunnel length from Havant Thicket Reservoir to Otterbourne WSW could increase by circa 500m so overall circa 1100m more tunnelling would be required, extending the programme by approximately 6 months.




3.13 Summary of Continual Review Outcomes

3.13.1 Table 3.2 below provides a summary of the environmental, planning, and construction and engineering outcomes contained within Section 3 for WRP parcels 58, 68, 70, 71, 72, 73, 74, 75, 76, 146, and 149. A RAG risk rating as identified in Tables 2.2-2.4 has been applied to the assessment outcomes.




3.13.2 **Parcels which were identified as having a red RAG rating for either environmental, planning, or construction and engineering did not progress to the next stage** (Section 7 Cost Review). Further professional judgement was also applied to parcels with a number of moderate risks (amber RAG ratings). **Parcels 58, 68, 70, 73, 74, 75 and 76 were not progressed further as they were considered to have potential for significant adverse impacts that are likely to not be capable of being mitigated to an acceptable level** and would likely be in direct conflict with policy in the NPSWRI or would likely lead to a significant delay to the project. Further information on the decision-making process is provided in Section 6.

Table 3.2: Environmental, Planning, Constructability and Engineering Qualitative Review Outcomes Summary Table

Parcel	Image	Environment	Planning	Constructability and Engineering
WRP_58 7.8 ha		<ul style="list-style-type: none"> Loss/significant impact to Fields off Havant Road SINC Potential Landscape visual impacts on the AONB Air quality and noise impacts on nearby residential receptors. Loss of Candidate Site area designated in the Solent Waders and Brent Goose Strategy which is functionally linked to the SPA 	<ul style="list-style-type: none"> Impacts on nearby residential properties. Landscape and visual impacts, including on the Chichester AONB. 	<ul style="list-style-type: none"> Level working platforms would need to be formed along with access to each level platform, which significantly reduce the developable area. Diversion of services likely to be challenging for this location. Acoustic shed may be required to mitigate construction noise. Potential 6-8 month impact on programme enabling works. Potential 12-18 month impact on programme due additional tunnel length.
WRP_68 5.6 ha		<ul style="list-style-type: none"> Close proximity to SPA, Ramsar and SAC. Loss/significant impact to Secondary Support Area designated in the Solent Waders and Brent Goose Strategy which is functionally linked to the SPA. Within 20 m of SSSI supporting internationally important birds Loss of HPI unimproved permanent pasture Loss/significant impact to Southmoor – Big Field SINC Subject to flooding at high tide now considered saltmarsh which is a land use to avoid (drawing rules) Flood Zone 2 and 3. 	<ul style="list-style-type: none"> Impact on ecology. Flood risk, accepting that the WRP is a use and therefore could be consistent with the NPS. 	<ul style="list-style-type: none"> Services would reduce the developable area by approximately 20% if not diverted. Additional 1km for each tunnel Parcel could require raising up to avoid flooding (at high tide), and accommodate potential flood defences. Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events. Potential 4-6 month impact on programme.

Parcel	Image	Environment	Planning	Constructability and Engineering
WRP_70 3.7 ha		<ul style="list-style-type: none"> Close proximity to AONB. Loss/significant impact to Secondary Support Area designated in the Solent Waders and Brent Goose Strategy which is functionally linked to the SPA. Close proximity to residential properties. 	<ul style="list-style-type: none"> Potential impacts on nearby residential receptors. Potential landscape and visual impact, including on the Chichester Harbour AONB Loss of ecological habitat. 	<ul style="list-style-type: none"> Services would reduce developable area by approximately 30% if not diverted. Acoustic shed may be required to mitigate construction noise. Additional 1.5km for each tunnel Potential 6- 8 month impact on programme.
WRP_71 10.6 ha		<ul style="list-style-type: none"> Potential sources of contamination associated with landfill (made ground) (west part of parcel). 	<ul style="list-style-type: none"> Partially allocated for employment development in the HBC Local Plan. Likely loss of existing jobs / displacement of businesses. 	<ul style="list-style-type: none"> Dissected by Harts Farm Way Significant diversions of current utilities required. Demolition and remediation. required pre-commencement. Additional 1-2 month to the programme due to tunnelling. west towards Otterbourne WSW. Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events.
WRP_72 9.3 ha		<ul style="list-style-type: none"> The parcel is within a historic landfill. Deciduous woodland priority habitat at the northeast corner which is anticipated to be retained. Loss/significant impact to a Low Use Site designated in the Solent Waders and Brent Goose Strategy which is functionally linked to the SPA. Environmental buffer potentially needed to avoid potential impact to Core Area south west of parcel which is functionally linked with the SPA. 	<ul style="list-style-type: none"> A WRP is a B2 use class. The parcel is allocated for employment development in the HBC Local Plan, consistent with the B2 use. Assumed that potential impacts on ecology could be mitigated in a comparable way to that set out in the outline planning permission. 	<ul style="list-style-type: none"> Overhead line crossing the parcel but not expected to be an issue for the development and operation of the development. Substantial cut and fill exercise to level site.

Parcel	Image	Environment	Planning	Constructability and Engineering
WRP_73 5.3 ha		<ul style="list-style-type: none"> ▪ Within approximately 10m of an SPA, Ramsar and SAC. ▪ Loss/significant impact to a Candidate Site designated in the Solent Waders and Brent Goose Strategy which is functionally linked to the SPA. ▪ Flood Zone 2 and 3. ▪ Within 10 m of a SSSI supporting internationally important birds. ▪ Belt of deciduous woodland priority habitat around the parcel. ▪ The parcel is within a historic landfill. 	<ul style="list-style-type: none"> ▪ Loss of ecological habitat / ecological impacts. ▪ Loss of open space. ▪ Assumes that the WRP avoids areas of high flood risk. 	<ul style="list-style-type: none"> ▪ Substantial cut and fill exercise. ▪ Level working platforms would need to be formed reducing developable area (below 3.2 ha). ▪ Programme implications due to construction sequencing. ▪ Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events. ▪ Potential 8 month impact on programme.
WRP_74 5.4 ha		<ul style="list-style-type: none"> ▪ Within approximately 10m of an SPA Ramsar and SAC. ▪ Loss/significant impact to Secondary Support Area designated in the Solent Waders and Brent Goose Strategy which is functionally linked to the SPA. ▪ Within 10 m of a SSSI supporting internationally important birds. ▪ The parcel is within a historic landfill. ▪ Flood Zone 2 and 3. 	<ul style="list-style-type: none"> ▪ Potential for landscape and visual impacts. ▪ Loss of open space. ▪ Loss of ecological habitat / ecological impacts. ▪ Assumes that the WRP avoids areas at high flood risk. 	<ul style="list-style-type: none"> ▪ Substantial cut and fill exercise. ▪ Level working platforms would need to be formed, which also reduce the developable area. ▪ Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events. ▪ Potential 2-3 month impact on programme.
WRP_75 5.3 ha		<ul style="list-style-type: none"> ▪ Within approximately 10m of an SPA and Ramsar and SAC. ▪ Loss/significant impact to Core Area designated in the Solent Waders and Brent Goose Strategy which is functionally linked to the SPA. ▪ Within 10 m of a SSSI supporting internationally important birds. ▪ The parcel is within a historic landfill. ▪ Loss of coastal floodplain grazing marsh and deciduous woodland HPI ▪ Flood Zone 2 and 3. 	<ul style="list-style-type: none"> ▪ Potential for landscape and visual impacts. ▪ Loss of open space. ▪ Loss of ecological habitat / ecological impacts. ▪ Assumes that the WRP avoids areas at high flood risk. 	<ul style="list-style-type: none"> ▪ Substantial cut and fill exercise. ▪ Level working platforms would need to be formed. ▪ Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events. ▪ Potential 4-6 month impact on programme.

Parcel	Image	Environment	Planning	Constructability and Engineering
WRP_76 5.5 ha		<ul style="list-style-type: none"> Potential impact on TPO trees. Potential sources of contamination have been identified within the parcel. North of the parcel is a SPZ potential impact to groundwater quality. 	<ul style="list-style-type: none"> No significant conflict with planning policy. 	<ul style="list-style-type: none"> Access to the parcel is constrained and if a new access could be developed, it would involve a large portion of the parcel, reducing the developable area (below 3.2ha). Buffer zone for access road and railway line also reduces developable area. Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events. Potential 2 year impact on programme.
WRP_14 6 4.2 ha		<ul style="list-style-type: none"> Northern part of parcel within SPZ 1 potential impact to groundwater quality. Within floodplain grazing marsh HPI (survey to confirm). Flood Zone 3. 	<ul style="list-style-type: none"> Visual impact on nearby residential properties. Amenity impacts on nearby residential properties. Partially allocated for employment development in the HBC Local Plan. Potential conflict to the outline planning application for housing (pending). 	<ul style="list-style-type: none"> SPZ 1 overlaps northern section and structures with deep foundations would need to be positioned away from the SPZ 1. Services would reduce developable area to less than 3ha if not diverted. Feasibility to divert the culvert and create space is uncertain. Diversions would cause a significant impact on programme.
WRP_14 9 6.1 ha		<ul style="list-style-type: none"> Potential air quality and noise impacts as the parcel is located within a heavily populated area and is bordered by residential properties and a school. Parcel is located within a SPZ 1c potential impact to groundwater quality. 	<ul style="list-style-type: none"> Loss of sports facility and open space. Impact on nearby residential properties. 	<ul style="list-style-type: none"> New access potentially required. SPZ 1c covers this area and structures with deep foundations would need to be positioned away from the SPZ 1c. Significant impact on residential properties and requirements to alter junctions to facilitate construction traffic. Potential requirement for acoustic shed. Potential 6 month impact on programme.



3.14 Havant Borough Council Feedback on Continual Review Initial Outcomes

3.14.1 Following the initial outcomes of Stage 5 of the Continual Review assessment, a meeting was held between SW and representatives from HBC's planning and asset management team. The purpose of this meeting was to present the methodology and continual review assessment and initial outcomes and provide an opportunity for HBC to provide feedback on the methodology and the assessment work. The following sets out the specific comments on parcels provided by HBC:

- WRP_70 - HBC stated that the current application on this parcel (APP/21/00647) is currently stalled pending submission of further information by the applicant, however this will be one of the sites that HBC screen and assess for inclusion as a residential allocation in its new local plan. The HBC Local Development Scheme has scheduled the new local plan to be submitted to the Secretary of State Quarter 2 of 2024.
- WRP_71 - The majority of this parcel is owned by HBC and accounts for a large portion of HBC's rental income, meaning HBC is unlikely to want to dispose of the site.
- WRP_72 – HBC raised concern regarding the potential impact on the delivery of a future development at this parcel that was recently consented (planning application - APP/21/00189).
- WRP_73, WRP_74 and WRP_75 - HBC stated that these parcels are highly likely to be safeguarded in the new local plan for use as environmental mitigation as a bird refuge.
- WRP_146 - HBC stated that the employment development anticipated at this parcel is not likely to come forward and is expected to be allocated for housing in the new local plan. An outline application for 140 dwellings (APP/22/00669) has been submitted on the parcel and HBC previously raised concerns relating to the potential flood risk. The applicant (of planning application (APP/22/00669)) has undertaken further modelling to determine the future flood extent and this has been accepted by HBC. HBC suggested comparing the area not at risk as set out by the modelling with the required land take for the WRP.
- WRP_149 - HBC consider this parcel to be unsuitable as it would lead to the loss of the Havant Rugby Football Club.

4 Stage 6: New and Amended Parcels Review Methodology

4.1 Evolution of Stage 6 and Approach

- 4.1.1 SW has engaged with stakeholders throughout the site selection process. Following the Summer 2022 public consultation on the Project, HBC provided feedback that an office building located south of Penner Road, (150m east of Budds Farm WTW), which is currently owned and occupied by SSE, is expected to be vacated. A parcel was not previously identified at this location as SSE is a utility company and statutory undertaker and the parcel identification criteria did not include for such land uses, as set out in Table 4.1 (further information is provided within Gate 2 Submission: Supporting Technical Report Annex 5: Options Appraisal Process – Future Needs Update (December 2021)). The SSE site has also been highlighted by WRP 72 site land agents as being potentially available.

