

# View Response

Response #1306258

**From** Hallam Land Management

**Date** Started: 28 Jan 2026 08:57. Last modified: 28 Jan 2026 09:10

**Status** Complete

1.

**Should the Council produce a Local Plan Part 2 Review under the existing planning system, or should a single full Local Plan Review be undertaken under the new system?** (please tick one option and provide a reason for your answer)

- ☐ Produce a Local Plan Part 2 Review under the existing system
- ☒ Produce a single Full Local Plan under the new system
- ☐ Other

Please enter any additional comments

We consider that the Review of the Local Plan should be undertaken as a comprehensive, full review. This is on the basis that a full plan review will allow a more comprehensive approach to strategic issues such as addressing the unmet needs of the Derby housing market area (HMA). This is also an opportunity ensure that all policies contained would age at the same pace, avoiding a potential policy vacuum where policies in part of the plan become out of date more quickly than others.

2.

**Where should the housing needs be met?** (Please provide site details including projected delivery timescales and the specific need being met).

Hallam consider that a balanced approach to the distribution of housing should be taken. Development in South Derbyshire should be both focused around the Derby fringe to take account of the housing to meet the City's unmet housing need, whilst also focusing meaningful housing development in Key Service villages to meet the need of the remainder of the District.

It is highlighted that in the existing Local Plan only 5% of the total housing allocations (745 dwellings) were distributed across the Key Service Villages. 15% of housing was allocated at Drakelow Park (2,060 dwellings) which will predominantly meet housing need from the Burton area. It is therefore considered that in the emerging Plan more housing circa 20% should be distributed across Key Service Villages that will meet housing need specific to the District, as well as on the Derby Fringe.

Our site at Burton Road, Overseal will help to satisfy a balanced distribution of housing. has capacity for 220 dwellings, and whilst the site is located within the River Mease SAC a bespoke mitigation scheme has been designed and approved by Natural England to ensure the development is nutrient neutral. A copy of this has been forwarded directly to the Planning Policy team and should be read alongside. Subject to being identified as a housing allocation in the Local Plan Part 2 publication version in 2026 an outline planning application could be submitted next year and determined in 2027. Allowing for the submission of Reserved Matters and discharge of pre-commencement conditions development on the site could commence as early as 2028, with construction of the first dwellings commencing in 2029.

3.

**Are there other mechanisms that the plan should consider to securing housing delivery in addition to allocating specific sites (e.g. identifying indicative broad locations/areas for future growth adjacent to existing settlements, extending settlement boundaries, supporting certain**

**Changes of Use)?** (Please provide a reason for your answer)

☒ Yes

☐ No

Please enter any additional comments

As part of the emerging Local Plan settlement boundaries should be reviewed to take into account recent development for example the settlement boundary in Repton should extend south at Mount Pleasant road to capture the cul de sac at Mill Hill.

4.

**Are there any other issues that the Council should consider when ensuring the timely delivery of the right homes in the right places (e.g. policy criteria for looked after children, re-allocating unimplemented employment allocations)?** (Please provide an answer to your question)

☒ Yes

☐ No

Please enter any additional comments

The Council should ensure that sites are deliverable and viable. Sites where no meaningful delivery has taken place or funding is not available to support its delivery should not be reallocated.

5.

**What specific accommodation needs should the Local Plan address through allocations (e.g. extra care accommodation for older people, care home provision for looked after children etc.)?** (Please provide

details)

To compliment the delivery of specific accommodation, development should be evenly distributed and sufficient allocations should be made in Key Service Centres to help lower the ageing populations in these areas. Accommodation needs should be identified through the evidence base.

6.

**What could the Council do to speed up delivery on strategic allocations?** (Please provide details)

«No response»

7.

**Should the Council allocate land South of Mackworth for development within the plan period?** (Please provide a reason for your answer)

☐ Yes

☒ No

Please enter any additional comments

Whilst Amber Valley are still pursuing Mackworth as an allocation there are key concerns surrounding its delivery given the landowners have withdrawn their support. The site is not considered deliverable, and as the AVBC emerging Local Plan examination has not finished SDDC should not be reliant on Mackworth coming forward, other options with greater prospects of delivery in SDDC should be considered.

8.

**Are there other steps that the Council could take to accelerate housing delivery on other sites?** (Please provide a reason for your answer)

☒ Yes

☐ No

Please enter any additional comments

Policy wording to facilitate flexible affordable housing provision should be included, particularly facilitating appropriate cascade mechanisms. This is pertinent as funding for delivery of affordable housing through Section 106 has significantly stalled sites throughout England.

9.

**Do you agree that settlement boundaries should be drawn around the urban edge of Derby, Drakelow and Stanton and any new allocations?** (Please provide a reason for your answer)

☒ Yes

☐ No

Please enter any additional comments

Yes, to provide clarity and inform future decision making.

10.

**Do you agree with the principles for assessing the settlement boundaries, as set out in Appendix 1?** (Please provide a reason for your answer)

☒ Yes

☐ No

Please enter any additional comments

The main principles are agreed with however; the inclusion of Principle 4 (d) is not. The identification of important gaps should be informed by evidence, not a subjective call and should be identified through policy measures. It is not for a settlement boundary review to determine what is an 'important gap' it should be an arbitrary exercise which is reflective of the current built form of a settlement.

11.

**What issues regarding the settlement boundaries should the Council consider?** (Please provide a comment)

-

12.

**Do you agree with the retail hierarchy?** (Please provide a reason for your answer)

☐ Yes

☐ No

Please enter any additional comments

«No response»

13.

**Should the Council redefine the retail centre in Swadlincote as a commercial centre which would allow for a wider range of uses?** (Please provide a reason for your answer)

☐ Yes

☐ No

Please enter any additional comments

«No response»

14.

**What issues regarding Swadlincote Town Centre redevelopment should the Council consider?** (Please provide details)

«No response»

15.

**Should the Council define the boundaries of all of the retail areas within the District?** (Please provide a reason for your answer)

☐ Yes

☐ No

Please enter any additional comments

«No response»

16.

**Should the Council include a locally specific Green Belt policy (beyond the NPPF policy) that defines what appropriate development is within the context of 'disproportionate' and 'limited infilling'?** (Please provide a reason for your answer)

☐ Yes

☐ No

Please enter any additional comments

«No response»

17.

**If you answered yes to question 16, what should the policy consider?**

«No response»

18.

**Should the Council undertake a Green Belt review with a specific objective of identifying what, if any, Grey Belt exists within the district?** (Please provide a reason for your answer)

☐ Yes

☐ No

Please enter any additional comments

«No response»

19.

**What other sites and/or options should the Council consider for providing Gypsy and Traveller accommodation?** (Please provide details)

«No response»

20.

**Are there any other issues that the Council should consider when meeting the needs of Gypsies and Travellers?** (Please provide details)

«No response»

21.

**Are there any additional policies/other issues that the Local Plan should address?** (Please provide a reason for your answer)

☐ Yes

☐ No

Please enter any additional comments

«No response»

22.

**Are there any amendments required to the existing policies to reflect implemented changes to national planning policy, policy guidance or Regulations?** (Please provide a reason for your answer)

☐ Yes

☐ No

Please enter any additional comments

«No response»

23.

**Are there better/alternative mechanisms that the Council should use to secure the required infrastructure?** (Please provide a reason for your answer)

☐ Yes

☐ No

Please enter any additional comments

«No response»

24.

**Where there is the potential need for long-term management / maintenance of open space, SUDS or other infrastructure, should the Council introduce a policy requiring these to be adopted by a public authority unless there is clear evidence that this is not feasible.** (Please provide a reason for your answer)

☐ Yes

☒ No

Please enter any additional comments

No. The Council should not mandate the adoption of on-site infrastructure and consider everything on a site-by-site basis with policy flexibility. Otherwise, this may introduce additional costs to delivery that affect viability.

25.

**Do you have any further/additional comments?** (Please provide details)

A nutrient neutrality phasing note will be submitted separately, as discussed earlier.

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED]

CAUTION! This Email was sent from outside SDDC. Only open links and attachments you're expecting.

[Report](#)

Good morning,

In support of the above representation reference: 1306258, please find enclosed the supporting Vision Document and Technical Note which outlines our proposed bespoke Phosphate Mitigation to allow the site to come forward in lieu of any developer contribution scheme previously operated.

If you would like I am happy to arrange a meeting to discuss how the mitigation would operate I would be happy to oblige.

Kind regards.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



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[REDACTED]

[REDACTED])

# Land at Burton Road, Overseal

## Vision Document

April 2022

On behalf of



**Hallam Land  
Management**

Prepared by

**Turley**

## Introduction

This document has been prepared on behalf of Hallam Land Management Ltd (Hallam) to present the emerging vision for the development of a new residential community on land at Burton Road in Overseal. The land provides a sustainable opportunity to deliver the future housing needs of Overseal and the wider area, and Hallam shall be promoting the site through the forthcoming Local Plan review process and seeking to engage with the local community to further refine the proposals.



## The Site

The site extends to around 9.2 hectares and comprises a greenfield site on land on the western edge of Overseal, South Derbyshire, close to the village centre.

The site is defined by a small frontage to Burton Road (A444) to the north east. The north eastern and eastern boundaries are defined by the rear gardens of residential properties. Open land lies to the north west and south west of the site.

The site comprises three fields, which are bounded by hedgerows and a several mature trees.

Beyond these boundaries, the village of Overseal lies to the east which comprises a historic core and with more modern development towards the south.



Aerial  
Site Location  
Plan

## Hallam Land Management

Hallam's role is to promote and develop land opportunities through the UK planning system. Hallam's strategic land and promotion expertise serves to work with the local planning authorities in helping landowners who are seeking to develop or promote land through the system.

