From: [redacted]
To:
Cc:
Subject: Lichfields CEG Oughtibridge Draft Local Plan [LICH-DMS.FID124401]
Date: 20 February 2023 12:57:14
Attachments: image001.gif
50479_02 Oughtibridge site 8C Sheffield Plan rep 17.02.2023 v5.PDF

Dear Sir / Madam,
With reference to the submission below, please find attached CEG's full representation in PDF format to the Draft Local Plan.
I'd be grateful if you could confirm receipt of this attachment. We look forward to being kept informed about the progress of the Sheffield Local Plan and request the opportunity to speak at the forthcoming examination hearings.
Kind regards,

Matthew Gregg
Associate Director
Lichfields, 3rd Floor, 15 St Paul's Street, Leeds LS1 2JG
[redacted]

lichfields.uk

From: Have Your Say Sheffield <notifications@engagementhq.com>
Sent: 20 February 2023 12:36
To: Matthew Gregg [redacted]
Subject: Your response on Draft Local Plan
CAUTION: This email originated from an external source.
Thank you for your response on **Draft Local Plan**

Have Your Say Sheffield

Hi mg_lichfields,

Thank you for completing the survey Publication Draft Sheffield Plan representation. Your responses are listed below for your reference:

If you or your organisation are making a representation on behalf of another person, organisation or group, please tell us who it is and its role.

Commercial Estates Group (CEG)

Which document to you wish to make a representation on?

Part 1: Vision, Spatial Strategy, Sub-Area Policies and Site Allocations

Which section of the document is your representation on?

Chapter 3: Growth Plan and Spatial Strategy

Do you consider the Local Plan is legally compliant?

Yes

Do you consider the Local Plan is sound?

No

Do you consider the Local Plan complies with the duty to co-operate

Yes

Please give details of why you consider the Local Plan is not legally compliant or is unsound or fails to comply with the duty to co-operate. Please be as precise as possible. If you wish to support the legal compliance or soundness of the Local Plan or its compliance with the duty to co-operate, please also use this box to set out your comments.

This representation has been prepared by Lichfields on behalf of CEG. CEG objects to Policies SP1; SP2 and SA1. The plan is not positively prepared or consistent with national policy and is therefore unsound, and the delivery of 18,640 dwellings in the Central Sub-Area over the plan period is not realistic. For full representation please refer to '50479_02 Oughtibridge site 8C Sheffield Plan rep 17.02.2023 v5.pdf' emailed separately from [redacted]

Please set out the modification(s) you consider necessary to make the Local Plan legally compliant and sound, in respect of any legal compliance or soundness matters you have identified at 5 above. (Please note that non-compliance with the duty to co-operate is incapable of modification at examination). You will need to say why each modification will make the Local Plan legally compliant or sound. It will be helpful if you are able to put forward your suggested revised wording of any policy or text. Please be as precise as possible.

To ensure the effective delivery of the Growth Plan and Spatial Strategy and for the Plan to be sound under Paragraph 35 of the Framework, the following changes need to be implemented: 1. The housing requirement should be based on the Standard Method of 3,018 dwellings per annum (54,324 dwellings over the Plan period) which the NPPF makes clear should be the minimum number of homes needed. Should it be accepted that exceptional circumstances do exist to justify an alternative approach, then the housing need in Policy SP1 should be fully aligned with employment growth which Lichfields considers to be 2,275dpa. 2. The size, type and tenure of housing needed for different groups in the community needs to be reflected in the housing supply and spatial distribution, including affordable housing, families with children and older people. 3. A more realistic number of dwellings in the Central Sub-Area needs to be proposed which does not assume that all of the proposed allocations in the trajectory will come forward if they do not have planning permission, particularly in years 1 to 5 of the Plan period. Applying a lapse rate of 50% for site allocations without planning permission reduces the delivery of housing in the Central SubArea to 13,371 dwellings. 4. On the above basis, the shortfall in housing supply under the Standard Method is 23,881 dwellings; the shortfall under a housing need that fully aligns housing and jobs growth is 8,465 dwellings; and under Policy SP1 it is 5,135 dwellings. 5. It is therefore clear that greenfield Green Belt sites in appropriate locations are required to deliver the overall housing requirement. 6. Land east of Langsett Road North, Oughtibridge (amongst other suitably located sites) is removed from the Green Belt and allocated for housing to address the shortfall identified above and to ensure a more balanced approach to housing delivery across the City, which will ensure that all housing needs are met. For full representation please refer to '50479_02 Oughtibridge site 8C Sheffield Plan rep 17.02.2023 v5.pdf' emailed separately from [redacted]

If your representation is seeking a modification to the plan, do you consider it necessary to participate in examination hearing session(s)?

Yes, I wish to participate in hearing session(s)

If you wish to participate in the hearing session(s), please outline why you

consider this to be necessary

In accordance with 'Government Guidance Local Plans: taking part in examinations' we wish to appear before and be heard by the inspector at a hearing because: - our comments (a 'representation'), are on the final draft of the plan (the 'Regulation 19' plan) that the LPA submitted for examination, and - our comments ask for a change to be made to the plan – that is, it is an objection to the submitted plan. We would welcome the opportunity to put forward the latest evidence relating to CEG's representation at the time of the hearings.

Thank you,
Sheffield City Council

Other projects that might interest you

Sheffield City Partnership Board Equality Monitoring

Project for Sheffield City Partnership Board members and presenters.

View Project

Commissioning Plan for Mainstream Education Places 2023-2026

The Council is consulting on our Commissioning Plan for Mainstream Education Places 2023-2026,...

View Project

Stocksbridge - new local bus service

The Stocksbridge Towns Fund Board is looking to work with local transport providers to deliver a...

View Project

View all projects

LICHFIELDS

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Sheffield City Council
Strategic Planning
Planning Service
City Futures
Howden House
1 Union Street
S1 2SH

Date: 17 February 2023
Our ref: 50479/02/CD/MGr/26317953v1

Dear Sir / Madam

Land at Langsett Road North, Oughtibridge: Representation to Sheffield Plan Publication (Pre-submission) Draft consultation

This representation has been prepared on behalf of Commercial Estates Group (CEG). It comments on the soundness of the Sheffield Plan Publication (Pre-submission) Draft (the "Plan") in relation to the tests of soundness in Paragraph 35 of the National Planning Policy Framework (NPPF):

- Positively prepared – providing a strategy which, as a minimum seeks to meet the area's objectively assessed needs, and is informed by agreements with other authorities, so that unmet need from neighbouring authorities is accommodated where it is practical to do so and is consistent with achieving sustainable development;
- Justified – an appropriate strategy, taking into account the reasonable alternatives, and based on proportionate evidence;
- Effective - deliverable over the plan period and based on effective joint working on cross-boundary strategic matters that have been dealt with rather than deferred, as evidenced by the statement of common ground; and
- Consistent with national policy – enabling the delivery of sustainable development in accordance with the policies in the NPPF.