Table 4.1: WRP Parcel identification criteria (drawing rules)

Element	Details
Land Use	Avoidance of the following area: <ul style="list-style-type: none"> ▪ Densely populated residential areas, private residences, care homes, hospitals, schools, universities, places of worship, burial grounds, holiday parks, retail parks and leisure parks; ▪ Key transport infrastructure; and ▪ Key utilities
Land Conditions	Avoidance of the following areas: <ul style="list-style-type: none"> ▪ Marsh; ▪ Mudflat; ▪ Cliff face; and ▪ Open water
Site Size	3.2 ha or greater

- 4.1.2 As a result of the notification by HBC that SSE is vacating its site south of Penner Road, SW considered it would be appropriate to review whether other similar sites may become available to develop the WRP. The identification of these new parcels and an assessment of their suitability formed Stage 6, which is outlined in this section.
- 4.1.3 Stage 6 of the continual review assessed the suitability of the new parcels from an environmental, planning, construction and engineering perspective.
- 4.1.4 Stage 6 also reviewed existing WRP parcels that were considered further in Stage 5 to determine whether any of these could be amended to both improve their suitability for the proposed WRP and ensure consistency with the original parcel drawing rules.

4.2 Stage 6 Steps and Methodology

Check and Review to Consider Amending Parcels

- 4.2.1 This step involved identifying whether any of the existing parcels considered as part of Stage 0-4 of the WRP site selection shown in Figure 3.1 could be amended to improve their suitability for the proposed WRP. This consisted of a desk-based review of the existing parcels using GIS.

Identify New Parcels

- 4.2.2 To ensure drawing rule used at Stage 0 and Stage 1 of the WRP site selection as set out in SW’s Gate 2 submission were applied consistently, new parcels were drawn within the 1.5 km search area from

Budds Farm WTW, but outside of the area marked by the coastal resilience line that shows projected future rates of coastal change and zones susceptible to sea flooding. The criteria for identifying WRP parcels is shown in Table 4.1

4.2.3 When drawing the parcels, no maximum parcel size was used and therefore the size of the parcels was unrestricted in terms of maximum size.

Qualitative Review of Parcels

4.2.4 Once parcels had been amended and new parcels identified, a qualitative review was undertaken considering environmental, planning, constructability and engineering constraints. This review applied the Stage 4 evaluation used in the WRP site selection shown in Table 4.2 and was supplemented by the additional criteria set out in Table 4.3, which were considered when reviewing parcels at Stage 5 to ensure a consistent review process.

4.2.5 A qualitative review was undertaken to identify potential constraints and mitigation. This is considered a consistent approach used at Stage 4 and 5 of the site selection process. The high-level assessments were undertaken by the Project’s Planning and Engineering Team and used data stored within MOATA. The team are subject matter experts in their fields using experience and judgement to provide a clear and robust review. A summary of the qualitative reviews is presented in Section 5 below, identifying the main considerations for the parcels.

Table 4.2: WRP Site Selection Stage 4 Criteria used for the Qualitative Review of New and Amended Parcels

Stage 4 - Criteria	Sub Criteria
Biodiversity and Nature Conservation Terrestrial – Habitats Regulations Assessment (HRA)	Impact on SACs, SPAs, Ramsar and all potential, possible and candidate sites Impact on functionally linked habitat
Biodiversity and Nature Conservation Terrestrial	Impact on nationally designated sites Impact on priority habitats Impact on ancient woodland and veteran trees
Biodiversity and Nature Conservation – HRA (Marine)	Impact on SACs, SPAs, Ramsar and all potential, possible and candidate sites Impact on functionally linked habitat
Biodiversity and Nature Conservation – Marine	Impacts on nationally designated sites Impact on priority habitats
Historic Environment – Terrestrial	Impact on nationally and regionally important assets Unknown archaeology (impact on areas of archaeological potential)
Historic Environment – Marine	Impact on Nationally and regionally important assets Unknown archaeology (impact on areas of archaeological potential)

Stage 4 - Criteria	Sub Criteria
Landscape / Seascape and Townscape and Visual Amenity	Impact on nationally and regionally important sites Impact on visual amenity
Water Quality and Resources	Impact on marine water quality Impact on terrestrial water quality Impact on watercourse geomorphology and hydrology Impact on groundwater resources
Flood Risk	Impact on flood risk Impact on flood defenses
Interface with Future Development and Planning	Risks associated with existing/future Nationally Significant Infrastructure Project (NSIP) Risks associated with 'other' development Risks associated with compromising future marine development Development Plan risk
Land use	Impact on special categories of land Land take impact
Green Belt	Impact on Green Belt

Table 4.3: Additional Criteria for the Qualitative Review of New and Amended Parcels

Additional Criteria	Sub Criteria
Air Quality and Emissions	Impact to residential or community facility receptors from construction and operational related activities.
Noise and Vibration	Impact to sensitive receptors from construction and operational related activities
Ground conditions	Impacts on soil resource Risk of mobilisation of contaminants
Agriculture and land use	Impact to agricultural land
Socio-economic impact	Impacts on Public Rights of Way and recreational facilities Impact on community facilities
Traffic and Transport	Impact on road and rail network
Construction and Engineering	Ground conditions risks Available developable area Existing services within the parcel

Additional Criteria	Sub Criteria
	Enabling works required Access suitability Programme implications

5 Stage 6: New and Amended Parcels Outcomes

5.1 Identification of New and Amended Parcels

5.1.1 In line with the methodology and the engagement with HBC set out in Section 4, five new and amended parcels were identified to be considered as part of Stage 6 of the site selection process. These are shown in Figure 7.1 outlined in orange. The new and amended parcels are as follows:

5.1.2 Amended Parcels:

- WRP_153
- WRP_154
- WRP_155

5.1.3 New Parcels:

- WRP_157
- WRP_158

5.1.4 Previously (Stage 1), the feasibility of locating the WRP at Budds Farm WTW, outlined in blue in Figure 7.1, was reviewed independently to the WRP site selection process. However, an additional review was undertaken within Stage 6 to check the earlier conclusions and understand whether there is suitable land available within this parcel or whether Budds Farm WTW could be reconfigured to accommodate the WRP.

5.2 WRP_153

Parcel Location and Description

- 5.2.1 This parcel consists of the former Parcel WRP_146 and incorporates the adjacent existing employment areas to the south and east.
- 5.2.2 Parcel WRP_153 is located north of the A27 and east of the Hermitage Stream and its floodplain. The west of the parcel is made up of grassland paddocks and the east and south of the parcel is made up of existing employment units and associated access roads and hardstanding.



Figure 5.2: Location of WRP_153

Environment Considerations

- 5.2.3 The area has been identified as coastal and floodplain grazing marsh HPI, with deciduous woodland present 43m on the southern aspect of the A27. Where possible, these habitats should be avoided, unless the benefits of the development clearly outweigh the harm (Paragraph 4.3.19 of the NPSWRI). There are numerous records of protected species, including bats, birds, reptiles, mammals, and plants that could be impacted. Further protected species surveys would be required to determine the potential for significant adverse impacts.
- 5.2.4 The boundaries of the parcel comprise of the Hermitage Stream to the north and west. The northern part of the parcel encroaches on the SPZ 1c and therefore an assessment of the potential groundwater impacts is required as a result of the potential for adverse effects to groundwater intended for human consumption (Paragraph 4.15.5 of the NPSWRI). Further assessment would therefore be required.
- 5.2.5 There are sensitive receptors in close proximity to the parcel (a school and residential properties). Whilst many of the potential impacts could be reduced through standard control measures, contained within a management plan to control potential construction impacts, such as dust and emissions and noise and vibration, there are a number of environmental impacts that would need to be satisfactorily overcome for the parcel to be considered suitable.

Planning Considerations

5.2.6 The main planning considerations for WRP_153 are:

Land Use

5.2.7 **Existing and future development:** The eastern part of the parcel is in industrial use, known as the Maples Way Industrial Estate, and is close to a residential area. The parcel is allocated for employment use in the HBC Local Plan, which could accommodate 12,000 sqm of floorspace. The parcel is not identified for housing, but an outline planning application (reference: APP/22/00669) for 140 residential dwellings was submitted in 2022 but has not yet been determined. A WRP in this location has the potential to impact nearby residents.

5.2.8 **Mineral safeguarding:** A very small part of WRP_153 is designated as a safeguarded mineral resources site under the Hampshire County Council Minerals and Waste Plan 2013 policy map. In accordance with the NPSWRI (Paragraph 4.10.16), an assessment of impacts to the mineral safeguarded area may need to be undertaken depending on the location of the WRP to determine if the loss would be acceptable.

Biodiversity

5.2.9 There are no national or international designations on the parcel. The parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders'. Policy DM23 would then require an assessment to be undertaken that demonstrates significant harm to biodiversity could be avoided.

Landscape and Visual

5.2.10 The parcel is located outside of the National Park and not within or close to the Chichester Harbour AONB.

5.2.11 Paragraph 4.9.17 of the NPSWRI requires the Secretary of State to "*judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the development*". The parcel is located near to existing residential properties to the north and it is likely that there would be significant landscape and visual impacts on the local residents, which would weigh against the benefits of the proposed development.

5.2.12 In terms of local policy, the western part of the parcel is designated as an undeveloped gap by Policy AL2 of the HBC Local Plan. While these impacts may not be reasons for refusing the proposed development, a WRP at this location may lead to landscape and visual impacts.

Historic Environment

5.2.13 The far eastern small section of the parcel is within approximately 10 m of the Brockhampton Conservation Area. Paragraph 4.8.15 of the NPSWRI would be engaged which requires "*In determining applications, the Secretary of State will identify and assess the particular significance of any heritage asset that may be affected by the proposed development (including affecting the setting of a heritage asset), taking account of the available evidence and any necessary expertise.*"

5.2.14 Impact to the conservation area would depend on the siting and location of the WRP at the parcel and further assessment of the potential impacts would be required.

Flood Risk

5.2.15 There is a small section of Flood Zone 3 close to the northern boundary, and as such the sequential test would be required as set out in the NPSWRI and the NPPF. Parts of the parcel are located outside of areas of high flood risk, which would be sequentially preferable. Annex 3 of the NPPF classifies sewage treatment, transmission and water transfer infrastructure as either less vulnerable or water compatible, meaning that if those parts of the parcel with lower flood risk were not available,

the exception test would need to be passed to demonstrate that the development will be safe and not increase flood risk elsewhere.

Constructability and Engineering Considerations

- 5.2.16 The parcel is a generally flat site across the river from PW's Bedhampton springs site but includes a number of constraints.
- 5.2.17 The layout of the parcel may also be constrained by any buffer areas or acoustic sheds if needed to reduce significant impacts to nearby residents from construction works, including 24-hour tunnelling activities.
- 5.2.18 It may be possible for the parcel to accommodate the WRP, tunnelling and HLPS, if services are diverted, but the layout would be constrained by the culvert and the SPZ.
- 5.2.19 Services crossing the parcel:
- Culverted branch or relief line for the Hermitage Stream bisects the undeveloped area from northeast to southwest. This would be difficult to divert sufficiently so as to not reduce the overall developable area. The Environment Agency have also objected to the pending application on the parcel which indicates that development would not be approved in this area;
 - 3no. Southern Water sewers and PW 15" main run across the Eastern section;
 - There is a mix of industrial and commercial development. Services are unknown without further enquiry/investigation; and
 - Overhead 33kV power cable cuts across the parcel and would need to be diverted.
- 5.2.20 Significant service diversions, ground investigations, detailed surveys and clearance of developed areas would be required. If some services could not be diverted, they would constrain options for the layout of plant, buildings, infrastructure etc within the parcel.
- 5.2.21 The undeveloped portion of the parcel is subject to the same constraints noted above for Parcel 146 with respect to the SPZ and the culverted watercourse. PW or the EA may require approvals for works beyond the precise SPZ1 boundary if they present a risk to groundwater. Subject to details of underground services in the developed area and the space created there, it may be possible to retain the culverted watercourse in its current location.
- 5.2.22 Access to the parcel would be via Ridgway or Marples Way. All enabling works would need to be carried out prior to works commencing, including diversion of overhead cables, which could add an additional 6 to 12 months on the programme, plus clearance of the developed areas.
- 5.2.23 Due to distance from Budds Farm WTW a tunnel or pipe jack is envisaged for the connection into and out of Budds Farm WTW. This would be approximately 750m in length. Delivered using the same TBM, this would have a 3 to 5 month impact on the programme. The tunnel lengths to Havant Thicket Reservoir and towards Otterbourne WSW would reduce and increase respectively compared with the best engineering solution pipeline route featured in the Summer 2022 public consultation, with no overall impact to construction programme likely based on the information available at this stage. Further analysis would be required to establish suitable locations for tunnel shafts (taking account of SPZ offset and the culvert) and how these may constrain the site layout and the programme.