We are very proud of our successful track record in developing both difficult and challenging sites. This assures landowners that we have the right credentials to be given significant responsibility of managing land through ownership, option or planning promotion agreement.

Hallam has been acquiring, promoting, developing and trading in strategic land since 1990 and we operate throughout England, Scotland and Wales. Hallam has experienced land and planning teams based in Bristol, Glasgow, Leeds, London and Northampton, as well as the Sheffield head office, working with landowners, developers, local authorities, communities and other parties to bring forward development opportunities.





## Turley

Turley is a multi-disciplinary consultancy providing planning and design services across the UK. We have a team of urban designers and planners providing expert design advice to both the public and private sector. Our work includes masterplanning, public realm design and planning, and townscape and landscape visual studies and assessments. We work on projects both directly to external clients and also as part of multi-disciplinary project teams led by Turley. The business is employee-owned.

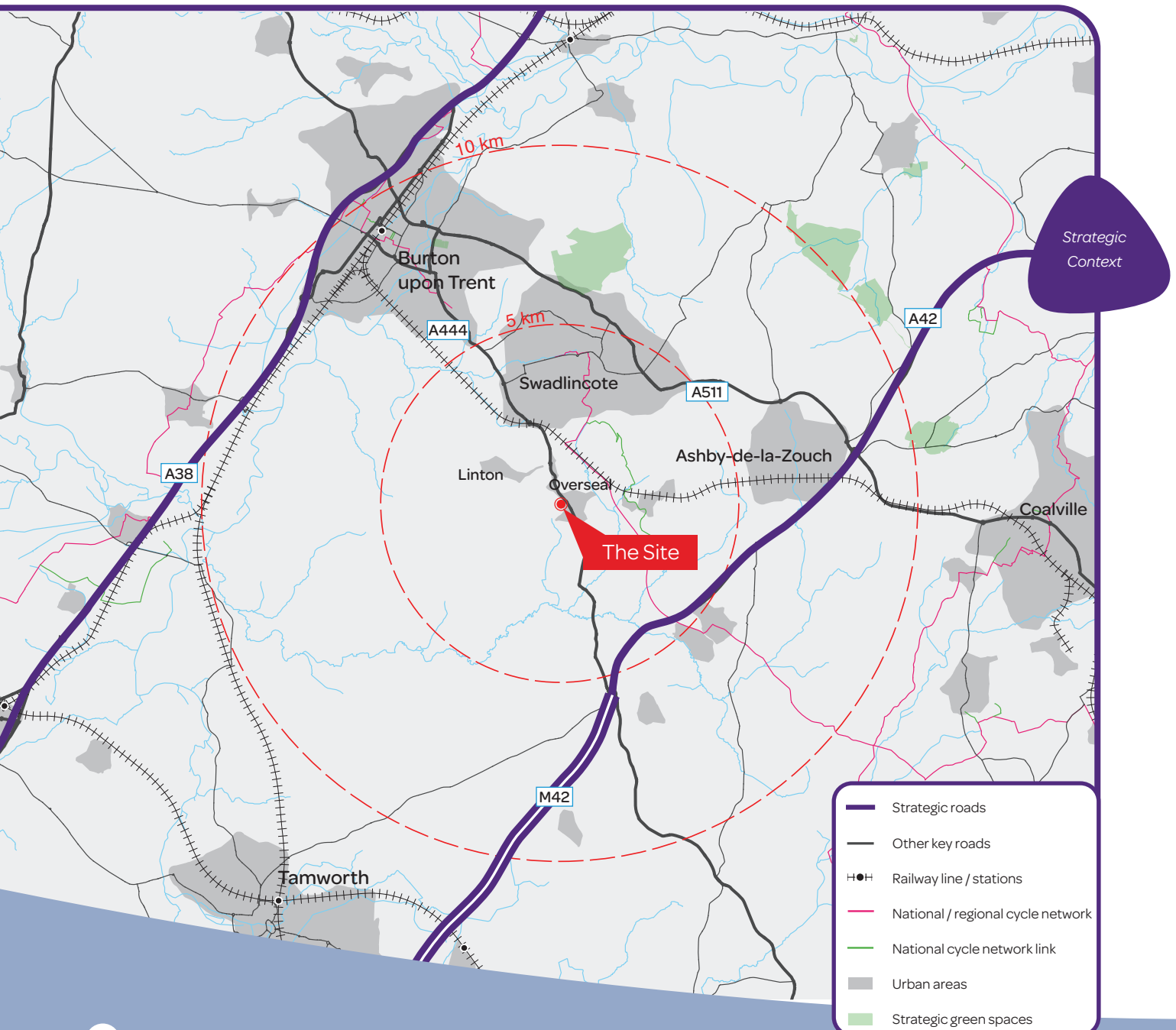
The realisation of well-designed development is a critical part of our approach to planning. It has been since the company's founding nearly 40 years ago. We never stand still, continually refining and enhancing how we work, drawing in skills and experience and investing in our people, to provide a better service to our clients. We challenge ourselves to be nothing short of the best masterplanning team in the country, working with clients and communities to help realise value and deliver meaningful change; places we are proud of.

## Strategic Context

The site is located within Overseal, a village located within South Derbyshire, approximately 8 km south east of Burton upon Trent. The site is well connected to the regional road network located in close adjacent to the A444 which connects the site to Burton (8 km to the north west); Leicester (40 km) to the south east, via the A42 and A50; Birmingham City Centre (44km to the south west) via the M42; and Nottingham (50km to the north east), via the A42 and A50. Junction 11 of the M42 motorway is located 7 km to the south offering connections to the wider motorway network. East Midlands Airport is located 30 km to the north east of Overseal.

The site is currently served by bus route number 19, which operates between Burton and Ashby-de-la-Zouch at hourly intervals in each direction throughout the week.

In summary, the site is in a sustainable location, with good access to the strategic road and motorway network; and to public transport facilities.



## Local Context

The site is located towards the western urban edge of Overseal, and is bound by existing development to the north east and east; with a small frontage to Burton Road (A444) to the north.

Within a short walking distance of the site are local amenities including a primary school; convenience store, post office, public house; church; local park; bus stop; and medical centre.

In summary, the site is in a sustainable location, with good access to local shops, services and community facilities, all within a 10 minute walk.



## The Strategic Choice for Housing

South Derbyshire District Council adopted their Local Plan (Part 1) in June 2016, which identified a need to deliver at least 12,618 dwellings over the plan period up to 2028. Based upon an assessment of existing services and facilities, the Local Plan Part 1 identifies Overseal as a 'Key Service Village', which together with the 'Urban Areas' of Swadlincote and areas on the periphery of Derby and Burton upon Trent, will be the main focus for housing growth.

The South Derbyshire Local Plan (Part 2) was adopted in 2017 and covers non-strategic housing allocations and development management policies. The Part 2 plan identified two sites within Overseal for residential development, totalling some 135 dwellings.

The District Council's Environmental and Development Services (EDS) Committee agreed in August 2021 to review Part 1 of the Local Plan, in accordance with Paragraph 33 of the NPPF (2021), and as such, preparation of the Local Plan Review and the associated evidence base is underway. As part of this, the site has previously been promoted through a Call for Sites exercise in December 2019, to inform the Strategic Housing and Employment Land Availability Assessment (SHELAA), a key document which will underpin the Local Plan Review. It is anticipated that the assessments of all sites submitted in 2019 will be published shortly.

South Derbyshire District Council have previously considered the site through their Strategic Housing Land Availability Assessment (SHLAA) (2014) where it was given site Reference (S0294). The assessment identified that there are **no overriding factors which would limit the development of the site**, and indeed any constraints identified "are able to be overcome in the future".

## Technical Constraints

The site represents the most sustainable location for growth at Overseal. It is located wholly within Flood Zone 1, representing a low risk of flooding (less than 0.1%/1 in 1,000 years).

There are no heritage assets located within or adjacent to the site. Furthermore, the site is not constrained by any environmental designations.