CEG's view is that the plan is unsound in relation to the overall housing requirement, the spatial strategy for accommodating the requirement and in its justification for not amending Green Belt boundaries. To assist in ensuring the Plan is sound CEG consider that the land east of Langsett Road North, Oughtibridge (SHLAA 2015 reference: S01187) is an appropriate location to amend the Green Belt to accommodate an element of the City's housing requirement, as part of a more diverse spatial strategy.

CEG has previously made representations to the consultation on the Sheffield Plan: Our City, Our Future - Issues and Options Consultation 2020. Those representations demonstrated that land at Langsett Road North represented a suitable, deliverable and available site

for residential development and contained technical evidence to underpin this position as well as setting out wider benefits that could be secured for the Oughtibridge community. This case is reiterated in this new submission.

Background

CEG has a long-term interest in land in and around Oughtibridge, having acquired the Paper Mill site (also referred to as Oughtibridge Mill, originally known as Spring Grove Mill) and the wider estate portfolio in 2015.

Having secured planning permission for a high-quality redevelopment of the former Paper Mill site for 320 new homes in a landscaped setting, the site is in the process of being delivered by Barratt David Wilson Homes and SkyHouse Co. The permission includes a new pedestrian/cycleway running through the site and Section 106 funding to deliver a bridge over the River Don linking the site with the land at Langsett Road North and the remainder of Oughtibridge.

The land off Langsett Road North forms part of that wider estate and provides a further opportunity to positively contribute towards delivering a high-quality residential development, in a sustainable location which provides wider benefits for the local community.

Land at Langsett Road North, Oughtibridge

The site is located centrally within Oughtibridge, close to existing housing and local services. It has no formal existing use and covers an area of approximately 3.19 hectares (7.9 acres). There is an existing unmade track which runs along the majority of the extent of the eastern boundary of the site that provides access to the sports fields and pavilion to the north and east. There are bus stops located on Langsett Road North which are within easy walking distance.

The site is bound by woodland to the north and east, existing development along Forge Lane to the south and east, and Langsett Road North to the west. The site is located adjacent to existing sports pitches (in the control of CEG) which are accessed from an unmade track leading from Forge Lane which runs adjacent to the site boundary. The site is located in the Green Belt though it is considered that it performs poorly against a number of the 'purposes' of Green Belt and is deemed an appropriate site for release.

A site promotion document has been prepared for the site and was submitted as part of the previous call for sites process – a copy is enclosed at Annex 1. This includes a masterplan for the site taking account of its constraints and unique opportunities and demonstrates how the site could be developed to deliver up to 74 units with the main vehicular access into the site taken from Langsett Road North. Part of Forge Lane could be upgraded to provide a possible emergency access taken from the neighbouring development. The masterplan also indicates how the development could also support enhancements to the existing sports pitches and open space to benefit new and existing residents within Oughtibridge. The proposal will meet local housing need by delivering a considered and sustainable continuation of the village and sit and connect with the existing residential development immediately to the south and west as well as the aforementioned emerging Oughtibridge Mill site to the north west.

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Assessment of Soundness

Housing Need

Policy SP1 of the Publication (Pre-Submission) Draft Sheffield Plan ("the Plan") proposes a housing requirement of 2,090 dwellings per annum, equating to 35,530 new dwellings over the 18-year Plan period to 2039. This requirement is not based on the Standard Methodology which requires a 35% uplift to be applied to Sheffield because it is in the top 20 cities and urban centres as published by the Government. The Standard Method would set an overall housing requirement of 54,324 dwellings over the plan period – 3,018 dwellings per annum. The Standard Method therefore sets an annual housing requirements some 45% greater than that proposed by the plan under Policy SP1.

The National Planning Policy Framework is clear (paragraph 61) that the Standard Method should be utilised to determine the minimum number of homes needed, unless exceptional circumstances justify an alternative approach which also reflects current and future demographic trends and market signals. In choosing to deviate from the Standard Method, Sheffield City Council has considered current and future demographic trends, but has not sufficiently accounted for market signals in the context of housing need (paragraph 62). In this regard, exceptional circumstances cannot be justified and Policy SP1 cannot be considered sound as it is neither positively prepared in so far as it does not meet the City's objectively assessed needs and is certainly not consistent with national policy (paragraph 35). Such matters are discussed in greater detail below and it is CEG's position that the Standard Method derived requirement of 3,018 dwellings per annum across the full plan period should be planned for. As one of the largest urban authorities in the country, Sheffield must play its part in resolving the housing crisis that exists nationally and contributing towards ensuring that the Government's target of delivering 300,000 homes per annum by the mid-2020s is met.

Nevertheless, should it be accepted that exceptional circumstances do exist to justify an alternative approach, then the housing requirement in SP1 still needs to increase to ensure alignment with housing and economic growth. This would be in line with the analysis prepared by Lichfields in the representation on the Issues and Options consultation 2020 and is close to the upper end of the range proposed by the Council in its evidence base[1].

The analysis by Lichfields proposed that the housing requirement figure should be 2,275dpa (from 2,131dpa based on the Local Housing Need figure at the Issues and Options consultation). Such an uplift was considered necessary to ensure alignment between housing and employment growth, taking into account economic activity rates, unemployment and commuting rates. The technical note prepared for the previous representation is attached at Annex 2.

The concern remains that the housing requirement in SP1 (2,090dpa) is not aligned with economic growth and CEG considers that it should be <u>at least</u> 2,275dpa if the Standard Method is not conducted.

CEG currently objects to Policy SP1 given it is not positively prepared or consistent with national policy and is therefore unsound.

[1] Housing, Economic Growth and Demographic Modelling (July 2021)

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Growth Plan and Spatial Strategy

Housing Supply

CEG consider that the proposed spatial strategy in Policy SP2 is neither positively prepared, nor justified as it is overly reliant on the Central Sub-Area to deliver the City's housing, without evidence to demonstrate that is capable of accommodating such a level of housing in the plan period. Such a strategy is also not reflective of the size, type and tenure of housing needed for different groups in the community as required by the NPPF (paragraph 62). This includes affordable housing, families with children and older people, all of which have to be considered in the context of determining the minimum number of homes needed.

It is important to firstly consider delivery rates in the City Centre in recent years and consider whether it provides a realistic benchmark for the delivery of 18,640 new homes (Policy SA1) in the Central Sub-Area[2]. The Housing and Economic Land Availability Assessment (HELAA, 2022) shows that the City Centre delivered 56% (996 dwellings) of the city's gross dwelling completions in 2021/22. However, only 7 of those were 'houses', the rest were apartments (548) and student clusters (441). Delivery has been similar in previous years – in 2019/20 of the 1,608 (gross) dwellings completed in the City Centre, 402 were apartments, 1,191 were purpose-built student accommodation and just 15 were houses. If student accommodation was removed from the completion figures in 2021/22, the total number of dwellings completed in the City Centre is just 555 units. Using this as a benchmark for delivery and looking forward over the Plan period, it could be expected that only 9,990 dwellings will be completed in the City Centre.