5.3 WRP_154

Parcel Location and Description

- 5.3.1 This parcel is an amendment to WRP_71 to ensure the drawing rules have been applied consistently. WRP_71 spanned across Harts Farm Way, and as set out in Table 4.1 in Section 4,

parcels should not be identified on key transport infrastructure. Harts Farm Way could be considered as key transport infrastructure given it provides links for the industrial estate around Southmoor Lane and the A27. Therefore WRP_154 was drawn avoiding Harts Farm Way and was enlarged to cover employment developments that were not previously included.

- 5.3.2 WRP_154 is located north of Harts Farm Way, south of the A27 and east of the Hermitage Stream. The parcel is made up of existing development, including the Basepoint Business Centre, the Havant Household Waste Recycling Centre, other warehouse and employment buildings, and associated access roads and areas of hardstanding.



Figure 5.3: Location of WRP_154

Environment Considerations

- 5.3.3 The parcel is within 150m of Chichester and Langstone Harbours Ramsar, SPA and Solent Maritime SAC to the south, which is afforded the highest level of protection within the NPSWRI (paragraph 4.3.13). Due to the proximity to these sites a HRA would be required. In addition, Langstone Harbour SSSI is also located 150m to the south. Further assessment would be required to understand the impacts on the SSSI and accordance with Paragraph 4.3.15 of the NPSWRI. Part of the parcel includes a Candidate Site (H09) (northwest corner) for the internationally important Brent Geese and Solent Wader birds as set out in the Solent Waders and Brent Goose Strategy, which is functionally linked habitat for Chichester and Langstone Harbours SPA. However, the current assumption is that this would be avoided as the parcel is large enough to accommodate the projects requirements without encroaching into the Candidate Site area, which will be kept under review.
- 5.3.4 Due to the presence of the Brockhampton Stream, it is assumed that the pipeline required to be constructed between Budds Farm WTW and the parcel would need to be via a trenchless technique. It is possible that migratory fish may utilise Brockhampton Stream for spawning purposes and underwater noise and vibration generated from such an activity could act as a barrier to fish migration. Additionally, there may be requirements to undertake underwater noise modelling to justify any decisions made in the assessment process.

- 5.3.5 Landfill materials in the west part of the parcel are understood to be made ground and could be contaminated. It is unlikely that the soils from the landfilled area can be re-used through conventional means i.e. using mechanisms such as the CL:AIRE DoWCOP, and as such a bespoke permit may be required from the Environment Agency (EA) to recover the soils for reuse so that they are no longer a 'waste'. Otherwise, the potentially contaminated soils would have to be disposed of if not suitable for reuse, incurring additional costs to the project and permitting requirements. This should be considered as part of the reporting during the Desk Top Study production and/or subsequent GQRA production and further surveys and assessments would be required. The parcel condition would need to be investigated in further detail at the next stage.

Planning Considerations

- 5.3.6 The main planning considerations for WRP_154 are:

Land Use and Socio-Economic

- 5.3.7 **Existing use:** The parcel is in employment use and includes Harts Farm Way Industrial Estate and the Broadmarsh Business and Innovation Centre. The WRP would likely lead to the loss of jobs or displacement of businesses, which would need to be assessed in line with the NPSWRI (paragraph 4.10.9).
- 5.3.8 The size of the parcel could allow a number of alternative layout options, which may avoid or reduce potential impacts on existing employment uses.
- 5.3.9 **Mineral safeguarding:** Part of WRP_154 is designated as a safeguarded mineral resources site under the Hampshire County Council Minerals and Waste Plan 2013 policy map. In accordance with of the NPSWRI (paragraph 4.10.16), an assessment of impacts to the mineral safeguarded area would need to be undertaken to determine if the loss would be acceptable.

Biodiversity and Nature Conservation

- 5.3.10 There are no national or international designations on the parcel. The parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders'. Policy DM23 would then require an assessment to be undertaken that demonstrates significant harm to biodiversity could be avoided.

Landscape and Visual Impacts

- 5.3.11 The parcel is in the urban area boundary of the HBC Local Plan. In accordance with Policy AL2, development is supported at this parcel.

Open Space

- 5.3.12 WRP_154 is not in the Green Belt and is not an area of open space.

Flood Risk

- 5.3.13 The parcel is not located in an area of high risk.

Constructability and Engineering Considerations

- 5.3.14 The parcel is generally level and developed with some undeveloped areas. It includes a mix of existing utility, business, and industrial units.
- 5.3.15 It would be necessary to further investigate the extent of future flood risk for the parcel. Projected sea level rise due to climate change and its effect on tidal flooding events is identifying a significant increased flood risk within this parcel and the surrounding area.

- 5.3.16 Subject to confirmation of underground conditions, the total parcel could accommodate the WRP, tunnelling and HLPS.
- 5.3.17 Various services including sewers, water mains, 132kV & 33kV power lines cross over the whole parcel, therefore some major diversion work would need to take place. As the parcel is large, it may be possible to mitigate the extent of such diversion works.
- 5.3.18 Existing buildings would need to be demolished and the parcel remediated before construction could commence. There is a high degree of uncertainty as to the nature of these works pending further inquiry and investigation. All enabling works would need to be carried out prior to works commencing.
- 5.3.19 Access to the parcel would be via Harts Farm Way.
- 5.3.20 Connections to and from Budds Farm WTW should be possible via Horizontal Directional Drill (HDD). Tunnel length north to Havant Thicket Reservoir would be similar to the 2022 consultation route, but tunnelling west towards Otterbourne WSW would be approximately 300m longer. There is likely to be an additional one month to the programme.

5.4 WRP_155

Parcel Location and Description

- 5.4.1 This parcel is a combination of WRP_73, WRP_74 and WRP_75 to form a single parcel. The previous parcels had been separated by two small access roads to areas of hardstanding, boat storage areas, parking and a slip way. In line with the parcel identification criteria set out in Table 4.1 in Section 4, these need not be avoided. Therefore, the three smaller parcels were merged into the larger WRP_155.
- 5.4.2 Parcel 155 is located within open grassland and areas of hardstanding, which includes car and boat parking as well as a slipway into Langstone Harbour. The parcel also appears to contain footpaths. The parcel is south of Harts Farm Way and the access road to the car parking and slipway, is north of Langstone Harbour and the Solent Way. To the east of the parcel is an access road to a car park. The parcel contains woodland in the northeast section of the parcel and pockets of trees scattered across the parcel.



Figure 5.4: Location of WRP_155

Environmental Considerations

- 5.4.3 The parcel is within 10 m of the Chichester and Langstone Harbours Ramsar, SPA and Solent Maritime SAC. As stated in the NPSWRI (Paragraph 4.3.13), the highest level of biodiversity protection is afforded to these sites. In addition, the parcel is designated as a mix of Core Area, Secondary Support Area and Low Use Site for the internationally important Brent Geese and Solent Wader birds as set out in the Solent Waders and Brent Goose Strategy, which is functionally linked habitat to the SPA. A WRP in this location has the potential to harm the integrity of the Chichester and Langstone Harbours SPA and Ramsar and Solent Maritime SAC, and therefore a HRA would be required.
- 5.4.4 The parcel is within 10 m of the Langstone Harbour SSSI, designated for its saltmarshes and mud flats, which supports internationally important bird populations. Due to the proximity of the parcel, there is potential for the proposed WRP to cause disturbance to these birds, during construction and operation. Further assessment would be required to understand the impacts on the SSSI and accordance with Paragraph 4.3.15 of the NPSWRI.
- 5.4.5 An ecological walkover of the parcel was undertaken during April 2021 to inform a PEA for the early stages of the WRP site selection. Lowland woodland and coastal floodplain grazing marsh HPI has been recorded on the parcel, therefore, the development of the WRP has the potential to impact HPI through direct loss. Where possible, these habitats should be avoided, unless the benefits of the development clearly outweigh the harm (paragraph 4.3.19 of the NPSWRI). The PEA site walkover identified suitable habitat for breeding birds, wintering birds, dormouse, badger, bats and reptiles. Further protected species surveys would be required to determine the potential for significant adverse impacts.
- 5.4.6 The parcel borders the edge of the Hermitage Stream which is located at the northern shoreline of Langstone Harbour, however, the parcel is fully contained within the terrestrial environment.

- 5.4.7 As part of the parcel is located within Flood Zones 2 and 3, there is a risk that flooding may occur which could facilitate a contamination pathway for impact to the marine environment during construction and/or operation.
- 5.4.8 Due to the presence of the Brockhampton Stream, it is assumed that the pipeline required to be constructed between Budds Farm WTW and the parcel would need to be via a trenchless technique. It is possible that migratory fish may utilise Brockhampton stream for spawning purposes and underwater noise and vibration generated from such an activity could act as a barrier to fish migration. Additionally, there may be requirements to undertake underwater noise modelling to justify any decisions made in the assessment process.
- 5.4.9 It is unlikely that site soils from the landfilled area can be re-used through conventional means i.e. using mechanisms such as the CL:AIRE DoWCOP, and as such a bespoke permit may be required from the EA to recover the soils for reuse so that they are no longer a 'waste'. Otherwise, the potentially contaminated soils would have to be disposed of if not suitable for reuse, incurring additional costs to the project and permitting requirements. This should be considered as part of the reporting during the Desk Top Study production and/or subsequent GQRA production and further surveys and assessments would be required. The parcel condition would need to be investigated in further detail at the next stage.
- 5.4.10 The parcel includes car parking, a boat storage area and a slipway to Langstone Harbour which may need to be relocated as a result of development of the WRP. The parcel also appears to be accessed by the public for walking.

Planning Considerations

- 5.4.11 The main planning considerations for WRP_155 are:

Land Use and Socio-Economic

- 5.4.12 **Existing use:** The parcel is open land and the southeast part of the parcel is used as a car park. The parcel is approximately 10m from Chichester and Langstone Harbours Ramsar, SPA, Solent Maritime SAC and the Langstone Harbour SSSI. There is a PRoW along the southern boundary.

Biodiversity and Nature Conservation

- 5.4.13 There are no national or international designations on the parcel though it is within 10m from Chichester and Langstone Harbours Ramsar, SPA, Solent Maritime SAC and the Langstone Harbour SSSI, and further assessment is required to understand the impacts on the SSSI and accordance with Paragraph 4.3.15 of the NPSWRI.
- 5.4.14 The parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Uncertain site for Brent Geese and/or Waders'. Further work would need to be undertaken to understand the potential impact on biodiversity.

Landscape and Visual Impacts

- 5.4.15 The parcel is located outside of the National Park and approximately 1.4km from Chichester Harbour AONB. Where development outside an AONB may have impacts within it Paragraph 4.9.14 of the NPSWRI would be engaged which requires development to avoid compromising the purpose of the designation and be designed sensitively.
- 5.4.16 The NPSWRI (Paragraphs 4.9.15 and 4.9.16) notes local landscape impacts should not be a reason for refusing the proposed development, however the development should avoid adverse effects on landscape or minimise harm by reasonable mitigation. A WRP at this location could be highly visible and could lead to landscape and visual impacts. These impacts could be difficult to mitigate through design due to the coastal location of the parcel and therefore the WRP at this parcel may conflict with the NPSWRI.