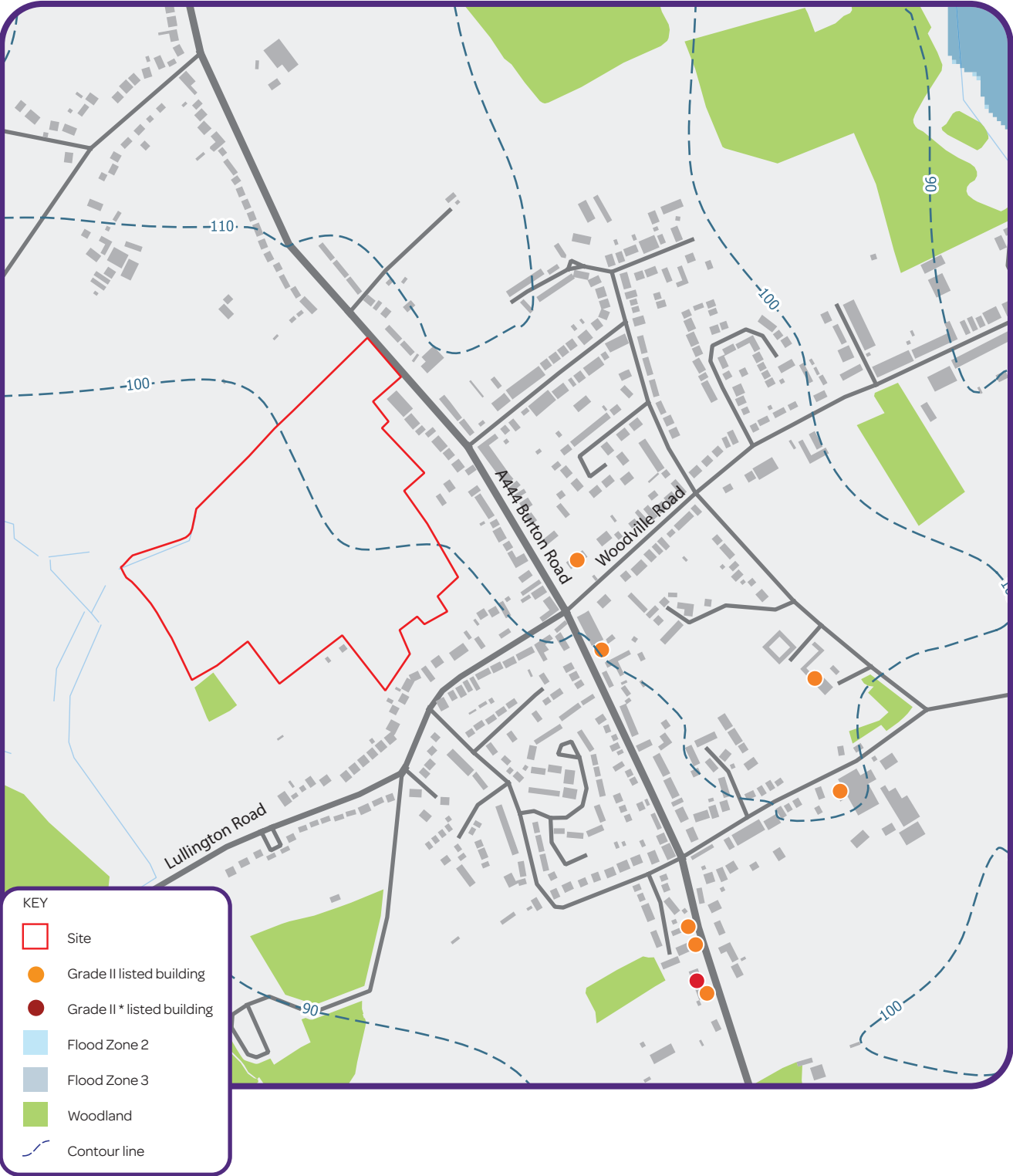
It will be accessed from Burton Road, a principal 8.5m wide single carriageway, which connects Overseal with the A42 and the A38, which are both strategic roads serving the M42 to the south and Swadlincote and Burton upon Trent to the north.

### Ideal for future development

The constraints plans opposite clearly demonstrates how the site is ideally located for future housing growth, as it is:

- Located away from any heritage constraints including listed buildings and conservation areas
- Located away from any landscape constraints
- Contained by residential development to the north east and south east
- Located outside any areas identified at risk of flooding or allocated flood plain
- Located along a route (Burton Road) which is capable of handling additional traffic needs.

Local Constraints



## Site Specific Opportunities and Constraints

Located in close proximity to a range of local facilities and on the edge of the village with views looking out over adjacent countryside, the site represents the opportunity to deliver a highly sustainable but locally responsive development specific to Overseal.

The north western and south western boundaries of the site provide a key opportunity to create a softer edge to the village, with low density housing looking outwards to the open land, set back behind a generous green buffer, which represents an opportunity to deliver biodiversity net gains.

The topography falls down towards the south western boundary. This lowest part of the site is generally open on to the north west, south west and south east, and therefore provides an opportunity to provide surface water attenuation as part of an integrated Sustainable Drainage System (SuDs).

The site is within the River Mease Special Area of Conservation (SAC). Any future planning application would take this into consideration to ensure an appropriate Drainage Strategy and associated developer contributions are proposed.

The site's topography provides the opportunity for the internal road network to follow the site's natural form and create interesting streetscape views throughout the development.

Proposals should be designed to create a place with strong identity and should accord with the following principles:

- Respect and enhance the site's existing natural assets, including trees and hedgerows
- Provide safe pedestrian connectivity into the village, to promote the use of sustainable modes of transport
- Create a landscape driven network of high quality green routes and amenity spaces
- Support and enhance local wildlife and habitats and create new habitat to provide Biodiversity Net Gain.

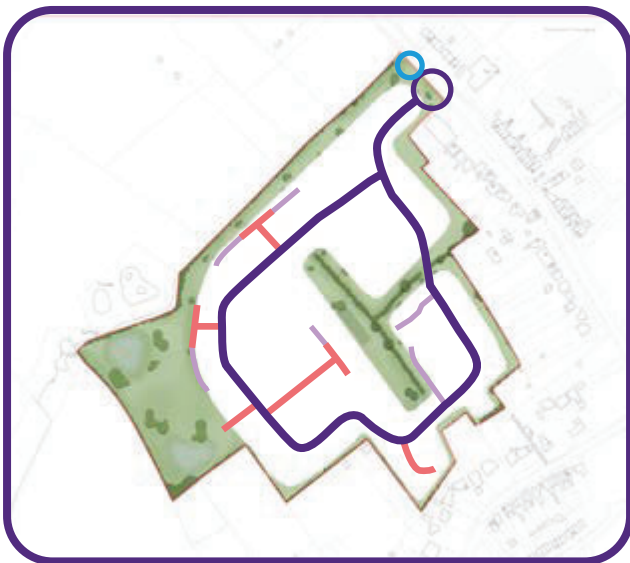


## Key Design Principles



### Landscape Principles

The site's existing green infrastructure is embraced and enhanced by locating landscape buffers and corridors along existing hedgerows and tree groups. This breaks up the urban form of the development, mitigating its visual impact when viewed from the surroundings, whilst also creating a high quality network for green open spaces.



### Access and Movement Principles

A single vehicular access points is taken from Burton Road , connecting to the circular loop that serves the development. A logical hierarchy of secondary, tertiary and pedestrian routes complement the main route and forms a coherent movement network.



### Development Block Principles

Outward facing perimeter blocks are created to create a legible layout which creates a new responsive settlement edge.

Development parcels respond to the site's immediate attributes and context through the delivery of a number of character areas to ensure development is locally responsive and specific to Overseal.

## The Vision

It is our vision to create a landscape-led development to enhance existing landscape features and create a responsive development in Overseal.

The illustrative layout, shown opposite, demonstrates that the site has the size and flexibility to accommodate a range of homes at varied densities, integrating a network of green spaces for future residents and those in immediate surroundings, to enjoy. This would create an inclusive community, well-connected to local services and facilities, as well as to the recreational spaces of Overseal.

The layout demonstrates that the site has potential to support a developable area of approximately 5.7 hectares resulting in a development yield of circa 210 units. The remaining 3.5 hectares of land outside the developable area can be utilised for the purposes of Public Open Space (POS) and recreation, drainage, access, habitat planting and landscape mitigation through a network of high quality green spaces and routes.

### Biodiversity

As the existing site comprises of agricultural land, which are low distinctiveness habitats, Biodiversity Net Gain (BNG) of the site can be delivered with the c. 60/40 split of developed area to green infrastructure that the proposed development provides.

The proposed layout retains the majority of existing hedgerows, which are high in biodiversity value. Compensatory hedgerow planting can be provided to mitigate any loss.

1. New vehicle entrance
2. Primary street
3. Shared lanes
4. Shared private driveways
5. Feature spaces
6. Public Open Space (POS)
7. Local Equipped Area of Play (LEAP)
8. Attenuation basin
9. Retained hedgerow/trees







A vision for a  
new sustainable  
community  
within a relaxed  
landscape setting  
for Overseal

## Summary and Conclusions

This Vision Document has been prepared on behalf of Hallam Land Management in response to the growing housing requirements of Overseal and the wider area, and the need for South Derbyshire District Council to plan strategically for sustainable housing growth to help meet the needs of future generations.

It seeks to demonstrate that land at Burton Road, Overseal is a suitable, sustainable and deliverable site for future development and is the most logical location for future housing.

Through an assessment of the site's spatial and environmental context, it has been demonstrated that the site is both suitable and appropriate for a sustainable and high quality future residential development, to meet the housing needs of Overseal, as well as South Derbyshire as a whole.





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## 10896 Burton Road, Overseal

### Technical Note 2 Rv3: Nutrient Assessment Review

24<sup>th</sup> April 2023

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## 1 Executive Summary

- 1.1 Brookbanks is appointed by Hallam Land Management to complete a Nutrient Assessment Review for the proposed **210** dwellings at Burton Road, Overseal. This note reviews the anticipated Total Phosphorus (TP) budget and mitigation options available to ensure the delivery of a nutrient neutral development.
- 1.2 It is important that the development achieves nutrient neutrality in response to guidance for *Water Quality and Nutrient Neutrality Advice* published on the 16<sup>th</sup> of March 2022 from Natural England (NE). This letter focuses on proposals with the potential to affect the water quality of natural habitats near and downstream of residential developments (Natural England, 2022). Surface and foul water discharged from the proposed development enters watercourses that discharge into River Mease SAC. Water pollution and eutrophication are considered a threat to its condition. Therefore, it is imperative that nutrients generated from this proposed development are mitigated prior to reaching the Habitats Sites.
- 1.3 The proposed development is anticipated to connect into Overseal Wastewater Treatment Works (WwTW) and both operational permit limit for pre and post 2030 have been assessed. As due to the Levelling Up and Regeneration Act (LURA), water companies have a duty to upgrade WwTW to the highest technically achievable limit (TAL) of treatment by 1<sup>st</sup> April 2030.
- 1.4 Additionally, a review of the Sustainable Drainage Systems (SuDS) proposals on site has been undertaken in line with guidance released by CIRIA, in 2022, for the potential treatment of phosphorus in surface water runoff (Bradely *et al*, 2022). The nutrient budgets have been calculated inclusive of 50% SuDS TP removal.
- 1.5 With the above considered and integrated into the baseline conditions calculations, an assessment of the anticipated TP budget is set out in this technical note. The findings of the nutrient budget analysis, TP budgets for pre and post 2030. The TP budget generated by the proposed development pre 2030 is **23.80kgTP/year** and post 2030 the TP budget reduces to **7.74kgTP/year** due to WwTW upgrades to permit limits enforced by LURA. Offsite mitigation options consist of either a constructed wetland or fallowing land alone. Or an alternative option could include an onsite Package Treatment Plant (PTP) together with either an offsite constructed wetland or fallowing land. The details of these mitigations solutions are outlined in Section 5 - Mitigation of this technical note.
- 1.6 The mitigation measures outlined are **indicative only** and require further detailed analysis to confirm their feasibility.