Although student accommodation does contribute to the City's overall housing requirements, Policy SA1 is clear that student accommodation will be focused in limited areas in the City Centre, and as a result the completion rates would likely reduce during the Plan period under that policy. Although Policies CA1A: Priorities for Neepsend; CA2B: Priority Location in Wicker Riverside; and Policy CA3A: Priority Location in Furnace Hill support a wide range of housing types, including family housing, there is no requirement for such types in the allocations proposed, only that they 'could include' or 'be considered'.

Taking this theme forward, the delivery of high-density residential accommodation would not reflect the current demand for new housing in Sheffield as identified in Table 8.1 of the Strategic Housing Market Assessment (SHMA). This details that there is currently a high demand for larger dwellings (45% for three-bedroom dwellings) and the lowest demand for one-bedroom dwellings (12%). With regards to type of accommodation, in Sheffield there is only a 20% demand for flats/apartments, whereas there is a significant demand for terraced (18%), semi-detached (35%) and detached houses (28%).

The evidence, therefore, shows that the proposed Growth Plan and Spatial Strategy is not positively prepared nor justified because it would not meet the number, type and size of dwellings required in Sheffield, and is therefore unsound. CEG therefore object to the approach.

[2] Although the Central Sub-Area covers a larger area than the City Centre, the difference in housing delivery is unlikely to be significant.

Realistic Delivery in the Central Sub-Area

CEG are largely supportive of the approach of focusing development in the Central Sub-area in terms of maximising opportunities for regeneration but, notwithstanding the low level of delivery of housing in the City Centre outlined above, the number of dwellings that the Plan trajectory has calculated for delivery in the Central Sub-Area is considered to be unrealistic. The effect of this will mean that overall housing need will not be met.

The total proposed capacity of the Central Sub-Area comprises 10,319 dwellings on proposed allocated sites without planning permission and 8,187 on allocated sites with planning permission (Table 19, HELAA, 2022).

It is agreed that using relevant planning permissions as a source for capacity for years 1 to 5 of the Plan is acceptable in principle in accordance with Paragraph 68 of the Framework. However, in the same timeframe the Plan's trajectory (Table 20 of the HELAA) has included 4,937 dwellings across the city that are on proposed allocated sites without planning permission; if the Central Sub-Area has 70% of the city's total proposed allocated sites without planning permission (totalling 7,223 dwellings across the Plan period), then there are proportionately 3,490 dwellings proposed on site allocations without planning permission in the Central Sub-Area for years 1 to 5.

For a variety of reasons, it cannot be assumed that the site allocations will be delivered in the Plan period in the absence of a planning permission (or in many cases being promoted for development). The realistic extent of delivery from this source will, therefore, be much reduced. If only 50% of such sites came forward for development this would provide a supply of 1,728 dwellings on allocated sites without planning permission across in the Central Sub-Area for years 1 to 5.

In addition, and although Paragraph 68 only requires that site allocations in years 6 to 10 and 11 to 15 of the plan period need to be 'developable' or identified as 'broad locations for growth', it cannot be assumed that all of the 9,876 dwellings (or 6,913 proportionately in the Central Sub-Area) proposed on allocated sites without planning permission will be delivered during those periods. Again, if 50% of this supply is delivered then the level of delivery in the Central Sub-Area would reduce to 1,728 for each of the periods 6 to 10 and 11 to 15.

In total, it is reasonably assumed that the Central Sub-Area's housing delivery is to be 13,371 rather than 18,506 based on a lapse rate of 50% for site allocations that do not have planning permission.

It is, therefore, suggested that the supply of sites that can and will deliver residential accommodation in the defined Central Sub-Area is unrealistic and the Spatial Strategy is therefore unsound. The Table below provides a summary of what is considered to be a more realistic, but still highly ambitious level of supply that would still deliver transformational change in the Central Sub-Are (13,371 dwellings) based on past delivery rates of non-student dwellings in the City Centre to meet housing needs.

Table 1

Sites	No. dwellings in the Central Sub-Area	Notes
Sites with Planning Permission	8,187	These sites have planning permission and are considered to be deliverable in accordance with the definition of deliverable Annex 2 of the Framework.
Known Sites years 1 to 5 (without planning permission)	1,728	This is based on the Central Sub-Area proposing 70% of the site allocations without planning permission, and applies a 50% lapse rate. This is on the basis that the sites cannot be considered to be 'deliverable' in Paragraph 68 of the Framework.
Known Sites years 6 to 10 and 11 to 15	3,456 (1,728 + 1,728)	As above, this assumes only 50% of the sites identified will come forward for development.
Total	**13,371 dwellings**	

The delivery of 13,371 dwellings on allocated sites without planning permission results in a deficit of 5,135 dwellings from the 18,506 identified in the HELAA.

In reaching this position, CEG and Lichfields have considered that the Spatial Strategy will require significant public sector support and investment, including the possible direct involvement of Sheffield City Council to buy/acquire land for site assembly (possibly through compulsory purchase), the relocation of existing businesses and investment in infrastructure. In CEG's experience delivering housing on brownfield sites (of which 89% of the Plan's proposed housing supply is on brownfield land) presents a number of challenges compared to greenfield sites, including:

- Fragmented landownerships that often lead to difficult land assembly and the need for Compulsory Purchase Orders;
- Relocation of existing uses;
- High upfront costs (e.g. demolition, decontamination);
- Less uplift in value following planning permission;
- More bespoke design response required which leads to greater risk;
- Higher risks of contamination and clean-up costs;
- Ground bearing and foundation design factors for higher density and apartment buildings;
- Lack of extensive understanding of city centre residential markets for larger apartments and families (e.g. lack of comparators for mortgage valuation and higher level of competition for similar housing offer in one location over the Plan period is expected); and
- Greater uncertainty about the environmental attractiveness of surrounding areas in the Central Sub-Area.

In summary, the proposed Spatial Strategy is considered by CEG not to be a viable option, and is therefore not positively prepared nor justified, for the following reasons:

1 The size, type and tenure of housing needed for different groups in the community has not been reflected in the proposed Growth Plan and Spatial Strategy, including affordable housing,

families with children and older people all of which need to be considered in the context of determining housing need in Paragraph 62 of the Framework.