Open Space

- 5.4.17 WRP_155 is not in the Green Belt, but the area is used as open space, forming part Broadmarsh Coastal Park. The loss of open space would conflict with paragraph 4.10.10 of the NPSWRI.

Flood Risk

- 5.4.18 The southern section of the parcel is within Flood Zone 2 and 3, and as such the sequential test would be required as set out in the NPSWRI and the NPPF. Parts of the parcel are located outside of areas of high flood risk, which would be sequentially preferable. Annex 3 of the NPPF classifies sewage treatment, transmission and water transfer infrastructure as either less vulnerable or water compatible, meaning that if those parts of the parcel with lower flood risk were not available, the exception test would need to be satisfied to demonstrate that the development will be safe and not increase flood risk elsewhere.

Constructability and Engineering Considerations

- 5.4.19 The parcel is situated within a former landfill, which is very hilly and is likely to require a substantial cut and fill exercise to form a level platform. This could result in a large volume of exported contaminated material (previous landfill site) to reduce the parcel to a suitable level. Ground works would need to take place to level the area prior to construction works beginning and the safe management and removal of any contaminated soils would need to be ensured.
- 5.4.20 Projected sea level rise due to climate change and its effect on tidal flooding events is identifying a significant increased flood risk within this parcel and the surrounding area. Raising the levels of the parcel could help to mitigate the potential flood risk impacts but could transfer flood risk to other areas. See Appendix B for tidal flood risk map.
- 5.4.21 There is potential for some tree / shrub clearance needing to be undertaken. All enabling works would need to be carried out prior to works commencing. This involves a large earthworks activity with could add up to 8 months to the programme.
- 5.4.22 The parcel is bordered by the access road and contains a slipway to a boat yard and parking areas for the Broadmarsh Coastal Path. The boat storage and slipway are assumed to be intrinsically linked and therefore further consideration of whether it is possible to retain or relocate the slipway and boat storage would be required.
- 5.4.23 The parcel is also bounded by the access road to the Chalkdock Lake car park which may need to be retained.
- 5.4.24 There is sufficient space for WRP, HLPS and tunnelling to be constructed in parallel, subject to confirmation of likely plant footprint and retention or diversion of the coastal path (if applicable).
- 5.4.25 All enabling works would need to be carried out prior to works commencing. Tunnel routes to the north would need to be approximately an additional 400m, which could impact the programme approximately 2 to 3 months.
- 5.4.26 Services crossing the parcel are:
- Overhead 33kV power cable.
- 5.4.27 This cable presents major impact to overall development of the parcel, due to only clipping the far northwest corner. Access to the parcel would be via Harts Farm Way. There is potential to use the existing entrance to the parcel with some improvements.
- 5.4.28 The distance from Budds Farm WTW indicates a tunnel would be needed for connections to and from the parcel, approximately 750m long under the Chichester and Langstone Harbours Ramsar,

SPA and Solent Maritime SAC, unless the shaft was located on the eastern most edge of the parcel. Delivered using the same TBM as other pipelines, this would have a 4 to 6 month impact on programme.

5.5 WRP_157

Parcel Location and Description

- 5.5.1 This new parcel is located in an industrial and commercial area. The parcel is bound to the north by the A27, to the east by the Lavant (Hants) River and a woodland area, beyond which is a residential area, to the west Southmoor Lane and to the south Penner Road and further existing employment units.



Figure 5.5: Location of WRP_157

Environment Considerations

- 5.5.2 The parcel is located 180m north of Chichester and Langstone Harbours Ramsar, SPA and 590m north of the Solent Maritime SAC. As stated in the NPSWRI (paragraph 4.3.13), the highest level of biodiversity protection is afforded to these sites. Due to the proximity of these sites a HRA would be required to determine whether any mitigation would be required.
- 5.5.3 The parcel contains small areas of coastal and floodplain grazing marsh HPI. Where possible, these habitats should be avoided, unless the benefits of the development clearly outweigh the harm (paragraph 4.3.19 of the NPSWRI). Development of the WRP has the potential to result in the loss of these habitats and therefore compensation will be required. However, further surveys would be required to confirm this due to the existing predominant built-up nature of the parcel.
- 5.5.4 The northern section of the parcel is bordered by the Lavant (Hants) River which is upstream of Langstone Harbour. However, the parcel is fully contained within the terrestrial environment.
- 5.5.5 There are four residential properties adjacent to the parcel. Micro sitting of the WRP would be needed to ensure construction activities and operational buildings are sited away from these

residential properties where possible. Many of the potential impacts could be reduced through standard control measures, such as site design and construction layout, and through appropriate construction control measures to control potential construction impacts, such as dust and emissions and noise and vibration.

Planning Considerations

5.5.6 The main planning considerations for WRP_157 are:

Land use and Socio-Economic

5.5.7 **Existing use:** The parcel is used for industrial and employment purposes. The redevelopment of the parcel for the proposed WRP could lead to a loss in existing employment floorspace and related employment. The size of the parcel would allow a number of alternative layout options, which may avoid or reduce potential impacts on existing employment uses.

5.5.8 There is a National Cycle Route which intersects the northern section of the parcel and runs along the northern border. There are no PRoW or other community assets located within the parcel.

5.5.9 **Mineral safeguarding:** A part of WRP_157 is designated as a safeguarded mineral resources site under the Hampshire County Council Minerals and Waste Plan 2013 policy map. In accordance with of the NPSWRI (paragraph 4.10.16), an assessment of impacts to the mineral safeguarded area would need to be undertaken to determine if the loss would be acceptable.

Biodiversity

5.5.10 There are no national or international designations on the parcel.

Landscape and Visual

5.5.11 The parcel is in the urban area boundary of the HBC Local Plan. In accordance with Policy AL2, development is supported at this parcel.

Constructability and Engineering Considerations

5.5.12 The parcel is large and generally level, it has been developed with varying degrees of density.

5.5.13 It would be necessary to further investigate the extent of future flood risk for the parcel. Projected sea level rise due to climate change and its effect on tidal flooding events is identifying a significant increased flood risk across this parcel and the surrounding area.

5.5.14 There are four residential properties just outside the northern boundary of the parcel. However, the whole parcel would not be required so, depending on what section of the parcel is available, there should be some scope to mitigate impact on the residents with choice of layout and construction plan.

5.5.15 While the eastern side appears less densely developed, further analysis of existing use and potential tunnelling routes would be required to assess the location. Various services including sewers, water mains, 132kV & 33kV power lines cross over the whole parcel, this could lead to some major diversion work that would need to take place.

5.5.16 Existing buildings would need to be demolished and the parcel remediated before construction could commence. There is a high degree of uncertainty as to the nature of these works pending further inquiry/investigation, but the parcel is large enough to provide flexibility for layout meaning it is not yet confirmed at this stage how many buildings would need to be demolished to accommodate the WRP and associated works.

5.5.17 Access to the parcel would be via Brookside Road.

5.5.18 For the pipeline towards Otterbourne WSW, the potential tunnel route is longer than the 2022 consultation route, by approximately 1.2 km and the route to Havant Thicket Reservoir is 0.6km longer. The tunnelling impact on programme would be approximately 12 to 18 months. Pipes to/from Budds Farm WTW could be accommodated in the East-West tunnel or possibly direct buried.

5.6 WRP_158

Parcel Location and Description

5.6.1 As set out in Section 4, this parcel was proposed for consideration by HBC and is made up of the SSE office and ancillary land, and the Norse South East depot (waste management) (owned by HBC). The parcel is located south of Penner Road and east of Southmoor Lane. East of the parcel is an area of woodland and the Lavant (Hants) River and south of the parcel is the Southmoor Nature Reserve and an area of floodplain marsh.

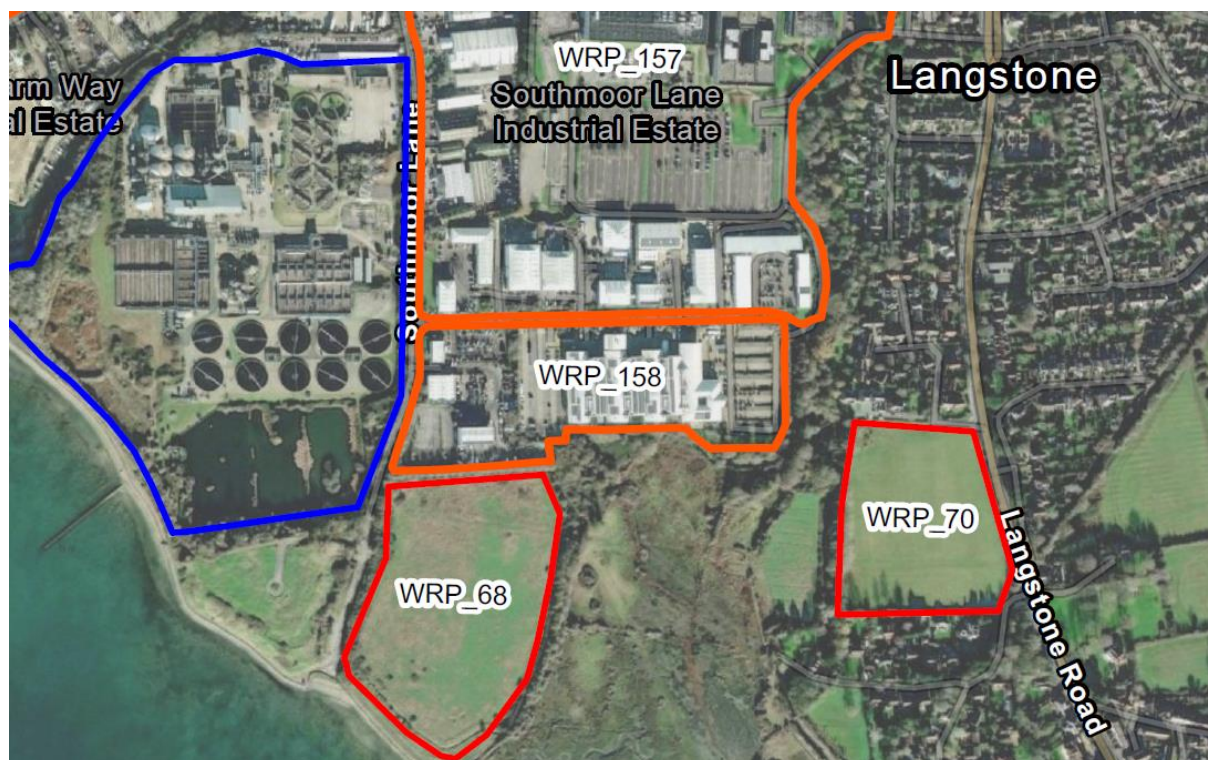


Figure 5.6: Location of WRP_158

Environment Considerations

- 5.6.2 The parcel is located 300m north of Solent Maritime SAC and 60m north of Chichester and Langstone Harbours Ramsar, SPA. As stated in the NPSWRI (paragraph 4.3.13), the highest level of biodiversity protection is afforded to these sites. Due to the proximity to the designated sites a HRA will be required.
- 5.6.3 The parcel is also located within 60m of Langstone Harbour SSSI, designated for its saltmarshes and mud flats, which supports internationally important bird populations. Due to the proximity of the parcel to the SSSI, there is potential for the WRP development to cause disturbance to these birds. Further assessment would be required to understand any likely impacts and accordance with Paragraph 4.3.15 of the NPSWRI.
- 5.6.4 The parcel contains small areas of coastal and floodplain grazing marsh priority habitat. Development of the WRP has the potential to result in the loss of this habitat. Where possible, these

habitats should be avoided, unless the benefits of the development clearly outweigh the harm (paragraph 4.3.19 of the NPSWRI).

- 5.6.5 The parcel is adjacent to the Lavant (Hants) River which is upstream of Langstone Harbour. However, the parcel is fully contained within the terrestrial environment.
- 5.6.6 There are areas of Flood Risk 2 and 3 located at the south and south west of the parcel, hence there is a risk that flooding may occur which could facilitate a contamination pathway for impact to the marine environment during construction and/or operation. A FRA would be required.