## 2 Proposed development context

- 2.1 This note outlines a strategy to mitigate against and offset the phosphorus impact of the proposed development of up to **210 dwellings**.

### Location

- 2.2 **Figure 2-1** shows the location of the proposed development site (red line), comprising of up to **210** residential dwellings across an area of circa **8.7ha**.

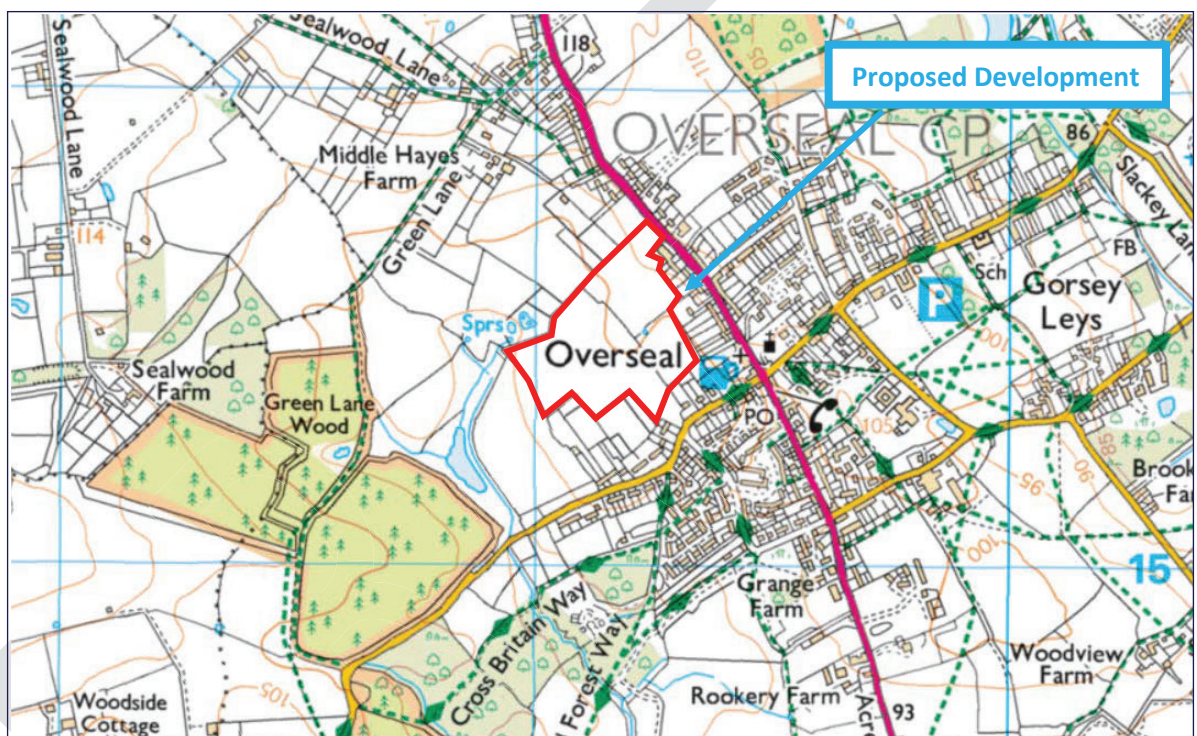


Figure 2-1: Site Location (Bing, 2024)

- 2.3 The proposed development site is located to the west of Overseal, in South Derbyshire. The proposed development site is bound to the north by agricultural fields and Burton Road, to the east by the existing residential area of Overseal, and to the south and west by more agricultural fields.
- 2.4 An unnamed watercourse, a tributary of the River Mease, runs to the north west of the proposed development site, flowing in a southerly direction before joining the River Mease, circa **2.6km** south of the proposed development site near Acresford Road. The site is located within the Mease from Hooborough Brook to Trent Water Body Catchment.

## 3 Catchment Analysis

### Topography

- 3.1 Topography across the proposed development site is characterised by gentle falls from the A444, located at the north east boundary, falling towards Lullington Road in a south-west direction.
- 3.2 The lowest level rests at circa 96mAOD located at the south west side of the proposed development site and rises to circa 108mAOD in the north east boundary, adjacent to the A444.

### Existing Drainage Network

- 3.3 Contours were derived from the Environment Agency's LiDAR, in order to determine the size and shape of the catchments and direction of flow of the proposed development area (EA, 2023).
- 3.4 The unnamed watercourse is a tributary of River Mease which joins after Acresford Road, approximately 2.8km south of the proposed development site.
- 3.5 **Figure 3-1** below identifies and illustrates the location of these identified hydrological networks.

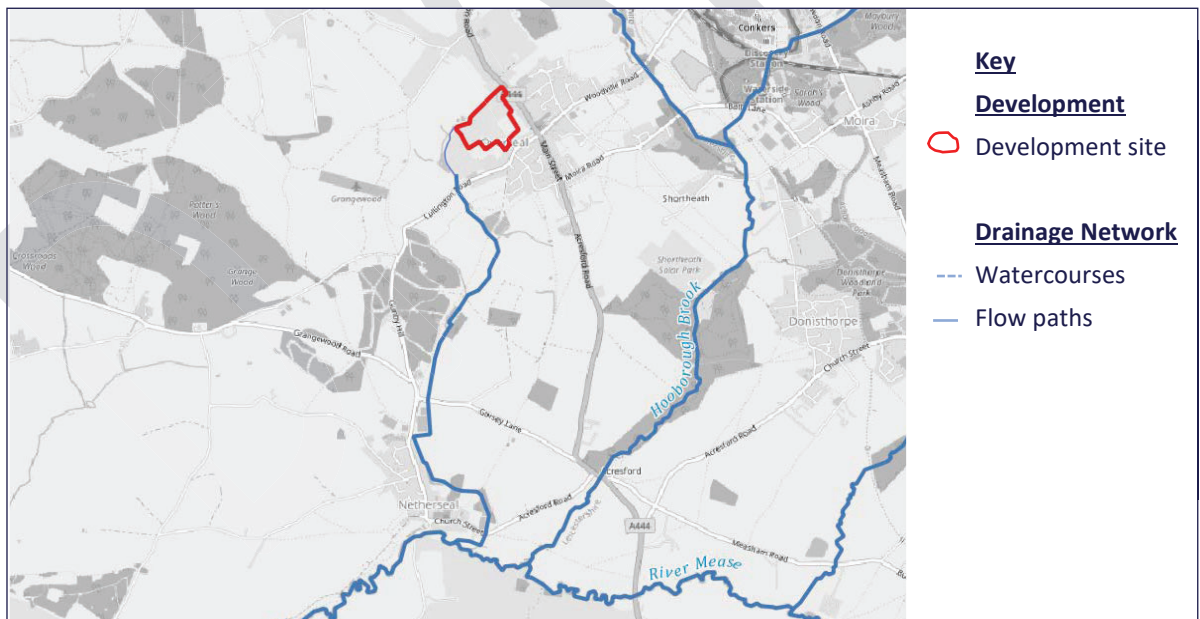


**Figure 3-1: Location of Identified Drainage Network**

- 3.6 There are no ponds located within the site boundary, as confirmed by historic map records.

## Catchment Characteristics

- 3.7** The Flood Estimation Handbook (UKCEH, 2023) is an industry wide recognised system for catchment analysis, and has been used to determine the catchment of the unnamed watercourse.
- 3.8** With LiDAR and topographic contours, the catchment has been refined and divided into two sub catchments. The larger catchment is **23.5ha** to the north, with the smaller catchment being **6.5ha** located east of the site; together totalling at **30ha**.
- 3.9** After analysing data provided by (NFRA, 2023), the average annual rainfall for the site is **625.01-650mm/year**.
- 3.10** **Figure 3-2** illustrates the watercourse that falls within the sites catchment area.