2 Developing 18,506 new dwellings within the Central Sub-Area would require high density living which are inherently delivered as one/two-bedroom apartments. Using past recent delivery of non-student dwellings in the City Centre as a benchmark for delivery and looking forward over the plan period, it could be expected that only 9,990 dwellings will be completed in the City Centre over the Plan period.

3 Notwithstanding the low level of delivery of housing in the City Centre, the number of dwellings that the Plan trajectory has calculated for delivery in the Central Sub-Area is considered to be unrealistic. Due to the inherently more challenging nature of brownfield sites compared to greenfield, a 50% lapse rate should be applied to allocated sites that do not have planning permission. This would reduce the expected capacity of the Central Sub-Area to 13,371 dwellings. This would bring the total housing delivery in the Sheffield District to 30,443 (1,691dpa); a shortfall of 23,881 compared to the Standard Method; a shortfall of 8,465 dwellings based on Lichfields' analysis aligning housing need and jobs growth; or a shortfall of 5,135 based on the proposed housing requirement in SP1. Each level of shortfall will mean that additional sites will need to be considered for allocation.

Release of Sustainably Located Green Belt sites

Paragraph 140 of the Framework is clear that Green Belt boundaries once established should only be altered where exceptional circumstances are fully evidenced and justified. Paragraph 141 further states that before concluding that exceptional circumstances exist to justify changes to Green Belt boundaries it should be possible to demonstrate that it has examined fully all other reasonable options for meeting its need for development.

Based on the commentary and evidence included above, it is considered that SCC are unable to realistically demonstrate that it can meet its identified need for development outside of Green Belt, as required by paragraph 140, and therefore exceptional circumstances do exist to alter the Green Belt boundary.

It is clear, therefore, that there is a need for Sheffield City Council to allocate greenfield sites within the Green Belt in order to meet its housing need, both in overall terms and in respect of the type of housing that is needed as identified in the SHMA.

Option 5 that was presented to the Council's Co-operative Executive in February 2022 set out the potential to allocate 15,000 dwellings on greenfield sites in the Green Belt. This level of greenfield Green Belt release is only necessary under the Standard Method with the 35% uplift applied, but CEG considers that there are strong reasons for a spatial strategy that is aligned with Option 4 which would propose that there are site-specific exceptional circumstances to justify altering the Green Belt boundary.

A number of technical notes were appended to the previous representation on the Issues and Options consultation (2020) and are summarised below that demonstrate that the land east of Langsett Road North, Oughtibridge is an example of a sustainably located site that could be removed from the Green Belt and allocated for housing, without impinging upon the overall purpose and function of the Green Belt in any way. It would also increase the viability of key strategic infrastructure (e.g. the Don Valley

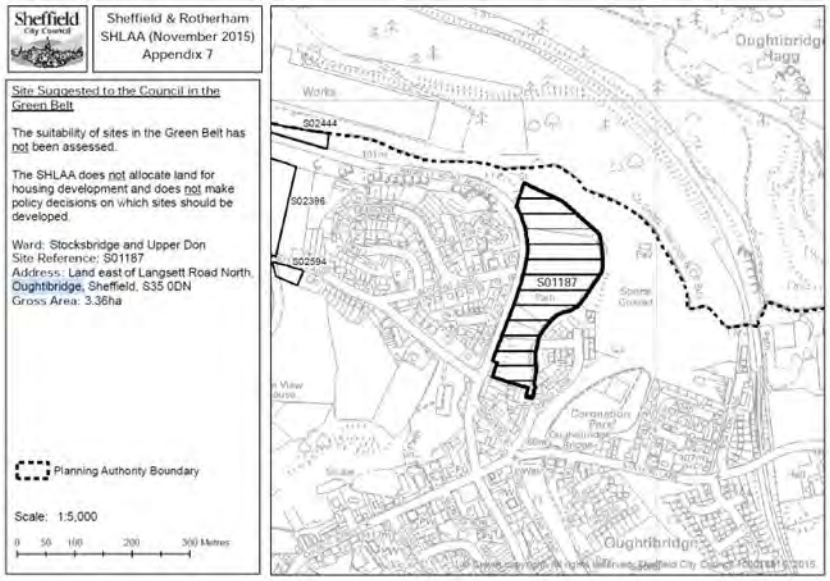
Railway that has wide public support and is seeking funding), thus strengthening the exceptional reasons to release the site from the Green Belt.

The case for allocating Land East Langsett Road, Oughtibridge

Land east of Langsett Road is suitable and available for development. The site has been promoted for development previously and was included in the Strategic Housing Land Availability Assessment (SHLAA) completed in to 2015.

The site reference is S01187 – Land east of Langsett Road North, Oughtibridge, Sheffield, S35 0DN. The site was given a 'long-term option' planning status due to its location within the Green Belt. It was also considered unsuitable through this process only because of its Green Belt designation. It was noted, however, that the site is available now. Figure 1 shows the site which was included in the assessment.

Figure 1 SHLAA Site S001187 – Land east of Langsett Road, Oughtibridge



Source: Sheffield City Council SHLAA (November 2015)

The site has not been reviewed in the most recent HELAA because of its greenfield Green Belt status, but as explained above if Green Belt site releases are required then it is strong candidate for allocation.

The representation to the Issues and Options consultation in 2020 included a review of its Green Belt score which shows it as having a very limited Green Belt function and its removal from the Green Belt would not result in meaningful harm (enclosed at Annex 3). A more accurate scoring applied to parcel O-3-a (Green Belt Review 2020), shows that it would be the poorest performing Green Belt site in Oughtibridge and therefore the most appropriate location for Green Belt release.

The site has also been assessed against the proposed Site Selection Methodology as being suitable, available and deliverable (Annex 5). It is free of any overriding constraints that would prevent development being acceptable on site.

Allocating the land to the east of Langsett Road North for residential development would provide a range of benefits, including improvements to the adjacent sports pitches which are also in the control of CEG. Development of this site could support enhancements to the sports pitches and associated open space to the benefit of new and existing residents within Oughtibridge. Improved vehicular access could be provided through the site into the adjacent sports pitches through the upgrading of the existing unmade track, making it easier for members of the public to travel to and from the pitches. This would also provide greater long term certainty to the sports clubs and teams that utilise the pitches to source funding for upgrading of the facilities here.

For all of the reasons noted above, land east of Langsett Road North, Oughtibridge should be removed from the Green Belt and identified as an allocation for residential development in the emerging Sheffield Local Plan.

Conclusion

This representation has been prepared by Lichfields on behalf of CEG. CEG objects to Policies SP1; SP2 and SA1. The plan is not positively prepared or consistent with national policy and is therefore unsound, and the delivery of 18,640 dwellings in the Central Sub-Area over the plan period is not realistic.