Planning Considerations

- 5.6.7 The main planning considerations for WRP_158 are:

Land Use

- 5.6.8 **Existing use:** Part of the parcel is in office employment use and occupied by SSE as an operational site. The other part of the parcel is occupied by a waste management operator. The redevelopment of the parcel for the proposed WRP could lead to a loss in existing employment floorspace. **Mineral safeguarding:** A part of the parcel is designated as a safeguarded mineral resources site under the Hampshire County Council Minerals and Waste Plan 2013 policy map. In accordance with the NPSWRI (paragraph 4.10.16), an assessment of impacts to the mineral safeguarded area would need to be undertaken to determine if the loss would be acceptable.

Biodiversity

- 5.6.9 There are no national or international designations on the parcel.

Landscape and Visual

- 5.6.10 The parcel is in the urban area boundary of the HBC Local Plan. In accordance with Policy AL2, development is supported at this parcel.

Flood Risk

- 5.6.11 Small sections around the boundary of the parcel are within Flood Zone 2 and 3, which may be able to be avoided. If these areas cannot be avoided the sequential test would be required as set out in the NPSWRI and the NPPF. Parts of the parcel are located outside of areas of high flood risk, which would be sequentially preferable. Annex 3 of the NPPF classifies sewage treatment, transmission and water transfer infrastructure as either less vulnerable or water compatible, meaning that if those parts of the parcel with lower flood risk were not available, the exception test would need to be satisfied to demonstrate that the development will be safe and not increase flood risk elsewhere.

Constructability and Engineering Considerations

- 5.6.12 The parcel is generally level. The SSE and Norse South East Depot buildings appear to be all a similar age and construction. The parcel is currently owned by SSE and HBC.
- 5.6.13 It would be necessary to further investigate the extent of future flood risk for the parcel. Projected sea level rise due to climate change and its effect on tidal flooding events is identifying a significant increased flood risk across this parcel and the surrounding area.
- 5.6.14 Subject to plant layout and future flood levels, it is likely the total parcel could accommodate the WRP, HLPS and tunnelling.
- 5.6.15 Various services including sewers, water mains, 132kV & 33kV power lines cross over the whole parcel, it is likely some major diversion work would need to take place. Further engagement is required with the landowner to understand the location of the below ground power lines and the potential for them to be diverted or need for retaining.

- 5.6.16 Existing buildings would need to be demolished and the parcel remediated prior to construction works. When further detail is established about the existing structures, opportunity for reuse of one/two of the SSE blocks may be identified.
- 5.6.17 Access to the parcel would be via Southmoor Lane/Penner Road.
- 5.6.18 For the pipeline towards Otterbourne WSW, the potential tunnel route is longer than the 2022 consultation route by approximately 1.2 km and the route to Havant Thicket Reservoir is 0.5km longer. This means impact on programme of approximately 12 to 18 months. Pipes to/from Budds Farm WTW could be accommodated in the East-West tunnel or possibly direct buried.

Engagement with HBC and SSE on WRP_78158

- 5.6.19 Engagement has been undertaken with both HBC and SSE for WRP_158. This engagement has confirmed that SSE is aiming to sell the existing office building site, however there is a potential need for SSE to retain approximately 3 acres (1.2 ha) of the land for a control room building, or to relocate other SSE sites to this site and retain it all as an operational site. Therefore, there are uncertainties related to availability of the parcel that would need considering if it is identified as the preferred site.

5.7 Budds Farm WTW

Parcel Location and Description

- 5.7.1 Budds Farm WTW is an operational SW site located west of Southmoor Lane and is bordered to the west by Langstone Harbour and the Brockhampton Stream. The parcel is made up of various treatment buildings and areas of hardstanding as well as open water, woodland and grassland at the south and west. The potential for utilising land at Budds Farm WTW has been investigated a number of times through the development of the project. Originally at the start of the site selection process, which was first reported on at SW's Gate 1 submission, it was identified that the available land at Budds Farm WTW was insufficient for the size of land parcel required. More recently, the potential for utilising Budds Farm WTW was revisited as part of the review work undertaken in Spring 2022, which resulted in the Site 72 ETS risk document that was produced and is presented at Appendix C of this report. The Site 72 ETS risk document was prepared using a minimum parcel size of 6 ha which would allow for co-location of the WRP with other project components including temporary construction areas and the HLPS, however explanation is given on the general feasibility of locating the WRP at Budds Farm WTW.
- 5.7.2 As stated within Appendix C, Chapter 4, there is potential to locate the WRP at SWs Budds Farm WTW site on currently undeveloped land available at this site, however, the available land that conforms with the criteria set out for identifying parcels within the previous WRP site selection (Stage 1) is approximately 3.2 ha and therefore, the undeveloped land on Budds Farm WTW alone would not be suitable as it does not meet the SRO requirement for a 6 ha site which is based on the WRMP 24 consideration of a 1:500yr drought and the requirement to allow expansion of the 15MI/d WRP by 45 MI/d resulting in a total output of 60 MI/d at a future date. Hence additional land would be required.
- 5.7.3 In the southern section of the parcel is an area of 'open water'/lagoons. In line with the parcel identification criteria set out in Table 4.1 in Section 4, the onsite lagoons would not be included in a parcel identified at Stage 1, however as the parcel is a SW owned operational site, and for the purposes of this current review exercise, the lagoons located within the southern part of the site have been included within the parcel to understand whether this area could be feasible.



Figure 5.7: Location of Budds Farm WTW

Environment Considerations

- 5.7.4 The parcel is within approximately 10 m of the Solent Maritime SAC and the Chichester and Langstone Harbours SPA and Ramsar. As stated in the NPSWRI (paragraph 4.3.13), the highest level of biodiversity protection is afforded to these sites. The southern part of the parcel is designated as a Primary Support Area for the internationally important Brent Geese and Solent Wader birds as set out in the Solent Waders and Brent Goose Strategy, which is functionally linked habitat to the SPA. A Section 106 agreement is in place for Budds Farm WTW to “*improve and manage the Budds Farm lagoons for the benefit of wintering waterfowl and other wildlife in accordance with the conservation objective of the Special Protection Area*”. A WRP in this location has the potential to harm the integrity of the Chichester and Langstone Harbours SPA and Ramsar and Solent Maritime SAC, and therefore a HRA would be required.
- 5.7.5 The parcel is within approximately 10 m of the Langstone Harbour SSSI, designated for its saltmarshes and mud flats, which supports internationally important bird populations. Due to the proximity of the parcel to this site, there is potential for the WRP development to cause disturbance to these birds. Further assessment would be required to understand any likely impacts and accordance with Paragraph 4.3.15 of the NPSWRI.
- 5.7.6 Deciduous woodland HPI is located in the west of the parcel. Development of the WRP could result in the loss of this habitat, or if retained could reduce the developable area. Where possible, these habitats should be avoided, unless the benefits of the development clearly outweigh the harm (paragraph 4.3.19 of the NPSWRI).
- 5.7.7 There are sections in the south and the centre of the parcel that are within Flood Zone 2 and 3, there is a risk that flooding may occur which could facilitate a contamination pathway for impact to the marine environment during construction and/or operation. A FRA and sequential test would be required.

Planning Considerations

5.7.8 The main planning considerations for Budds Farm WTW are:

Land Use

5.7.9 **Existing use:** The parcel is used for Wastewater Treatment. Where the proposed WRP is co-located with the wastewater treatment facility, it would be consistent with the NPSWRI.

5.7.10 **Mineral safeguarding:** The parcel is designated as a Safeguarded mineral resources site under the Hampshire County Council Minerals and Waste Plan 2013 policy map. In accordance with of the NPSWRI (Paragraph 4.10.16), an assessment of impacts to the mineral safeguarded area would need to be undertaken to determine if the loss would be acceptable.

Biodiversity

5.7.11 There are no national or international designations on the parcel. The southern part of the parcel is designated in the HBC Local Plan (Allocations) (2014) as an 'Important site for Brent Geese and/or Waders'. Policy DM23 would require an assessment to be undertaken that demonstrates significant harm to biodiversity could be avoided.

Landscape and Visual

The parcel is located outside of the National Park and close to but not within the Chichester Harbour AONB. Paragraph 4.9.14 of the NPSWRI notes that development should avoid compromising the purpose of the designation and be designed sensitively.

Flood Risk

5.7.12 Large portions of the parcel are within Flood Zone 2 and 3, and as such the sequential test would be required as set out in the NPSWRI and the NPPF. Parts of the parcel are located outside of areas of high flood risk, which would be sequentially preferable. Annex 3 of the NPPF classifies sewage treatment, transmission and water transfer infrastructure as either less vulnerable or water compatible, meaning that if those parts of the parcel with lower flood risk were not available, the exception test would need to be satisfied to demonstrate that the development will be safe and not increase flood risk elsewhere.

Constructability and Engineering Considerations

5.7.13 To utilise the lagoon area (approximately 2.5 ha) for construction of the WRP, various actions would need to be undertaken. For example, the lagoons would first need to be drained and any contaminated liquids would need to be treated prior to disposal. Similarly, any contaminated sludge from the base of the lagoons would need to be treated before disposal. Prior to draining, an assessment of the construction of the settlement tanks would need to be undertaken to ascertain if any works to the lagoons would affect their stability. Ground investigations would need to be carried out to design the foundations for the WRP which would likely be piled foundations for the main buildings and structures with raft slabs for ancillary building etc. Any underground services/pipelines etc. would also need to be considered. Depending on ground levels and the depth of the lagoons, the area could be levelled off as it is but if the levels had to be brought up to the existing ground suitable backfill materials to the volume of the lagoons would need to be imported.

5.7.14 The undeveloped area on the parcel is currently approximately 7.1 ha along the western and southern edges (including lagoons). However, there is a requirement (driven by population growth identified in WRMP 19) in the next 5 to 10 years for two additional final settlement tanks at Budds Farm WTW to maintain regulatory treatment standards. That will reduce the available area further. Additionally, WINEP drivers are identifying a significant increase to the storm water storage on site, up to 150,000m³, and potentially additional treatment. To be able to utilise Budds Farm WTW site to facilitate the WRP within the boundary, a new WTW would need to be constructed to provide more efficient use of space. However, in order to build a new WTW, this would need to be built whilst the


existing WTW is operational and therefore a much larger site would be needed that is currently available. Therefore, there is insufficient space to construct a 60MI/d WRP on Budds Farm WTW unless the site was completely redeveloped to reduce its footprint.

- 5.7.15 In addition, it would be necessary to further investigate the extent of future flood risk for the parcel. Projected sea level rise due to climate change and its effect on tidal flooding events is identifying a significant increased flood risk across this parcel and the surrounding area.

Table 5.1: Environmental, Planning, Constructability and Engineering Qualitative Review Outcomes Summary Table

Parcel	Image	Environment	Planning	Constructability and Engineering
<p>WRP_153 7.4 ha</p>		<ul style="list-style-type: none"> ▪ Northern part of parcel within SPZ 1 - potential impact to groundwater quality. ▪ Within floodplain grazing marsh priority habitat. ▪ Potential construction/operational (noise, vibration, dust, etc) impacts to residential properties. ▪ Flood Zone 3. 	<ul style="list-style-type: none"> ▪ Loss of existing employment / displacement of businesses. ▪ Impact on residential receptors. 	<ul style="list-style-type: none"> ▪ SPZ 1 overlaps northern section structures with deep foundations - would need to be positioned as far away from the SPZ 1. ▪ Significant service diversions, ground investigations, detailed surveys and clearance of developed areas would be required. ▪ Potential requirement for acoustic shed. ▪ Additional 3-5 months to programme for enabling works access and (uncertain) diversion of services and additional 6-12 months to programme for tunnelling. ▪ Risk of further programme impact if the construction sequence is affected by the tunnelling locations relative to the SPZ.
<p>WRP_154 8.0 ha</p>		<ul style="list-style-type: none"> ▪ Potential sources of contamination associated with landfill (made ground) (west part of parcel). ▪ Candidate Site (H09) (north west corner) designated in the Solent Waders and Brent Goose Strategy which is functionally linked to the SPA, but very likely to be able to avoid the site. 	<ul style="list-style-type: none"> ▪ Loss of existing employment / displacement of businesses. 	<ul style="list-style-type: none"> ▪ Potential need to mitigate (e.g. raise ground levels) to address future flooding concerns. ▪ Significant diversions of current utilities required. ▪ Demolition and remediation required pre-commencement. ▪ Additional 1 month to the programme due to tunnelling west towards Otterbourne WSW.