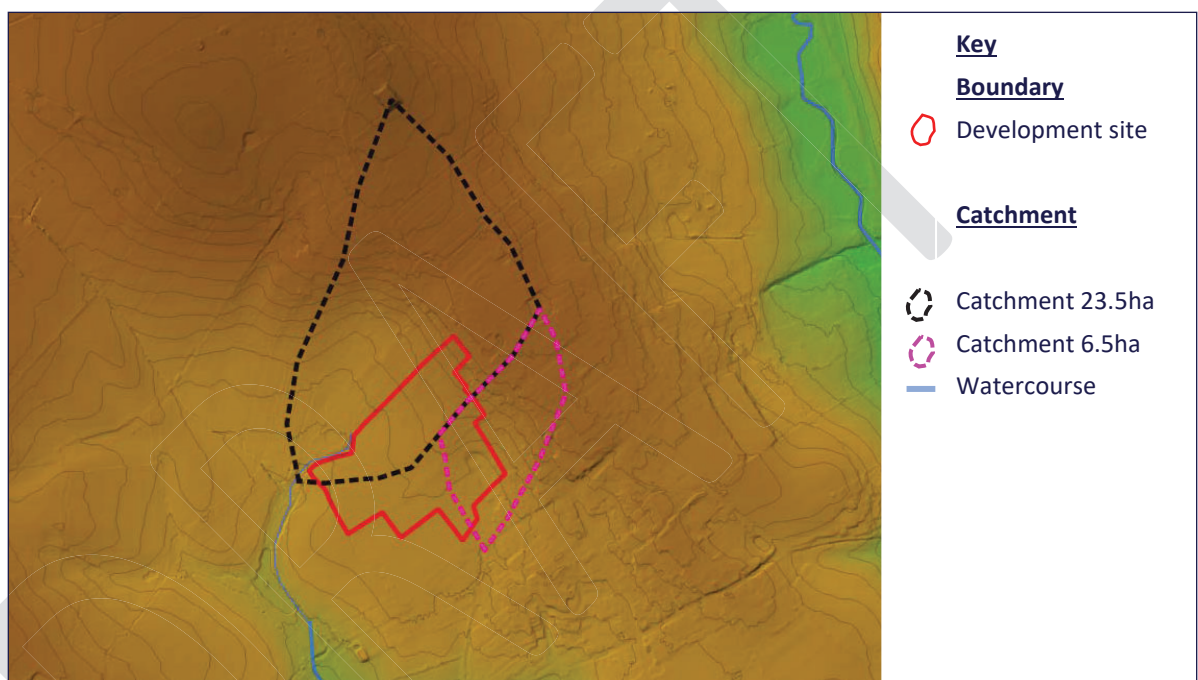


**Figure 3-2: Watercourse Catchment Area**

## Land Use Classification

- 3.11** Land use is the surface utilisation of all developed and vacant land at a specific point, at a given time and space.
- 3.12** According to the Food and Agriculture Organization (FAO), land use defines human activities which are directly related to land, making use of resources, or having an impact on them. In that context, the emphasis is on the function or purpose for which the land is used and particular reference is made to *“the management of land to meet human needs”* (FAO, 2021).
- 3.13** According to the National Land Use Database (NLUD), there are 13 different orders, subdivided in groups where the land can be classified. However, for the purpose of this study the land use will be defined in four different classifications: Agricultural, Grassland, Woodland and Urban (LandInform Ltd, 2006).

- 3.14** Using Historic Ariel imagery, the current land use of the site has been determined as Cereal Crop.
- 3.15** According to the Nutrient Budget calculator guidance document v1 (March 2022) cereal crop land can be described as *Agricultural areas on which cereals, combinable crops and set aside are farmed* (Natural England, Ricardo, 2022c).
- 3.16** The current land use classification for the site is shown in **Figure 3-3**.

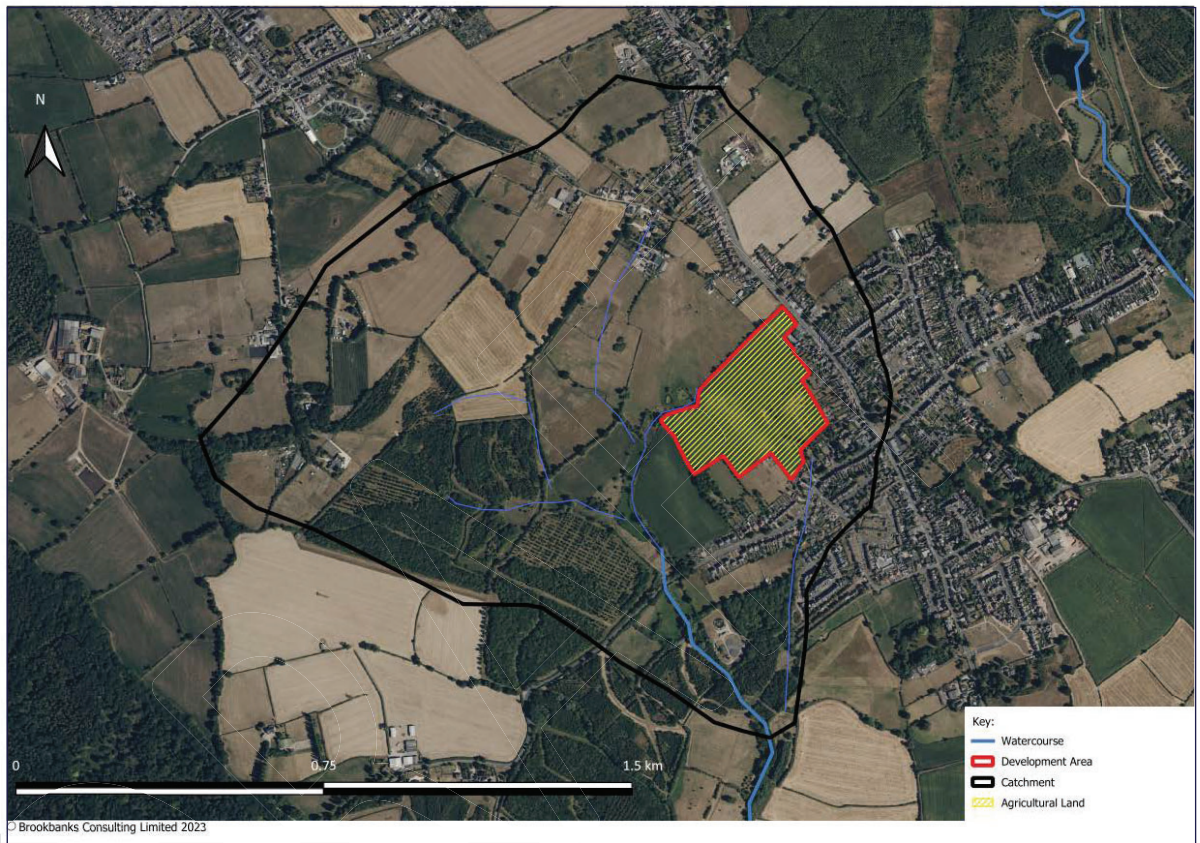


**Figure 3-3: Catchment Land Use Classification**

## Soil Drainage

- 3.17** Soils composition is another parameter that will affect the surface water runoff and infiltration of the site. It can enhance, reduce or even impede the infiltration process in a specific catchment area.
- 3.18** With the support of the LandIS- Soilscape, it is possible to determine areas according to the drainage capacity. From this it has been determined that the drainage type at the proposed development site is slightly impeded drainage (Cranfield University, 2024).
- 3.19** **Figure 3-4** below shows the drainage capacity for the proposed site.

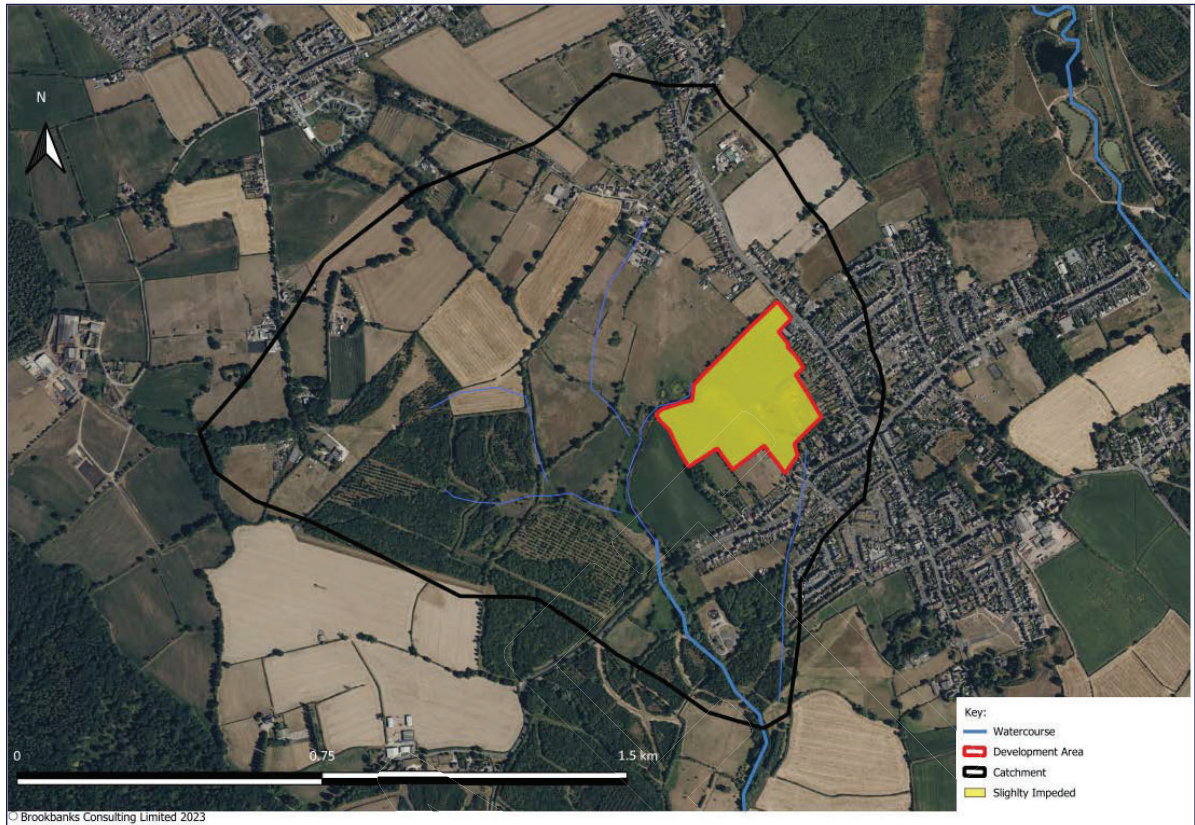


**Figure 3-4: Site Drainage**

- 3.20** Figure 3-4 shows that the proposed development lies completely within slightly impeded drainage soils, which are slightly acid loamy and clayey soils.