To ensure the effective delivery of the Growth Plan and Spatial Strategy and for the Plan to be sound under Paragraph 35 of the Framework, the following changes need to be implemented:

1 The housing requirement should be based on the Standard Method of 3,018 dwellings per annum (54,324 dwellings over the Plan period) which the NPPF makes clear should be the minimum number of homes needed. Should it be accepted that exceptional circumstances do exist to justify an alternative approach, then the housing need in Policy SP1 should be fully aligned with employment growth which Lichfields considers to be 2,275dpa.

2 The size, type and tenure of housing needed for different groups in the community needs to be reflected in the housing supply and spatial distribution, including affordable housing, families with children and older people.

3 A more realistic number of dwellings in the Central Sub-Area needs to be proposed which does not assume that all of the proposed allocations in the trajectory will come forward if they do not have planning permission, particularly in years 1 to 5 of the Plan period. Applying a lapse rate of 50% for site allocations without planning permission reduces the delivery of housing in the Central Sub-Area to 13,371 dwellings.

4 On the above basis, the shortfall in housing supply under the Standard Method is 23,881 dwellings; the shortfall under a housing need that fully aligns housing and jobs growth is 8,465 dwellings; and under Policy SP1 it is 5,135 dwellings.

5 It is therefore clear that greenfield Green Belt sites in appropriate locations are required to deliver the overall housing requirement.

6 Land east of Langsett Road North, Oughtibridge (amongst other suitably located sites) is removed from the Green Belt and allocated for housing to address the shortfall identified above and to ensure a more balanced approach to housing delivery across the City, which will ensure that all housing needs are met.

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To ensure the effective delivery of the Plan, ensure it is justified, is an appropriate strategy that takes into account the reasonable alternatives, and to therefore be found sound under paragraph 35 of the NPPF, the above changes will need to be made.

In submitting this representation, we look forward to being kept informed about the progress of the Sheffield Local Plan and request the opportunity to speak at the forthcoming examination hearings.

Yours faithfully

Christopher Darley
Senior Director

Copy Matthew Rhodes,
Planning Manager,
CEG

Annex 1: **Site Promotion Document**

Land East of Langsett Road North, Oughtibridge

Site promotion document

Client: CEG

Revision: 03

Date: 05.04.2018

open
optimised environments

Assessing residential development potential

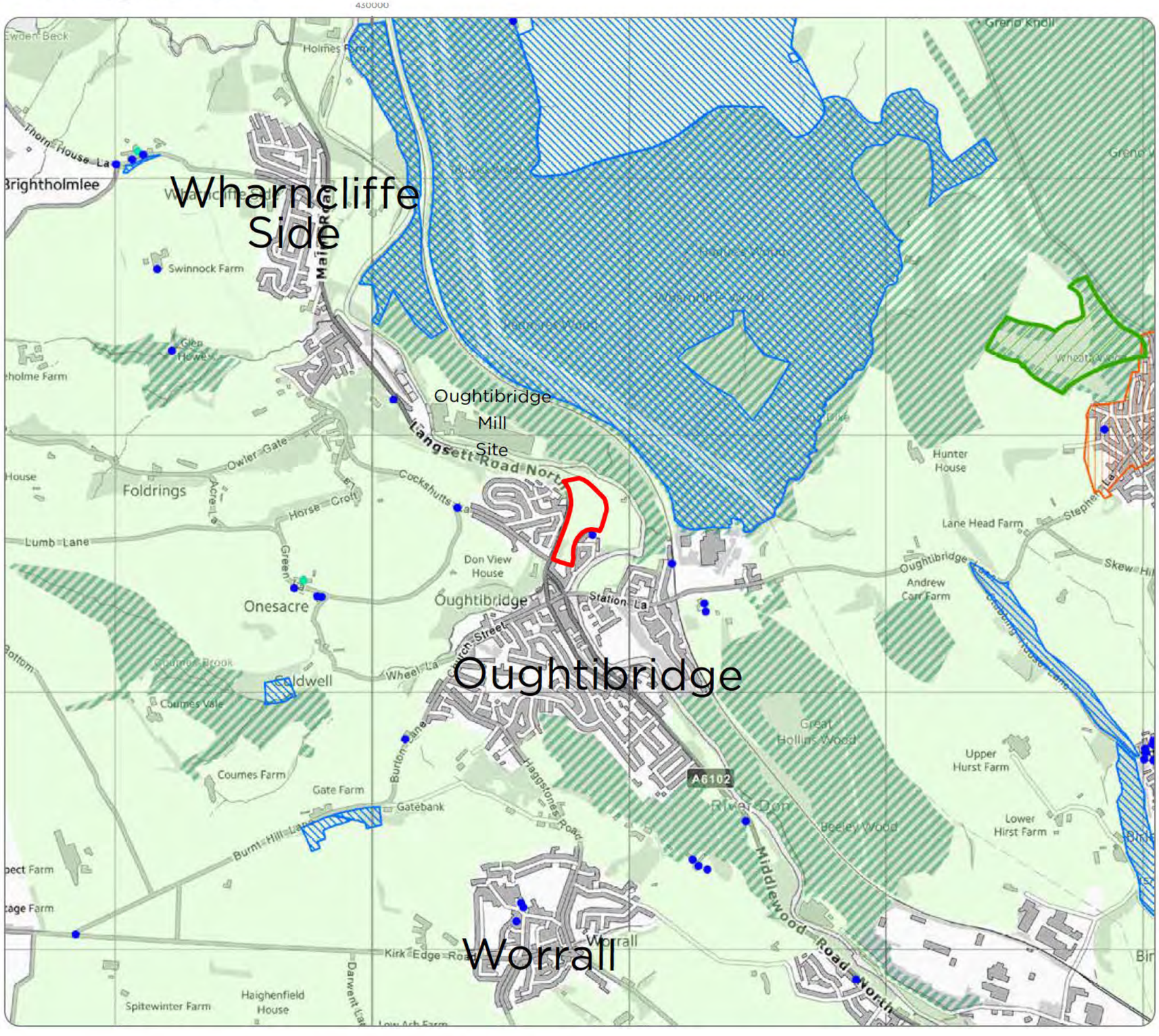
This document explores the potential for the site to the East of Langsett Road North in Oughtibridge, to accommodate residential development.

It considers the range of existing on site features and local characteristics, documented through a series of preliminary analysis plans and a photographic survey.

Based on this understanding a summary of the constraints or opportunities these might present to potential development is provided.

The document concludes with a master plan study which responds to these features and begins to quantity the scale of opportunity.