Parcel	Image	Environment	Planning	Constructability and Engineering
				<ul style="list-style-type: none"> Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events.
WRP_155 16.4 ha		<ul style="list-style-type: none"> Within 10 m of SPA, Ramsar, SAC Loss of Core Area, Secondary Support Area and Low Use Site designated in the Solent Waders and Brent Goose Strategy which is functionally linked to the SPA. Within 10 m of a SSSI supporting internationally important birds. Loss of HPI – Deciduous woodland and coastal grazing marsh. The parcel is within a historic landfill. Flood Zone 2 and 3. 	<ul style="list-style-type: none"> Landscape and visual impacts. Loss of open space. Loss of ecological habitat. Loss of open space / recreational area. 	<ul style="list-style-type: none"> Substantial cut and fill exercise. Level working platforms would need to be formed. Potential need to mitigate (e.g. raise ground levels) to address climate change impacts on flooding. Additional 2-3 month to programme delay due enabling works and 4-6 months due to extensions to tunnelling routes. Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events.
WRP_157 26.1 ha		<ul style="list-style-type: none"> Proximity to residential properties (northwest of parcel), although this could be easily avoided due to the size of the parcel. The parcel contains small areas of coastal and floodplain grazing marsh HPI. 	<ul style="list-style-type: none"> Loss of existing employment / displacement of businesses. 	<ul style="list-style-type: none"> Further analysis of existing use and potential tunnelling routes required. Parcel intersects various utilities, so major diversion works would be required. Demolition and remediation required. 12-18 month extension to programme. Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events.

Parcel	Image	Environment	Planning	Constructability and Engineering
WRP_158 6.1 ha		<ul style="list-style-type: none"> ▪ Close proximity (60m) to a SSSI, Ramsar and SPA and 300m north of SAC. ▪ Contains small areas of coastal and floodplain grazing marsh HPI. ▪ Flood Zone 2 and 3. 	<ul style="list-style-type: none"> ▪ Loss of existing employment / displacement of businesses. 	<ul style="list-style-type: none"> ▪ Major diversion of utilities required. ▪ Demolition and remediation required. ▪ Additional 12-18 months to the programme due to additional tunnelling, shaft and pipework. ▪ Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events.
Budds Farm WTW 19.0 ha		<ul style="list-style-type: none"> ▪ Within 20 m of SSSI, SAC and SPA/Ramsar site. HRA required. ▪ Loss of Primary Support Area for Brent Goose and Solent Wader (within southern section of the parcel). ▪ Potential loss/impact on woodland HPI. 	<ul style="list-style-type: none"> ▪ Loss of ecological habitat. 	<ul style="list-style-type: none"> ▪ Insufficient space for the WRP even if Budds Farm WTW completely redeveloped. ▪ High cost and timescales to decommission and rebuild the WTW then build the WRP. ▪ Potential future flood risk due to projected sea level rise due to climate change and its effect on tidal flooding events.

6 Stage 5 and 6 Outcomes

6.1 Selection of Parcels for Progression

Approach

- 6.1.1 Following the conclusion of Stage 5 and Stage 6, which considered environmental, planning, construction and engineering criteria against the potential WRP parcels, the outcomes were reviewed to identify which parcels were the best performing against the defined criteria and should be progressed to the next stage and final stage.
- 6.1.2 Parcels that were determined to be suitable for progression were then considered further as part of a cost review which was informed by the information available at the time of this report.
- 6.1.3 Parcels identified with the potential for significant risk (i.e. red risk rating) to the project against one or more of the criteria (environmental, planning, construction and engineering) were considered to be not preferable compared to alternative parcels and were not progressed further, even if parcels performed well against other criteria. For example, if a parcel is considered to be high risk against environmental considerations as a result of potential adverse impacts that could not be mitigated, this parcel would be considered to be unsuitable irrespective of its performance against planning or construction and engineering considerations.
- 6.1.4 Some parcels have been identified as having a consistently moderate risk (amber for environmental, planning, construction and engineering), which indicates that there is scope to mitigate or compensate for the risks that have been identified. However, given the availability of alternative better performing parcels that would not require mitigation or compensation, parcels with a low risk or low and moderate risk RAG rating were progressed for further review.
- 6.1.5 This site selection process considered the requirement to assess reasonable alternatives, set out in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, the assessment of alternative sites set out in the NPSWRI, the Conservation of Habitats and Species Regulations 2017 and other relevant legislation and policy, in which SW will need to demonstrate the reasonable alternatives that have been considered. Having considered the site selection assessment and RAG ratings, professional judgement by competent experts was then applied to pick the top four best performing parcels against the defined criteria and a preferred parcel prior to progressing to a cost review stage to check if the conclusions would remain.
- 6.1.6 Table 6.1 sets out the risk ratings applied to WRP parcels following the completion of Stage 6.

Table 6.1 - Summary of risk ratings following Stage 6

Parcel	Environmental	Planning	Construction and Engineering
WRP_58	Red	Yellow	Yellow
WRP_68	Red	Green	Yellow
WRP_70	Red	Yellow	Yellow
WRP_72	Yellow	Green	Green
WRP_76	Yellow	Green	Red
WRP_149	Yellow	Yellow	Yellow
WRP_153	Yellow	Yellow	Yellow
WRP_154	Green	Green	Yellow
WRP_155	Red	Yellow	Yellow
WRP_157	Green	Green	Yellow

Parcel	Environmental	Planning	Construction and Engineering
WRP_158			
Budds Farm WTW			

Parcels Progressed

6.1.7 The following parcels have been progressed for further review:

- **WRP_72:** It is considered that there are moderate environmental risks as a result of the presence of priority habitats at the boundary of the parcel, and the potential loss of a Low Use Solent Wader and Brent Goose Strategy site, however it is considered that these could be mitigated or compensated for. Low risks have been identified in planning and construction and engineering terms.
- **WRP_154:** It is considered that there are low environmental risks due to the potential avoidance of sources of contamination and the current assumption is that the Solent Waders and Brent Goose strategy ecological area in the west of the parcel can be avoided as the parcel is large enough to accommodate the project’s requirements without encroaching into the ecological area, which will be kept under review. Moderate construction and engineering risks have been identified as a result of the risk for future flooding, the need to divert utilities, and demolition and remediation works would be required prior to the commencement of construction works. No risks have been identified in planning terms.
- **WRP_157:** It is considered that there are moderate constructability and engineering risks as a result of the need for demolition and remediation works prior to the commencement of construction works, the need to divert utilities, the risk of future flooding, and the medium-term effect on schedule due to additional tunnelling distance. No risks have been identified in environmental and planning terms.
- **WRP_158:** It is considered that there are moderate constructability and engineering risks as a result of the need for demolition and remediation works prior to the commencement of construction works, the need to divert utilities, the risk of future flooding, and the medium-term effect on schedule due to additional tunnelling distance. No risks have been identified in environmental and planning terms.

6.1.8 Following the site selection assessment, WRP_72, WRP_154, WRP_157, and WRP_158 were progressed to a cost review.

6.1.9 The four top performing parcels are all considered to be potentially suitable sites for the proposed WRP. WRP_72 is considered to be the preferred parcel, as it is vacant and currently available for development (at this point in time May 20230. A summary of the parcel's suitability to meet the WRP criteria is set out below.

- **WRP_72:** This parcel performs best against the defined criteria and is considered to be the most suitable site, when considered against the WRP site selection requirements. Moderate environmental risks have been identified as the parcel is within a historic landfill. Mitigation is likely to be required to avoid the creation of contamination pathways and to remediate the site to an acceptable level. In addition, there is potential for effects to a Low Use site which is functionally linked with the SPA in Langstone Harbour, however given the low use of this site by qualifying features of the SPA it is anticipated that effects can be mitigated to acceptable levels. A HRA will be required to determine effects and further mitigation. Low planning risks have been identified as the principle of this type of development is acceptable through the allocation and granting of planning permission for employment development of similar uses to a WRP. Low construction and engineering risks have been identified as there are no utilities at the parcel that would reduce the developable area or would require diverting.

6.1.10 WRP_158, WRP_157 and WRP_154 are all considered to be equally suitable after WRP_72, due to the developed nature of the sites with similar environmental and planning risks. Further explanation is set out below:

- **WRP_158:** A small number of environmental risks have been identified. The parcel is within 60 m of a SSSI, SPA and Ramsar, however it is considered that any effects can be mitigated or avoided. A HRA would be required to determine effects and further mitigation. Low planning risks have been identified. The parcel consists of existing general industrial land and development of the WRP would result in the loss of these uses. Engagement with HBC and SSE has indicated that some of the site may become vacant in the near future. This could reduce the potential impact on employment and businesses and be more comparable to WRP_72. Moderate construction and engineering risks have been identified as the parcel is currently developed and enabling works would require demolition and remediation of the parcel, which could increase the duration of potential environmental impacts during construction. Diversion of utilities and additional tunnelling length required. This could increase the programme by approximately 12-18 months.
- **WRP_157:** Low environmental risks have been identified. The parcel is in close proximity to residential properties, however it is likely that the WRP can be located away from these within the wider parcel due to the size of the parcel. Low planning risks have been identified. The parcel consists of existing general industrial land and development of the WRP would result in the potential loss of these uses. WRP_157 performs in a comparable way to WRP_158 in planning terms. Moderate construction and engineering risks have been identified as the parcel is currently developed and enabling work would require demolition and remediation of the parcel, which could increase the duration of potential environmental impacts during construction. Diversion of utilities and additional tunnelling length required. This could increase the programme by approximately 12-18 months.
- **WRP_154:** A small number of environmental risks have been identified. The parcel includes a Solent Wader and Brent Goose ecological area which is functionally linked with the SPA in Langstone Harbour, however, given the size of the parcel, the current assumption is that this would be avoided as the parcel is large enough to accommodate the project's requirements without encroaching into the ecological area, which will be kept under review. Therefore, this parcel is considered to be a low risk. If the ecological area couldn't be avoided this would be a significant environmental risk that would likely make this site unacceptable. A HRA will be required to determine effects and further mitigation. In addition, landfill materials in the west of the parcel are understood to be made ground and could be contaminated. It is unlikely that the soils from the landfilled area can be re-used through conventional means, however due to the size of the parcel this area could be avoided. Low planning risks have been identified. The parcel consists of existing general industrial land and development of the WRP would result in the loss of these uses. Moderate construction and engineering risks have been identified as the parcel is currently developed and enabling work would require demolition and remediation of the parcel which could increase the duration of potential environmental impacts during construction. In addition, the diversion of utilities is likely to be required. This could increase the programme by approximately one month.

7 Land Availability and Cost Review

7.1 Land Availability

7.1.1 To ensure that SW has considered whether there are other parcels that may not automatically appear through the site selection process, the project's Lands Team (Fisher German), undertook research and discussion with land agents to understand whether there are any other parcels, other than the parcels identified during Stage 0-6, that meet the projects search criteria, these are:

- Parcels within 1.5 km from Budds Farm WTW;
- A minimum of 3.2 hectares (no upper limit); and
- Should support early delivery to enable the appointment of a contractor to deliver the project following the granting of consent.

7.1.2 The response from research and discussions with land agents resulted in no new parcels being identified.

7.2 Cost Review Methodology

7.2.1 Following the qualitative review of parcels (Stages 5 and 6), parcels that were identified as having a red or consistently amber for environmental, planning, constructability and engineering considerations were not progressed further. Parcels assessed as having both low and medium risks were considered the top performing sites against the defined criteria and were selected prior to progressing to the next stage. This next stage consists of a high-level analysis and is intended to provide an extra 'lens' over the suitability of the top four selected sites to understand if the conclusions drawn following Stage 5 and 6 would remain. A cost review was therefore undertaken for the following parcels:

- WRP_72;
- WRP_154;
- WRP_157; and
- WRP_158.