## 4 Nutrient Budget Analysis

- 4.1** This section applies a five-stage methodology using the River Mease SAC Nutrient Neutrality Budget Calculator, provided by Natural England and Ricardo (NE Ricardo, 2024) to assess the TP status at Burton Road, Overseal.
- 4.2** Review of the most recent guidance available has provided a robust strategy for accurately determining the TP budget for the proposed development site (NE, 2022).

### Review of the proposed SuDS Network

- 4.3** In accordance with the Flood and Water Management Act (2010) Schedule 3, incorporation of SuDS into new development is required (UK Public General Acts, 2024). The use of SuDS aims to treat and control surface water runoff as close to the source as possible, in order to protect any downstream habitats and enhance the value of the site. NE have advised that application of SuDS in a scheme has the potential to treat a certain amount of TP, dependent on the types of SuDS embedded. CIRIA (2022) released further guidance by Bradley *et al*, around this, titled 'Using SuDS to reduce phosphorus in surface water runoff'. In order to determine the amount of TP the proposed development may generate, a review of the schemes' drainage and engineering layouts is required for an accurate assessment.

- 4.4** CIRIA C753 define the SuDS management train by ‘four pillars’, these include, water quality improvement benefits, flood risk alleviation, creation of habitat sites for wildlife and for societal purposes also. Therefore, not only should SuDS be used to improve water quality but also address all ‘four pillars’ of SuDS design.
- 4.5** According to CIRIA, a SuDS management train comprises of a series of SuDS techniques, with its purpose being to improve the flow and quality of surface runoff. The beginning of the treatment train consists of prevention, i.e., minimising TP outfall. This is followed by source control. Thirdly, site control includes interconnection of SuDS techniques. Finally, regional control comprises of extensive SuDS infrastructure which ensures runoff from an entire development or several developments is managed appropriately.
- 4.6** The following calculations are based on an indicative surface water drainage strategy (10896-DR-01 B). A two-stage SuDS management, is proposed for the site in the form of attenuation basins and swales. With these SuDS initiatives incorporated into this proposed development, there could be potential for a mean removal of 50% of the total TP budget (Bradley *et al*, 2022). At the time of writing, the drainage strategy (10896-DR-01 B) is the best available information, however, this drainage strategy is subject to change during the detailed design stages. Furthermore, the nutrient budget calculations are inclusive of the current SuDS design and are therefore subject to change.

## Baseline Pre-2030 Total Phosphorus Calculations

- 4.7** Within the advice documentation, Natural England outline a practical methodology on calculating Nutrient Neutrality. There are five main stages in determining the changes in nutrients from the current cultivated land to the proposed built development. The five-stage process encompasses the following steps:

### **1. Calculating wastewater TP Load from the proposed development**

- Calculating additional population
- Wastewater Volume
- Wastewater Treatment Works
- Applying a deduction of TP Loading
- TP Load discharged from the Wastewater Treatment Works.

### **2. Calculating TP Load from current land use**

- Calculate the Total Existing Agricultural Land
- Confirmation and Calculation of TP Loss from Farm Type

### **3. Calculating the adjusted TP Load to account for the future land uses**

- Calculation of TP Load from proposed future Land Uses
- Combine the TP Load from the proposed future Land Uses

### **4. SuDS**

- Nutrient loading from future land use after treatment through SuDS
- Calculation of the TP removal rate of the future residential urban land based on the proposed SuDS scheme implemented on site

### **5. TP Load Budget**

- Calculate net change in TP from Land Use changes, inclusive of TP removal by SuDS
- Determine the TP Budget which includes 20% buffer when a positive figure is calculated

**4.8** Water consumption is assumed to be 110l/p/day. However, NE guidance released in March 2022, “*Nutrient Neutrality Generic Methodology*” (NE, 2022) suggest an additional 10l/p/day is included when assessing water consumption in order to account for changes to less efficient fittings throughout the lifetime of the development. However, this additional buffer has been removed, due to the nature of this development, and the lower occupancy rate for the East Midlands according to the Office of National Statistics (ONS) Census data from 2021. This has been accepted for similar developments. Therefore, water consumption is anticipated to be 110l/p/day. This figure is applied in the calculations.

**4.9** In order to carry out these calculations, **Table 4-1** sets out the assumptions applied.

| Calculation Assumptions                  |                                                                                             |                                                                                                                                                                                                                |
|------------------------------------------|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of dwellings                      | 210                                                                                         | Residential dwellings. Based on proposed site designs provided by Matthew Puce (Senior Development Planner at HLM) via email to Dean Swann (Technical Director at Brookbanks) on 21 <sup>st</sup> July 2023. . |
| Average occupancy                        | 2.35                                                                                        | Persons per dwelling (According to ONS, 2021 – East Midlands)                                                                                                                                                  |
| Average Water Usage                      | 110                                                                                         | Litres/person/day (Explanation within para 4.11)                                                                                                                                                               |
| Total Development Site Area              | 8.70                                                                                        | Ha (cereal crop, indicated by historical aerial imagery, Google Earth, 2024)                                                                                                                                   |
| Future Land Usage                        | 7.50                                                                                        | Ha - Urban area (based upon 29 dwelling per hectare)                                                                                                                                                           |
|                                          | 0.54                                                                                        | Ha – Greenspace (assumed remaining areas of site layout as greenspace)                                                                                                                                         |
|                                          | 0.66                                                                                        | Ha – Water (based upon drainage strategy – 10896-DR-01 B)                                                                                                                                                      |
| Treatment Works for Foul Water Discharge | Overseal WwTW (EA, 2024)                                                                    |                                                                                                                                                                                                                |
| TP Consent Limit at WwTW                 | 1                                                                                           | mgP/l (According to the River Mease SAC NE Ricardo Calculator)                                                                                                                                                 |
| Soil Type                                | <i>Slightly impeded drainage</i> - acid loamy and clayey soils (Cranfield University, 2024) |                                                                                                                                                                                                                |
| Average Annual Rainfall                  | 625.1-650                                                                                   | mm/year (National Flow River Archive, 2024)                                                                                                                                                                    |
| Nitrate Vulnerable Zone                  | Yes                                                                                         | For Surface Water (UKSO, 2024)                                                                                                                                                                                 |

**Table 4-1: Development Assumptions**

- 4.10** Based on the assumptions set out above in **Table 4-1** and using the calculator provided by NE for the River Mease (NE, 2024), **Table 4-2** sets out the TP budget baseline conditions inclusive of SuDS treatment pre-2030.

| Natural England Guidance Stage             |                                                             | (kgTP/year)  | Explanation                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------|-------------------------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                          | Wastewater Total Phosphorus from Proposed Development       | 17.84        | Based on 1mgP/l permit limit at Overseal WwTW *                                                                                                                                                                                                                                                                                                                                                      |
| 2                                          | Phosphorus Load from Existing Land Use                      | 2.77         | Cereal Crop leachate rate 0.32kgTP/ha/year *                                                                                                                                                                                                                                                                                                                                                         |
| 3                                          | Phosphorus Load from Proposed Future Development Land Use   | 9.51         | Residential Land Leachate Rate (7.50ha) at 1.32kgTP/ha/year*<br>Greenspace Land Leachate Rate (0.54ha) at 0.02kgTP/ha/year *<br>Water Leachate Rate (0.66ha) at 0.00kgTP/ha/year *                                                                                                                                                                                                                   |
| 4                                          | Nutrients removed from future land use after SuDS treatment | 4.75         | Percentage of flow entering the SuDS is 100% of the 7.50ha proposed residential development.*<br>The indicative drainage strategy includes a 2-part treatment train in the form of swales and attenuations basins which means 50% of nutrients from the residential land can be removed (Bradley <i>et al</i> , 2022). The indicative drainage strategy is subject to change during detailed design. |
| TP Budget (with 20% buffer where positive) |                                                             | <b>23.80</b> | <b>KgTP/year</b> (Stage 1 + ((Stage 3 – Stage 4) – Stage 2)) + 20% buffer                                                                                                                                                                                                                                                                                                                            |

**Table 4-2: Total Phosphorus Budget \* according to the NE, Ricardo River Mease Nutrient Calculator**

- 4.11** Due to the positive budget resulting from change in land use at the site, mitigation measures will be required to offset additional **23.80kgTP/year**. This figure includes the nutrients removed as a result SuDS implementation on site as well as including a 20% buffer required by NE.

## Impact of LURA upon Phosphorus Conditions

- 4.12** Department for Environment, Food and Rural Affairs (DEFRA) have highlighted that it is logical to target Wastewater Treatment Works (WwTW) for nutrient reduction, highlighting that these facilities contribute the second largest amount of nutrients to the watercourses. The Levelling Up and Regeneration Act (LURA) gained royal assent on 26th October 2023 and therefore water companies in England will have a legal duty to upgrade wastewater treatment works by 2030 targeted areas to the highest Technically Achievable Limit (TAL) for nutrient permits operational in WwTW.
- 4.13** A 'Notice of designation of sensitive catchment areas 2024' published on January 25th, 2024, states that the River Mease SAC has been designated as a sensitive catchment area under the Water Industry Act 1991. It states that water companies in the listed catchment sensitive areas have a duty to ensure wastewater treatment works serving a population equivalent over 2,000 meet specified nutrient removal standards by 1<sup>st</sup> April 2030 (Gov.uk, 2024). According to Water Projects Online case study, Overseal WwTW has a population equivalent of 2,201 (Howard, 2014).
- 4.14** The LURA outlines nutrient pollution standards that will apply to sewage disposal works. Any plant identified as a *Phosphorus Significant Plant* should meet nutrient pollution standards by the upgrade date and thereafter. Regarding this proposed development Phosphorus is the nutrient of interest.
- 4.15** A *Phosphorus Significant Plant* is defined in the LURA as a plant that:

- “(a) Discharges treated effluent into a Phosphorus sensitive catchment area, and;
- (b) Is not an exempt plant in relation to the Phosphorus nutrient pollution standard.”