Designations



Land East of Langsett Road North, Oughtibridge

Designations

Ref No:	M80096	Created By:	MJF	Rev No:	1
Scale:	1:15,000	Drawing Size:	A3	Date:	09/03/2018

Coordinate System: BNG OS GB 1936 Datum

optimised environments

Flooding

Legend

- Site Boundary
- Flood Zone 3
- Flood Zone 2

0 50 100 Meters

N

Land East of Langsett Road North, Oughtibridge

Flood Data

Ref No:	M80096	Created By:	MJF	Rev No:	1
Scale:	1:2,500	Drawing Size:	A3	Date:	09/03/2018
Coordinate System:	BNG OS GB 1936 Datum				

open
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Slopes

Legend

- Site Boundary

Slope Analysis

Degrees (Percent Rise)

- 0 - 2.86 (0 - 5%)
- 2.86 - 5.71 (5 - 10%)
- 5.71 - 8.53 (10 - 15%)
- 8.53 - 11.31 (15 - 20%)
- 11.31 > (20% >)

N

0 50 100 m

Land East of Langsett Road North, Oughtibridge

Slope Analysis

Ref No:	M80096	Created By:	MJF	Rev No:	1
Scale:	1:1,500	Drawing Size:	A3	Date:	09/03/2018
Coordinate System:	BNG OS GB 1936 Datum				

open
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Elevation

Legend

- Site Boundary
- 1m Contour Spacing

Elevation

- High : 112.907
- Low : 87.9366

0 50 100 m

N

Land East of Langsett Road North, Oughtibridge

Elevation

Ref No:	M80096	Created By:	MJF	Rev No:	1
Scale:	1:1,500	Drawing Size:	A3	Date:	09/03/2018

Coordinate System: BNG OS GB 1936 Datum

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Conditions and issues to consider

Forge Lane

The existing route provides vehicular access to an existing pumping station and the sports pitches to the east of the site. The route is relatively informal and in relatively poor condition for vehicular use but does provide an attractive recreational walking route. Upgrade or alternative routes could be considered for access to the sports pitches.

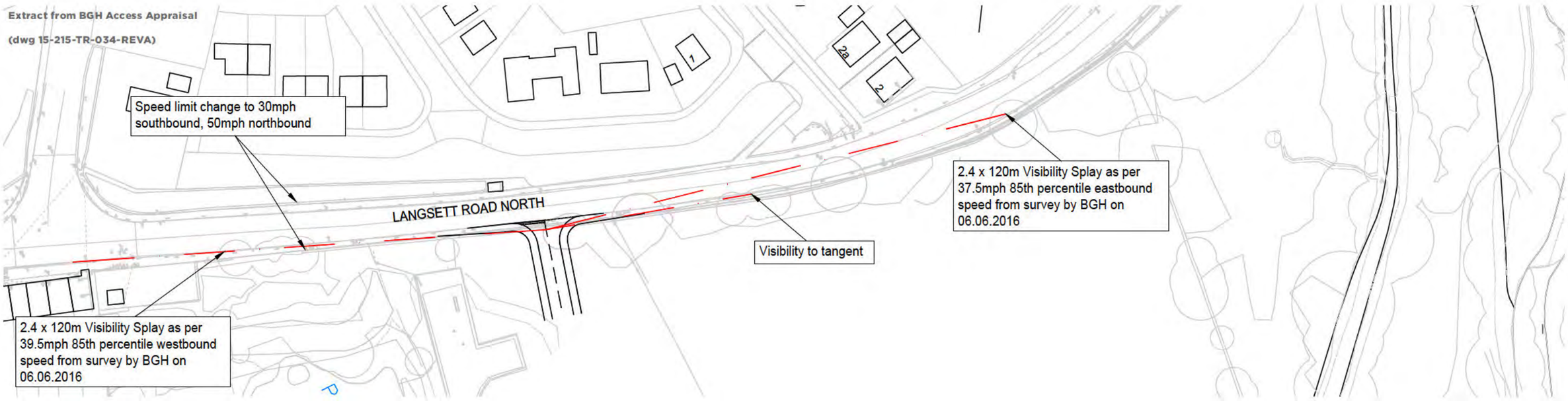
The existing street nework within the neighbouring residential development offers potential for pedestrian, cyclist and potentially emergency vehicle access to the site.

Langsett Road North

The site is bordered by Langsett Road North, a local distributor road, as it leaves Oughtibridge village and heads North towards Wharncliffe Side. This is a bus route with stops adjacent to the site and also provides for pedestrian access towards both Oughtibridge village centre and the main Oughtibridge Mill site.

The road is subject to a 50mph speed limit along the majority of the site frontage, which changes to 30mph towards the south of the site, as it approaches Oughtibridge. However, measured speed surveys from within the 50mph speed limit indicate speeds are much lower than this (approximately 37 -39mph). Visibility splays of 2.4m x 120m have been adopted in accordance with these results and Design for Manual for Roads and Bridges as shown in the extract below.

Technical work undertaken by Bryan G Hall demonstrates that a suitable vehicular access would be achievable on the western edge of the site, working with existing levels and incorporating appropriate sight line requirements.



View looking southwards along Forge Lane towards Oughtibridge. Development provides overlooking frontage onto the site. Current access to YW Pumping Station

Forge Lane adopted shared street, currently provides no vehicular connection to Forge Lane and the Sports Pavilion

Forge Lane shared street with a 5.4m carriageway and two service strips each side

View along Langsett Road North towards Warncliffe Side. The site sits between a 30mph & 50mph zone

Structures & built character

An existing electrical sub station along Langsett Road North, sits along the southern edge of the site boundary

An historic bridge structure associated with the Mill Race. Its currently used as a pedestrian path to the Sports Pitches

An unknown utility associated with previous use of the site. Potential to be a capped mine shaft / or water well. Further investigation and assessment required

An existing stone wall existing within the centre of the site and could form an attractive feature within a future development plot

An existing Pumping Station permission granted 8th Feb 2013. A key technical and placemaking constraint

Recent development typically 3 storey terraced townhouses, with integral parking / courtyard parking

Existing retaining wall along Langsett Road North - this relationship with any proposed development will need to be considered

Vernacular terraced mill housing along Langsett Road North. Regular building lines with consistent eaves and simple detailing characterise the local area

Natural features & boundaries

View looking south west across the site. The site slopes from west to east

A number of informal walking paths traverse the site and connect between Forge Lane and Langsett Road North

A large area of standing water sits to the southern extent of the site

A belt of trees form the eastern edge of the site along Forge Lane and provide visual screening between the site and the sports pitches

Technical and place-making considerations

- Site Boundary
- Existing development
- Existing tree planting
- Existing water-bodies
- Flood Zone 2
- Flood Zone 3
- Existing park / public open space provision
- 0.5m topography lines
- General fall in site levels
- Primary roads
- Secondary Roads
- Unadopted track / path
- Areas along Forge Lane with pinch points / narrow carriageway
- Informal walking routes
- Bridge structures
- Existing gate
- Stone wall
- Electricity sub station
- Electricity line
- Water main (4" & above)
- Pumping station secure access
- Public rising main & Foul sewer
- Potential well / disused mineshaft
- Building frontage Orientation
- Grade II Listed Water Powered Forge Building
- 9m offset from Mill Race (bottom of bank)
- 15m offset from Pumping Station to habitable rooms
- Potential access required to adoptable highway retaining wall