7.2.2 Costings have been sought from the projects Lands Team (Fisher German), and the SW Cost Intelligence Team based on the information provided by the Engineering and Construction Team. The cost review is based on the assumptions set out below. The full report on land acquisition cost is included at Appendix D.

Considerations, Assumptions and Limitations

7.2.3 A number of considerations and assumptions have been made when calculating the indicative land and engineering costings, which are set out below.

7.2.4 The land considerations used in determining land acquisition costs are set out below:

- Number of ownerships and long leasehold interests (using Land Registry data of registered interests only);
- High level review of any buildings on the parcel (type, approximate age and size);
- Initial identification of principal constraints (if any);
- Indicative range of building values (£ per sq ft / sq m);
- Indicative bare land value assuming a cleared level and serviced site for industrial/warehouse use; and

- The cost review is based on the level of information known at this time, it is possible that actual costs could vary once there is more information available on likely land acquisition, construction costs and compensation.

7.2.5 The construction and engineering assumptions and considerations for the purpose of this cost review are set out below:

- All tunnelling costs use WRP_72 costs as a baseline. Due to all the parcels being located within the same 1.5 km radii from Budds Farm WTW as WRP_72, it has been assumed that if a detailed route selection process was undertaken for each parcel the best performing routes that would be identified would predominantly follow those identified for WRP_72. Estimations have been made on any costs above or below those that would be required for WRP_72;
- The route will connect into Budds Farm WTW, Havant Thicket Reservoir and Otterbourne WSW;
- Any cost increase for pipeline routing will be based on the parcel connecting to the current preferred routes in as short a distance as possible;
- Costing will be based on Gate 2 (updated for Control Point C) cost estimate - cost per km for tunnelling, pipe jacking or open cut;
- Enabling costs will be based on the cost calculated for Gate 2;
- Enabling works for WRP 72 do not consider any cost associated with the potential remediation work. The assumption that all enabling works costs only consider above ground work, as the below ground information on all WRP parcels is not available.
- The estimated construction and engineering costs do not reflect the difference in costs for constructing the WRP at each parcel, given this is not yet understood;
- The HLPS will still be co-located on the WRP site for the purpose of estimating costs, although further scheme development work would be required depending on which WRP parcel is preferred;
- Demolition – considers cost per m² for the removal of buildings, however all costs cannot be accounted for given the uncertainty in understanding the extent of foundations, below ground structures and any contaminants on site; and
- Enabling costs associated with an indicative 6 ha site, which would provide space for HLPS, construction compound and concurrent tunnel construction, have been utilised as this has been identified as the preferred working area at this stage, so provides an equal basis for cost comparison, for the purpose of this review.

7.2.6 There are limitations inherent with undertaking cost analysis at this stage, as set out below:

- The information used to inform the cost review is high level and based on information available at this stage of the process. Not all likely costs are known at this stage and the estimated costs are subject to change as more information becomes available about the parcels, if progressed further;
- The price per unit is indicative and is not site specific (e.g. does not include routes crossing major roads or business specific requirements, depending on particular parcels);
- Does not include the cost of potential pipeline route optioneering, which could change depending on the location of the WRP parcel that is progressed; and
- Not all costs are considered in the cost review as there is not sufficient information to inform an estimate on certain costs. For example, there is no consideration of likely compensation costs for business interruption and relocation or extinguishment costs. It is not possible to forecast this without an in-depth understanding of what businesses will be impacted.

7.3 WRP_72 Cost Review

Estimated Lands Cost

7.3.1 The estimated cost associated with acquiring WRP_72 is £2,120,493.33/ha . See Appendix D for assumption and considerations.

Estimated Engineering/Construction Cost

7.3.2 Table 7.1 below summarises the estimated engineering/construction cost associated with the development of WRP_72.

Table 7.1: Estimated construction and engineering costings for WRP_72

Aspect	Provisional Cost (6 ha)
Tunnelling cost	£428,094,681.33
Enabling works (site clearance– based on 6ha)	£3,101,149.80
TOTAL	£431,195,831.13

7.4 WRP_154 Cost Review

Estimated Lands Cost

7.4.1 The parcel is predominantly built out and is used for industrial, warehouse, open storage and office use. From reviewing the buildings on site an estimation of the potential realisable prices assuming they were to be sold vacant was made. The estimated cost associated with acquiring WRP_154 is [REDACTED] a. See Appendix D for assumption and considerations that informed this estimation.

Estimated Engineering/Construction Cost

7.4.2 Table 7.2 below summarises the estimated engineering/construction cost associated with the development of WRP_154.

Table 7.2: Estimated engineering costings associated with WRP_154

Aspect	Provisional Cost
Tunnelling costs (WRP_72 baseline plus additional tunnelling costs associated with WRP_154)	£452,561,531.38
Enabling works for WRP_154 (site clearance – based on 6ha)	£4,038,090.00
TOTAL	£456,599,621.38

7.5 WRP_157 Cost Review

Estimated Lands Cost

7.5.1 The parcel is almost entirely covered with buildings or ancillary car parking and circulation areas. The estimated cost for acquiring WRP_157 is [REDACTED] . See Appendix D for assumption and considerations that informed this estimation.

Estimated Engineering/Construction Cost

7.5.2 Table 7.3 below summarises the engineering/construction costings associated with the development of WRP_157.

Table 7.3: Estimated engineering costings associated with WRP_157

Aspect	Provisional Cost
Tunnelling costs (WRP_72 baseline plus additional tunnelling costs associated WRP_157)	£541,095,017.70
Enabling works for WRP_157 (site clearance – based on 6ha)	£4,038,090.00
TOTAL	£545,133,107.70

7.6 WRP_158 Cost Review

Estimated Lands Cost

7.6.1 The estimated cost of acquiring WRP_158 is [REDACTED]. See Appendix D for assumption and considerations that informed this estimation.

Estimated Engineering/Construction Cost

7.6.2 Table 7.4 below summarises the estimated engineering/construction cost associated with the development of WRP_158.

Table 7.4: Estimated engineering costings associated with WRP_158

Aspect	Provisional Cost
Tunnelling costs (WRP_72 baseline plus additional tunnelling costs associated WRP_158)	£531,305,341.40
Enabling works for WRP_158 (site clearance – based on 6ha)	£4,325,664.00
TOTAL	£535,631,005.40

7.7 Summary

7.7.1 Table 6.7 below provides a summary of each parcel’s estimated total engineering cost (tunnel and enabling works), these are presented in the table as low to high for total estimated cost.

7.7.2 Appendix D presented the land acquisition costs. For the purpose of this analysis, a land value per ha is presented at Table 6.8. The estimated cost/ha is also presented in the table as low to high.

7.7.3 As set out above within Section 6.2.5, the estimated additional pipeline and tunnel cost is driven by the assumption that the pipeline for each parcel would need to connect into the preferred route option in as short a distance as possible. Due to all the parcels being located within the same 1.5km radii from Budds Farm WTW as WRP_72, it has been assumed that if a detailed route selection process was undertaken for each parcel the best performing routes that would be identified would predominantly follow those identified for WRP_72. Therefore, to connect each of the parcels into the other component parts of the project it has been assessed that we would need to connect into the existing WRP_72 routes as efficiently as possible. Therefore, WRP_72 tunnel costs is used as a baseline for developing the estimated tunnel costs for each parcel.

7.7.4 WRP_157 and WRP_158 have the highest estimated engineering costs, largely as a result of the additional tunnelling length required. WRP_72 and WRP_154 have lower estimated costs as the tunnelling lengths required are reduced. In addition, the estimated land value of WRP_72 is the lowest cost, which is likely due to it currently being undeveloped.

7.7.5 The output of the cost review is that WRP_72 has the lowest overall estimated cost when looking at the land purchase, tunnelling and enabling works costs that were considered.

Table 7.5: Total estimated cost for construction (tunnel and enabling)

Parcel	Engineering Cost		Total Cost (tunnelling and enabling) (6 ha)
WRP_72	Tunnelling	£428,094,681.33	£431,195,831.13
	Enabling works	£3,101,149.80	
WRP_154	Tunnelling	£452,561,531.38	£456,599,621.38
	Enabling works	£4,038,090.00	
WRP_158	Tunnelling	£531,305,341.40	£535,631,005.40
	Enabling works	£4,038,090.00	
WRP_157	Tunnelling	£541,095,017.70	£545,133,107.70
	Enabling works	£4,038,090.00	

Table 7.6: Estimated land per hectare cost

Parcel	Size (ha)*	Land (£/ha)
WRP_72	9.3	██████████
WRP_157	26.1	██████████ ██████████
WRP_154	8.0	██████████
WRP_158	6.1	██████████ ██████████

8 Conclusion

8.1 Continual Review Process Outcomes

8.1.1 This report has presented the continual review for the WRP site selection work (Stages 5 and 6) as part of the Project. Stage 5 of continual review work involved re-review of all SW’s parcels presented in the Gate 2 submission by:

- Initially sifting the parcels using size and environmental and planning constraints; and
- Then undertaking qualitative assessments of environmental, planning, constructability and engineering risks.

8.1.2 Stage 6 of continual review involved reviewing the drawing rules for existing parcels to ensure the criteria had been applied consistently and identify any new parcels for consideration. New and amended parcels were assessed against all criteria outlined within Stages 4 of site selection process and subjected to qualitative assessment of environmental, planning, constructability and engineering factors.

8.1.3 Table 8.1 shows the outcomes of the environmental, planning, construction and engineering review.

Table 8.1: Summary table of RAG ratings of Parcels from Stages 5 and 6

Stage 5 – Existing Parcels				
Parcel	Area (ha)	Environment	Planning	Constructability and Engineering
WRP_58	7.75	Red	Yellow	Yellow
WRP_68	5.60	Red	Green	Yellow
WRP_70	3.70	Red	Yellow	Yellow
WRP_72	9.31	Yellow	Green	Green
WRP_76	5.52	Yellow	Green	Red
WRP_149	6.1	Yellow	Yellow	Yellow
Stage 6 – New and Amended Parcels				
WRP_153	7.41	Yellow	Yellow	Yellow
WRP_154	8.0	Green	Green	Yellow
WRP_155	16.4	Red	Yellow	Yellow
WRP_157	26.1	Green	Green	Yellow
WRP_158	6.1	Green	Green	Yellow
Budds Farm WTW	19.0	Red	Green	Red

8.1.4 Stage 5 and 6 identified two new parcels and amended three of the parcels identified at Stage 1. The results of the qualitative review and professional judgement by competent experts from the project’s environmental, planning and engineering teams was then used to determine the best performing site against the defined criteria (Tables 2.1-2.3). This resulted in WRP 72 being identified as the best performing site and Parcels WRP 154, WRP_157 and WRP_158 all considered to be equally suitable after WRP_72 (Paragraph 6.1.9). This is due to the developed nature of the sites with similar environmental and planning risks. Explanation for this ranking is set out in Section 6.1.

8.1.5 A cost review was then undertaken to understand the estimated land acquisition, enabling and tunnelling costs associated with each of the parcels.