**4.16** Phosphorus pollution standards are defined in the LURA as:

- “(1) A Phosphorus significant plant meets the Phosphorus nutrient pollution standard if the concentration of total Phosphorus in treated effluent that it discharges is not more than 0.25 mg/l.”

## Baseline Post-2030 Total Phosphorus Calculations

**4.17** Based on the assumptions set out above in **Table 4-1** and using the calculator provided by NE for the Rier Mease (NE, 2024), **Table 4-3** sets out the TP budget baseline conditions inclusive of SuDS treatment post-2030.

| Natural England Guidance Stage             |                                                             | (kgTP/year) | Explanation                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------|-------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                          | Wastewater Total Phosphorus from Proposed Development       | 4.46        | Based on 0.225mgP/l permit limit at Overseal WwTW according to the LURA, including 90% of permit limit*                                                                                                                                                                                                                                                                                              |
| 2                                          | Phosphorus Load from Existing Land Use                      | 2.77        | Cereal Crop leachate rate 0.32kgTP/ha/year*                                                                                                                                                                                                                                                                                                                                                          |
| 3                                          | Phosphorus Load from Proposed Future Development Land Use   | 9.51        | Residential Land Leachate Rate (7.50ha) at 1.32kgTP/ha/year*<br>Greenspace Land Leachate Rate (0.54ha) at 0.02kgTP/ha/year *<br>Water Leachate Rate (0.66ha) at 0.00kgTP/ha/year *                                                                                                                                                                                                                   |
| 4                                          | Nutrients removed from future land use after SuDS treatment | 4.75        | Percentage of flow entering the SuDS is 100% of the 7.50ha proposed residential development.*<br>The indicative drainage strategy includes a 2-part treatment train in the form of swales and attenuations basins which means 50% of nutrients from the residential land can be removed (Bradley <i>et al</i> , 2022). The indicative drainage strategy is subject to change during detailed design. |
| TP Budget (with 20% buffer where positive) |                                                             | <b>7.74</b> | <b>KgTP/year</b> (Stage 1 + ((Stage 3 – Stage 4) – Stage 2)) + 20% buffer                                                                                                                                                                                                                                                                                                                            |

**Table 4-3: Post LURB Total Phosphorus Budget \* according to the NE, Ricardo River Mease Nutrient Calculator**

**4.18** Due to the positive budget resulting from change in land use at the site, mitigation measures will be required to offset additional **7.74kgTP/year** discharged from the site post- LURA. This figure includes the nutrients removed as a result SuDS implementation on site as well as including a 20% buffer required by NE. The indicative drainage strategy includes a 2-stage treatment train in the form of swales and attenuation basins, which is subject to change following detailed design.

## 5 Mitigation

**5.1** Mitigation can be delivered through many forms. Applicable for this proposed development, and considered in this report are three methods, namely:

- **Fallowing** – Taking land out of agriculture (recognised source of Phosphorus) and either replanting with woodland or grassland and not used for crop, grazing or fertilised for any growth.
- **Wetland** – Wetlands placed on a source of phosphorus for the absorption and or settlement of Phosphorus from the water source. Can be a traditional constructed wetland or a specific product designed known as a floating wetland which is specifically designed for nutrient removal.
- **PTP Installation** – An onsite PTP can lower the TP budget through reducing TP discharge via wastewater, to reduce the nutrient budget of the site.

**5.2** It is necessary to examine mitigation options both onsite and offsite, using a multitude of different techniques.

## Land Fallowing

- 5.3** Fallowing land involves taking agricultural land out of use to allow regeneration. It is considered an important management strategy for the restoration of soil productivity. Fallow land generally carries a lower leachate rate than land used for agricultural purposes due to a number of reasons, including removal of fertilisers, replenishes nutrients generally removed by crops and reduces erosion and leaching.
- 5.4** Applying a fallow rate buffer of **-0.02kgTP/ha/year** to the land proposed above can mitigate the proposed development site. This figure replicates the leachate figure provided in the NE 2024 River Mease SAC calculator for that of greenspace, woodland and shrubland, as this is considered a close match to fallowing land (i.e. not in agricultural use). This value is applied to the subsequent mitigation calculations.
- 5.5** At this stage and for the purpose of these subsequent calculations, assumptions have been made regarding the mitigation land. These assumptions are outlined in **Table 5-1**. It is important to note that the mitigation land should be located upstream of the River Mease SAC.

| Mitigation Land Assumptions  |                                                                                                                                                                                                                          |                                                                                                                                                                                       |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Catchment                    | Rier Mease                                                                                                                                                                                                               | This is the same catchment that the proposed development lies within.                                                                                                                 |
| Soil Drainage Type           | Impeded drainage                                                                                                                                                                                                         | It is assumed that the mitigation land will lie within impeded drainage soils. This soil types important for fallow land mitigation strategies, as it reduces the land take required. |
|                              | <i>Note: Impeded drainage soils are not necessarily required for a mitigation strategy comprising of a constructed wetland. As a constructed wetland can be lined to ensure efficient operation in nutrient removal.</i> |                                                                                                                                                                                       |
| Annual Average Rainfall (mm) | 625.01.650.00                                                                                                                                                                                                            | This is the same rainfall as the proposed development.                                                                                                                                |
| Nitrate Vulnerable Zone      | Yes                                                                                                                                                                                                                      | This is the same as the proposed development.                                                                                                                                         |

**Table 5-1: Mitigation land assumptions**

- 5.6** Calculations in Section 4 have determined that **23.80kgTP/year** requires mitigation under the current nutrient permit limit of 1mg/l at Overseal WwTW, whereas **7.74kgTP/year** requires mitigation post-2030 under the WwTW permit of 0.25mg/l. Fallowing options are outlined in **Table 5-2**. The land types where fallowing could be located and the fallow rates for each of these land types is used to determine the land take required for a mitigation strategy to offset the proposed development pre and post 2030.

| Fallowing Mitigation Strategy                        |                                                  | Pre-2030                            | Post-2030                           |
|------------------------------------------------------|--------------------------------------------------|-------------------------------------|-------------------------------------|
|                                                      |                                                  | 23.80kgTP/year budget               | 7.74kgTP/year budget                |
| Land types where fallowing strategy could be located | Fallowing rates of each land type (kgTP/ha/year) | Amount of fallow land required (ha) | Amount of fallow land required (ha) |
| Cereal                                               | 0.51*                                            | 49.90ha                             | 15.85ha                             |
| General                                              | 0.49*                                            | 47.00ha                             | 15.25ha                             |
| Mixed                                                | 0.57*                                            | 42.00ha                             | 13.65ha                             |
| Lowland grazing                                      | 0.48*                                            | 50.00ha                             | 16.20ha                             |

**Table 5-2: Fallowing mitigation options pre and post 2030** \*This figure includes the leachate rate from the NE River Mease Calculator minus 0.02kgTP/ha/year fallow rate buffer.

- 5.7** The mitigation land should be located within the same catchment which affects the same Habitats Site and ideally in soils that are not freely draining. It is important to note that these mitigation considerations are **indicative only**, based on a number of assumptions. Any mitigation strategy is entirely dependent on the nature and characteristics of the mitigation land sourced and subject to further feasibility analysis at a later date.

## Constructed Wetland

- 5.8** In order to mitigate the proposed development, an offsite constructed wetland could be developed within the River Mease catchment to generate nutrient credits to offset the proposed development.
- 5.9** To indicatively determine a size of a constructed wetland required to mitigate the TP budget generated from the proposed development pre and post 2030, an average treatment rate of **12kgTP/ha/year** is used. This figure stems from research carried out by Land *et al.* in 2016. The research concluded that is appropriate to assume the median removal for a constructed wetland is **12kgTP/ha/year**.

| TP budget that requires mitigation (kgTP/year) |       | Median treatment rate of constructed wetlands according to Land et al, 2016 (kgTP/ha/year) | Size of constructed wetland required to mitigate the TP budget (ha) |
|------------------------------------------------|-------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Pre-2030                                       | 23.80 | 12.00                                                                                      | 1.99                                                                |
| Post-2030                                      | 7.74  | 12.00                                                                                      | 0.70                                                                |

**Table 5-3: Constructed wetland mitigation strategy required to offset TP budgets**

- 5.10** **Table 5-2** summarises that pre-2030, applying the median treatment rate of **12kgTP/ha/year** would mean that a constructed wetland of **1.99ha** would be required to mitigate a TP budget of **23.80kgTP/year**. Whereas, post-LURB, a **0.70ha** constructed wetland with an average treatment rate of **12kgTP/ha/year** would be required to mitigate a TP budget of **7.74kgTP/year**.

- 5.11** Further analysis of the functionality of the wetland installed will be required to ensure it is efficient in nutrient treatment. NE are currently discussing a polishing rate of between 40% to 50% therefore it is important to prove that at least twice the amount of TP would flow through the installed wetland.
- 5.12** These calculations are subject to a number of variables and therefore it is important to note that TP removal is dependent upon further robust wetland modelling.
- 5.13** Considering these calculations and existing drainage network, it is important to acknowledge that the installation of an onsite constructed wetland is not advisable due to the limited water flow originating from the stream onsite. Given the site's upstream location with minimal water flow, it is probable that the stream exhibits low TP concentrations, rendering it unsuitable for efficient treatment via an onsite constructed wetland. Consequently, the stream's phosphorus levels are deemed insufficient for effective treatment within the context of an onsite constructed wetland.