Masterplanning considerations

pedestrian & cycle access

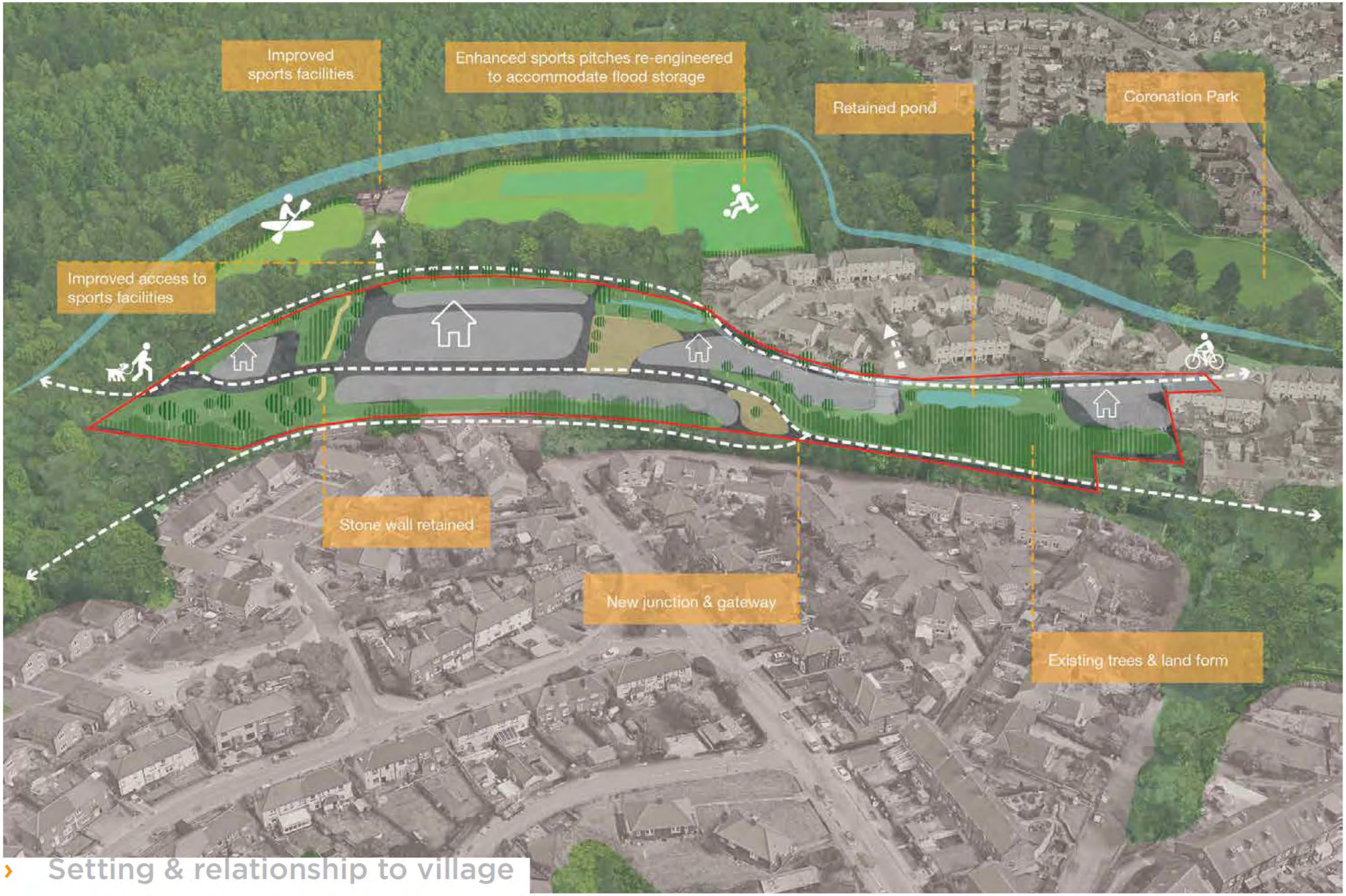
- A network of pedestrian and cycle priorities routes and residential streets form the basis of a movement network across the site
- Forge Lane could be upgraded to provide improved pedestrian and cycle connectivity to improved sports pitches and the pavilion, with vehicular access to the sports facilities taken from Langsett Road
- Residential streets, with good levels of pedestrian and cycle provision, provide access to the proposed pedestrian bridge to the north and wider strategic links.