8.1.6 WRP_157 And WRP_158 have the highest estimated engineering costs, largely as a result of the additional tunnelling length required. Whereas WRP_72 and WRP_154 have lower costs as the

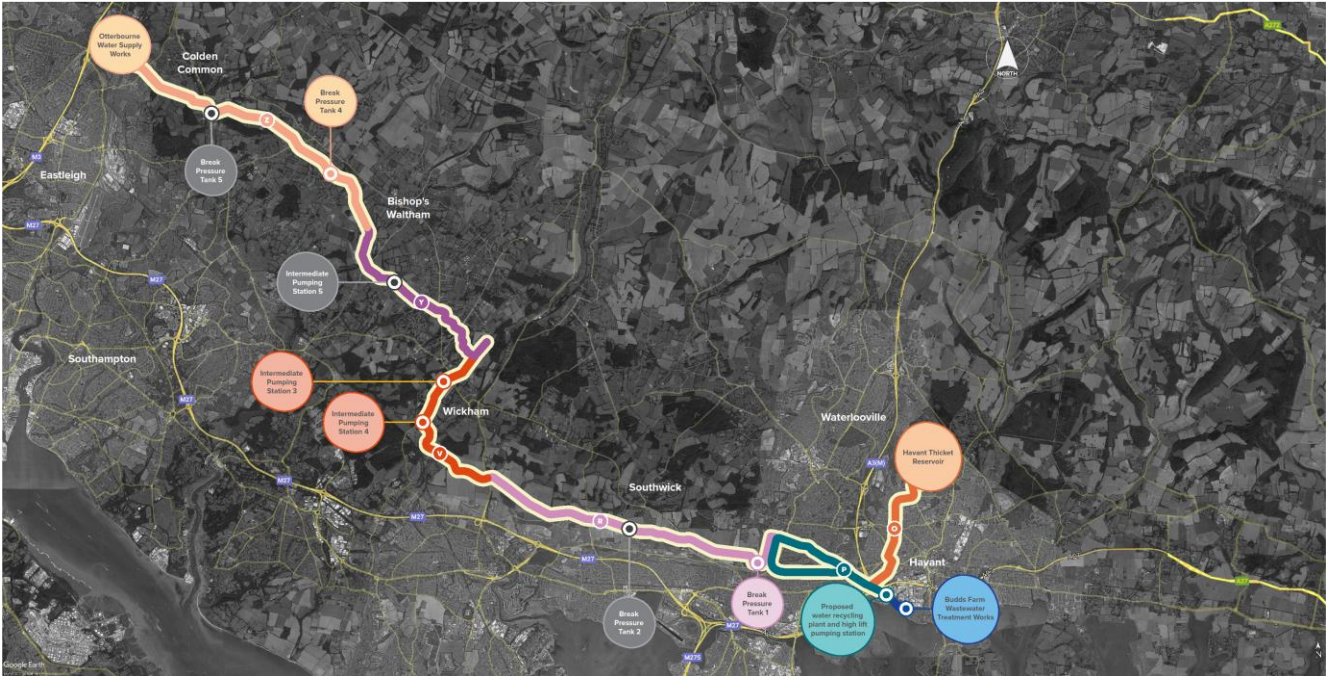
tunnelling lengths required are reduced. In addition, the estimated land value of WRP_72 is the lowest cost/ha which is likely due to it currently being undeveloped. Therefore, this shows that WRP_72 has the lowest overall estimated cost when looking at the land purchase, tunnelling and enabling works that were considered.

- 8.1.7 When considering cost alongside the outcomes of Stage 5 and 6, WRP72 continues to be the best performing parcel against the defined **criteria** as well as having the lowest estimated cost per hectare and estimated construction costs. The cost review has not been a determining factor and does not change any of the assumptions on site suitability but does support the outcomes of Stage 5 and 6 and confirms Parcel WRP 72 as the preferred option.

8.2 Next Steps

- 8.2.1 Following the conclusion of the continual review, WRP_72 remains the preferred parcel to develop the WRP through the site selection process which has considered environmental, planning, construction and engineering criteria and it has the lowest estimated cost. This reinforces the outcomes of Stage 0-4 of the WRP site selection process and indicates that a land acquisition strategy is required to ensure that WRP_72 can be acquired so that the Project can be successfully consented and delivered.
- 8.2.2 Further engagement with SSE should still be undertaken to determine the availability of WRP_158 and whether this is a reasonable alternative site, as this could result in greater preference being given to this parcel ahead of WRP_154 and WRP_157 given there would be more certainty of the land availability.
- 8.2.3 Continued engagement with HBC and other consultees in relation to the outcomes of the continual review and wider scheme development process is required as SW progresses through the DCO pre-application process. SW will continue to have regard to consultee feedback as it develops the Project in preparation for submitting its DCO application.
- 8.2.4 In the context of the potential for WRP 72 to be built out, scenario testing of this parcel should be undertaken. WRP_72 has an outline planning permission and therefore, should development be implemented, the project would need to consider the potential (if any) implications of this. A sensitivity test is recommended and is currently being produced by the projects Planning team, which considers four stages of development for the consented scheme. The output of the sensitivity testing will be considered against the outputs of the continual review process reported in Section 6 to better understand how, if at all, the outcomes of the site selection process would change depending on the stage of development the site is at.

Appendix A – Pipeline Corridor Sections map from 2022 consultation brochure



Appendix B – Flood Risk Considerations

The NPSWRI states that “the applicant should identify and assess the risks of all forms of flooding to and from the development, and demonstrate how these flood risks will be managed, taking climate change into account”. This appendix sets out the approach of the continual review to considering the risk of flooding to a proposed WRP site, and the risk of increasing flood risk elsewhere as a result of the development of the WRP.

The following approaches have been used to determine the flood risk of WRP parcels:

- Environment Agency Flood Risk Mapping for Planning
- Water for Life Hampshire: Coastal Study for Site Selection Assessment (2020)
- Sea Level Rise as a Result of Climate Change

Environment Agency Flood Risk Mapping for Planning

The Environmental Agency set out flood zones which are determined by the potential risk of flooding. These flood zones have been used to assess the vulnerability of WRP parcels to flood risk. The flood zones are as follows:

- Flood Zone 1 ‘Low Probability’ – Land at less than 1 in 1000 (0.1%) annual probability of river or sea flooding;
- Flood Zone 2 ‘Medium Probability’ – Land between 1 in 100 (1%) and 1 in 1000 (0.1%) annual probability of river flooding, or between 1 in 200 (0.5%) and 1 in 1000 (0.1%) annual probability of sea flooding;
- Flood Zone 3 ‘High Probability’ – Land at 1 in 100 (1%) or greater annual probability of river flooding, or 1 in 200 (0.5%) or greater annual probability of sea flooding.

Water for Life Hampshire: Coastal Study for Site Selection Assessment

The Coastal Study assessment to support site selection for the Water for Life Hampshire programme was undertaken by Royal HaskoningDHV in 2020 to define a ‘coastal resilience line’ that will delimit the area seaward of which a major infrastructure development would be appropriate.

This process comprised the following steps:

- Collation of existing mapping within GIS;
- Review and interpretation of GIS mapping by coastal geomorphologists to understand the coastal geomorphology and coastal dynamics; and
- Identification of a coastal resilience line.

In defining the coastal resilience line, the following information was used:

- Shoreline Management Plans;
- Flood defence mapping;
- Coastal defence mapping;
- National Coastal Erosion Risk Mapping;
- Flood Risk Maps (Flood Zones);
- Sediment Transport Study; and
- Future coast.

Sea Level Rise as a Result of Climate Change

This approach to the flood risk of the WRP responds to paragraph 3.7.2 of the NPSWRI which states “the applicant should demonstrate that there are no critical features of infrastructure design which may be

seriously affected by credible maximum climate change scenarios. Any potential critical features should be assessed, taking account of the latest credible scientific evidence on, for example, sea level rise, and on the basis that necessary action can be taken to ensure the operation of the infrastructure over its estimated lifetime through potential further mitigation or adaptation”.

Given the requirement by the NPSWRI to demonstrate that the WRP would not be vulnerable to sea level rise in a credible maximum climate change scenario. The government guidance for climate change allowances for flood risk assessments¹⁰ states that “*where it is appropriate to apply a credible maximum scenario, use the H++ allowance*”. The H++ allowance requires the use of a 1.9 m change to relative mean sea level to 2100.

Figure B.1 shows the projected flood depth for the credible maximum scenario for an area surrounding Budds Farm WTW. Figure B.2 shows the projected flood level for the credible maximum scenario for the same area.

Figure B.1 and Figure B.2 show that it is projected that WRP_76, WRP_154, WRP_157 and WRP_158 would be vulnerable to sea level rise within the credible maximum scenario. WRP_72 is not vulnerable to sea level rise within the credible maximum scenario.

¹⁰ [Flood risk assessments: climate change allowances - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

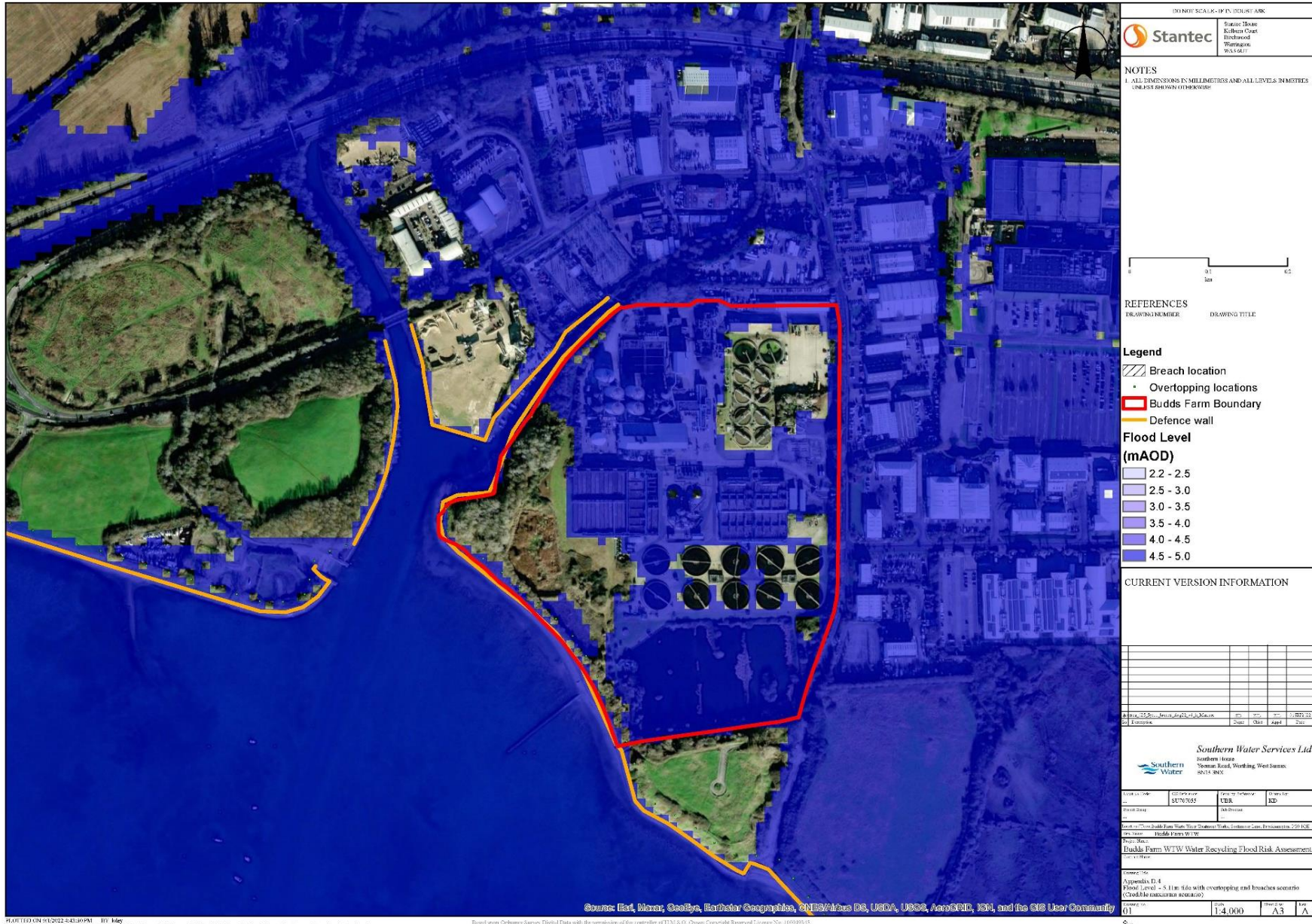


Figure B.2: Projected flood level for the credible maximum climate change scenario in proximity of Budds Farm WTW



Appendix C – Site 72 ETS risk document

Appendix D – WRP Land Cost Review Report