## On-Site Package Treatment Plant

- 5.14** **Table 5-4** shows the TP budget, should a PTP with a limit of **0.3mgP/l** be installed onsite. This limit has been selected based on development quantum and cost viability after liaison with PTP providers.

| Natural England Guidance Stage             |                                                             | (kgTP/year) | Explanation                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------|-------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1                                          | Wastewater TP from Proposed Development                     | 5.35        | Based on 0.3mgP/l permit limit from PTP, with 90% buffer applied.                                                                                                                                                                                                                                                                                                                                    |
| 2                                          | TP Load from Existing Land Use                              | 2.77        | Cereal Crop leachate rate 0.32kgTP/ha/year *                                                                                                                                                                                                                                                                                                                                                         |
| 3                                          | TP Load from Proposed Future Development Land Use           | 9.51        | Residential Land Leachate Rate (7.50ha) at 1.32kgTP/ha/year*<br>Greenspace Land Leachate Rate (0.54ha) at 0.02kgTP/ha/year*<br>Water Leachate Rate (0.66ha) at 0.00kgTP/ha/year *                                                                                                                                                                                                                    |
| 4                                          | Nutrients removed from future land use after SuDS treatment | 4.75        | Percentage of flow entering the SuDS is 100% of the 7.50ha proposed residential development.*<br>The indicative drainage strategy includes a 2-part treatment train in the form of swales and attenuations basins which means 50% of nutrients from the residential land can be removed (Bradley <i>et al</i> , 2022). The indicative drainage strategy is subject to change during detailed design. |
| TP Budget (with 20% buffer where positive) |                                                             | 8.81        | kgTP/year (Stage 1 + ((Stage 3 – Stage 4) – Stage 2)) + 20% buffer                                                                                                                                                                                                                                                                                                                                   |

**Table 5-4: TP budget with PTP Installation \* according to the NE, Ricardo River Mease Nutrient Calculator**

- 5.15** Installing a PTP onsite as a mitigations strategy means the proposed development generates a positive TP budget of **8.81kgTP/year**. Thus meaning, additional mitigation options are required to fully offset this proposed development.
- 5.16** Additional mitigation measures comprising of fallowing land within impeded soil drainage is outlined in the **Table 5-5**. The amount of fallow land required to mitigate the TP budget of **8.81kgTP/year** differs across the different land types.

| Nutrient budget that requires mitigation post PTP treatment: 8.81kgTP/year |                                                  |                                                                         |
|----------------------------------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------------------|
| Land types where fallowing strategy could be located                       | Fallowing rates of each land type (kgTP/ha/year) | Amount of fallow land required to mitigate TP budget post PTP treatment |
| Cereal                                                                     | 0.51*                                            | 17.29ha                                                                 |
| General                                                                    | 0.49*                                            | 18.00ha                                                                 |
| Mixed                                                                      | 0.57*                                            | 15.50ha                                                                 |
| Lowland grazing                                                            | 0.48*                                            | 18.40ha                                                                 |

**Table 5-5: Fallow land mitigation options to offset the TP budget post PTP treatment** \*This figure includes fallow rate of 0.02kgTP/ha/year.

- 5.17** To summarise the calculations from **Table 5-4** and **Table 5-5**, both an onsite PTP with a nutrient permit of **0.3mg/l** and fallowing **15.50ha** of mixed agricultural land ensures the delivery of a nutrient neutral proposed development. Note: Cereal, general, mixed and lowland grazing land can be used within the fallow land mitigation strategy, however, mixed land use it used as an example within this summary.
- 5.18** To mitigate the TP budget post PTP treatment (**8.81kgTP/year**), an alternative to fallow options outlined above, could be a constructed wetland offsite. The mitigation land assumptions are the same as those outlined in **Table 5-1**, however, impeded drainage soils are not necessarily required as the constructed wetland could be lined to ensure they have efficient operation for nutrient removal. A **0.74ha** constructed wetland with an average treatment rate of **12kgTP/ha/year** is required to mitigate **8.81kgTP/year**. Both an onsite PTP with a nutrient permit of **0.3mg/l** and **0.74ha** constructed wetland ensures the delivery of a nutrient neutral proposed development.
- 5.19** Brookbanks have reviewed the feasibility of installing a PTP onsite. To compliment this, PTP supplier, Marsh Industries and New Appointment and Variations (NAVs) company, Albion Water, have been contacted to discuss the viability of installing an onsite PTP, set out below.

#### **Installation**

- 5.20** A PTP could be located at the western extent of the proposed development, adjacent to the watercourse that bounds the site. It is proposed that treated effluent from the plant could be discharged into the watercourse. This is subject to discussion with the Environment Agency (EA) and/or the Lead Local Flood Authority (LLFA). The PTP should be placed down-wind and out of major sight lines of the general population of the proposed development.
- 5.21** Albion Water have confirmed that a technically achievable limit for TP is 0.225mg/l. To achieve this treatment permit it would require post biological treatment which involves tertiary solids removal such as a disc filter, sand filter, or similar. Therefore, an assumption of 0.3mg/l on site at Burton Road, Overseal with a 90% buffer applied is considered to be robust at this stage.

5.22 A PTP indicative location is illustrated in **Figure 5-1** below.



**Figure 5-1: Indicative PTP Location**

5.23 Brookbanks have contacted Marsh Industries, a PTP supplier that works closely with Albion Water, to gather indicative sizing and costs for a PTP to serve the proposed development. The size and costs of PTPs is dependent on housing and bedroom mix for the site to determine a Population Equivalent (PE). As this scheme is currently at Outline Application Stage, this level of detailed information has not yet been determined. However, for the purposes of this note, Marsh Industries have provided indicative costings and sizing, outlined below.

5.24 The estimation below is based on a mixture of 210 dwellings, therefore **three of each** of the following treatment plants will be required in principle.

**Marsh Ultra Polylok 280PE Sewage Treatment Plant Pumped Outlet**

3000mm Dia. x 10200mm Long x 3600mm High

800mm Inlet Invert / 1000mm Outlet Invert

**Marsh GEM APS 280PE Phosphate Reduction Unit Gravity Outlet**

Sizes TBC but approx. 2.5m dia. x 5m long

5.25 Although this is subject to the future bedroom mix of the development, this should be considered when designing the PTP into the proposed development.

### **Adoption**

- 5.26** Once a PTP is installed, it is important that a long term maintenance regime is put in place. Albion Water have provided an Approval In Principle (AIP) and/or Letter of Support (LoS) for adoption of the PTP to serve circa 210 dwellings at Burton Road, Overseal (see **Appendix A**). This is not a legally binding document, it is rather a statement that outlines that the treatment plant can be adopted at the site.
- 5.27** An AIP provides the Local Planning Authority (LPA) with assurance that the proposals are viable and an acceptable long term solution for the site. It is important to note that once adopted, the PTP would transfer over to SDS Ltd. ownership to maintain through a New Appointment and Variations (NAV) agreement.

### **Permits**

- 5.28** It is assumed that Albion Water would co-ordinate negotiations with the Environment Agency (EA). It is understood that the EA process could extend up to 36 months to obtain a permit for discharge into the watercourse.

## **6 Summary and Limitations**

- 6.1** This report has set out an initial appraisal of the phosphorus budget for the proposed development at Burton Road, Overseal, and has set out a mitigation strategy for delivering a nutrient neutral development. It is noted that an onsite SuDS system could assist in reducing the nutrient budget from the proposed developments' surface water discharge. This option has been integrated into the proposed development.
- 6.2** Nutrient mitigation strategies have been outlined within this note for consideration. This includes following of offsite land or development of an offsite constructed wetland as a stand-alone solution. These strategies are subject to further review as offsite land is sourced and reviewed. It should be noted that a Shadow Habitats Regulations Assessment (HRA) will be required in order to set out the necessary methods for following of the land should this approach be taken.
- 6.3** Alternatively, a mitigation strategy comprising of an onsite PTP together with either following land (offsite) or an offsite constructed wetland has been reviewed. The feasibility of a PTP on site has been assessed and from this Brookbanks have obtained an AIP from Albion Water and indicative costings/sizing from Marsh Industries. At this stage, a PTP on site at Burton Road, Overseal is considered a viable mitigation solution for the scheme. However, a PTP should be used in combination with either following land or a constructed wetland to fully neutralise the proposed development.

### **Limitations**

- 6.4** The conclusions and recommendations contained herein are limited to those given the general availability of background information and the planned usage of the site.
- 6.5** Third party information has been used in the preparation of this report, which Brookbanks, by necessity assumes is correct at the time of writing. While all reasonable checks have been made on data sources and the accuracy of data, Brookbanks accepts no liability for same.
- 6.6** The benefits of this report are provided solely to Hallam Land Management for the proposed development at Burton Road, Overseal.
- 6.7** Brookbanks excludes third party rights for the information contained in the report.

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## | Appendix A- Approval In Principle (AIP)

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12<sup>th</sup> September 2023

**Agreement to adopt in principle – Burton Road, Overseal, DE12 6JN.**

Dear Siobhan

Thank you for taking the time to share the detail of the above development regards the provision of water and wastewater services with our Technical Director.

I am pleased to advise that we are able to agree to the adoption of this site in principle.

Final agreement will be dependent on the following;

- Overview and acceptance of the water/wastewater infrastructure design
- Consultation on the waste treatment plant to ensure compliance with current environmental standards and requirements
- Infrastructure installation to agreed technical and industry quality standards
- Installation of waste treatment plant to manufacturers specifications
- Subject to final inspections
- Subject to permissions to discharge to a local watercourse.

Yours sincerely