landscape structure

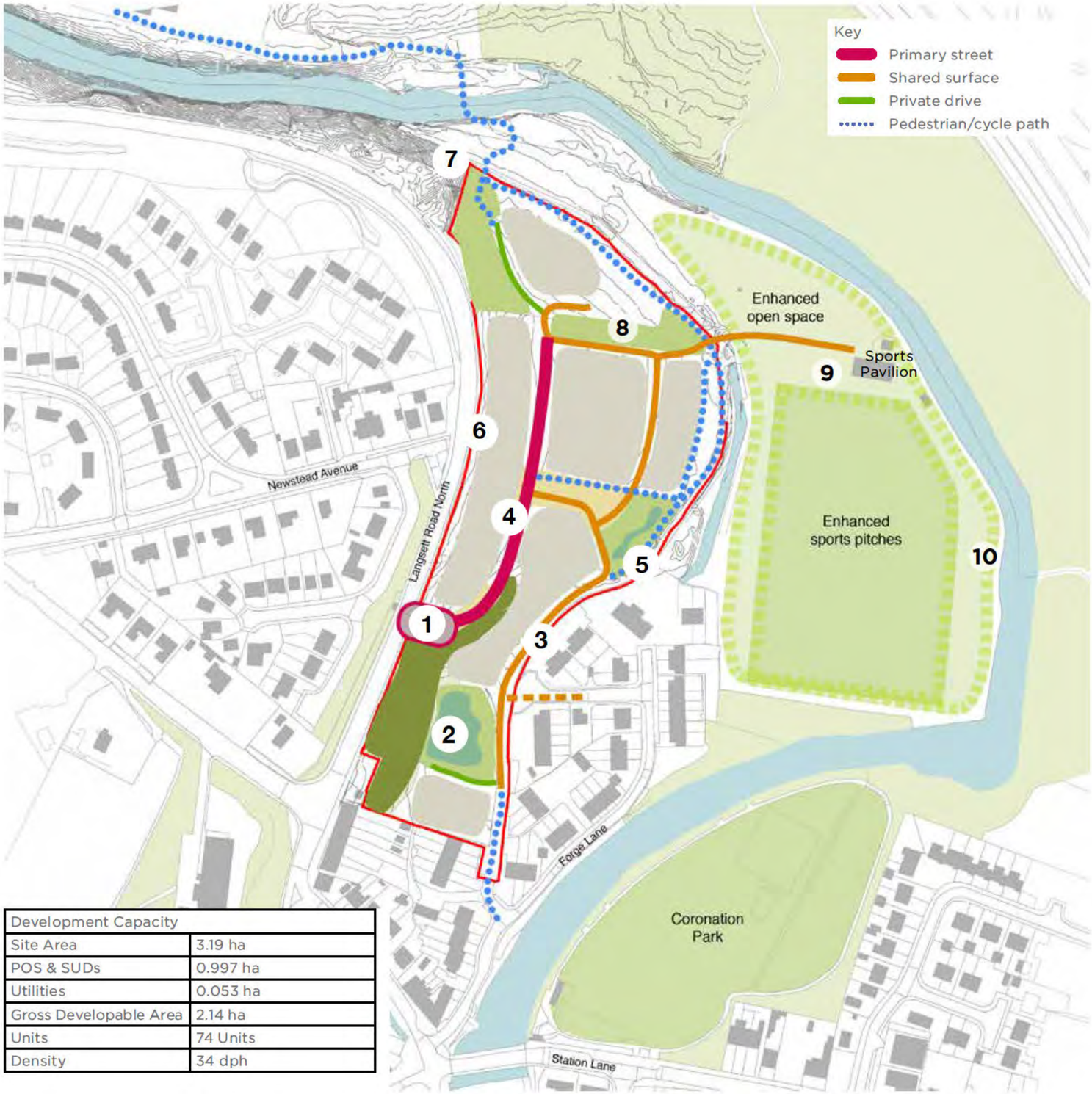
- Pockets of landscape respond to the natural features of the site, including existing trees, topography and flood attenuation
- 'Mill Pond' space is focused around the existing body of water, landforms and existing trees, creating an enclosed greenspace with overlooking frontages
- A series of public spaces connect to a landscape buffer along the historic mill race and existing tree belt. A new Village Square and linear green space along the existing wall create spaces of interest and character.

density & character

- Density gradient falls from North to South, reflecting the local landscape and built character of Oughtibridge
- Highest density is focused around the Village Square, creating a focal point within the master plan and the framing the areas of public space
- A lower density edge response is created along the northern edge of the site, with a lower density. Development is set within a landscape and woodland character.



Setting & relationship to village



Development Capacity	
Site Area	3.19 ha
POS & SUDs	0.997 ha
Utilities	0.053 ha
Gross Developable Area	2.14 ha
Units	74 Units
Density	34 dph

A natural village extension, connecting communities & amenities

The masterplan vision for the site sees 74 new homes delivered through a masterplan that responds to the local character and unique assets of the site.

A number of technical challenges have been considered through the design reponse, which connects local amenties, existing communities and new residential development through a connected and permeable landscape and movement structure.

1. New connection to Langsett Road North provides the primary vehicular entrance point to the development.

2. Existing surface water pond retained as part of a site wide SUDS strategy

3. Part of Forge Lane upgraded to provide access to development parcel, with possible emergency vehicle access taken from neighbouring development. Remainder enhanced as a pedestrian & cycle route.

4. Central spine carries relocated pedestrian routes along contour lines from Langsett Road to the river

5. New SUDS swale along eastern edge, at low point of the site

6. Dwellings back onto Langsett Road North and existing retaining wall with potential for maintenance access.

7. New formalised pedestrian path and possible pedestrian bridge into Oughtibridge Mill site

8. Retained and restored existing stone wall

9. Access to enhanced sports facilities taken through new development, rather than along Forge Lane.

10. Sports pitches re-engineered as part of enhancement works to accommodate flood storage for Oughtibridge Village.

› Illustrative master plan

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LICHFIELDS

Annex 2: **Annual Housing Requirement Technical Note**

LICHFIELDS

Technical Note: Assessment of potential uplift to Local Housing Need figure for Sheffield

1.0 Introduction

1.1 This note, which has been prepared on behalf of ceg, considers the extent to which the housing requirement that is proposed by Sheffield City Council as part of its new Local Plan is adequately aligned with its jobs aspirations and whether the Council might be justified in applying an uplift to the Standard Methodology-derived Local Housing Need figure.

1.2 Sheffield City Council is currently preparing a new Local Plan which will cover the period to 2038. Once adopted, the Sheffield Plan will replace the existing statutory development plan which comprises the Core Strategy (2009) and the saved policies contained in the Sheffield Unitary Development Plan (1998).

1.3 The Issues and Options 2020 document is currently subject to consultation, ending on 13 October 2020. It includes a housing requirement for 40,000 new dwellings over the 18-year Plan period to 2038 (2,185dpa), including homes needed to replace those that are demolished or converted to other uses. This figure is based on the Standard Methodology and the Issues and Options Paper states on page 25 that:

"We think this would be enough homes to support the planned growth in new jobs and would enable us to meet local needs identified in the different housing market areas."

1.4 Based on the latest affordability data (April 2020), we calculate that the Standard Methodology figure for Sheffield would be 2,131dpa (38,358 over the 18-year Plan period). However, the Government has recently consulted on its proposed changes to the Standard Methodology, the effect of which would be to reduce Sheffield's Local Housing Need figure to 1,733dpa (31,194 between 2020 and 2038). At this stage, such a figure can be afforded very limited weight. This is particularly the case given that it is not known how the government will respond to the consultation responses, many of which express concern about the effect of the proposed changes on housing delivery in the north of England.

1.5 In respect of employment growth, the Sheffield City Region (SCR) Strategic Economic Plan aims to create 70,000 additional jobs across the city region between 2015 and 2025, of which 25,550 are to be located in Sheffield (2,555 per annum). This ambition equates to an additional 51,100 new jobs between 2018 and 2038.

1.6 The Sheffield Employment Land Review (2020), which was prepared by Lichfields, considered a number of scenarios based on:

1 Econometric forecasts prepared by Experian Business Strategies (2019 REM release);

2 The SCR target of 1% job growth per annum; and,

3 Employment trends between 1997 and 2018 as identified by Experian (Compound Average Growth Rate of 0.631%).

1.7 These sources identified the following levels of future employment growth:

Table 1 ELR employment growth scenarios

	Experian	1% growth per annum	Past Trends
Total growth, 2018-38	23,220	45,930	28,055
Annualised growth	1,161	2,297	1,403

Source: Sheffield ELR 2020

1.8 The ELR also considered the employment land implications of:

1 The SCR Strategic Economic Plan target of 70,000 jobs – recognising that these targets are dated (set in 2013) and that employment growth between 2014 and 2018 (+24,640 FTE jobs) mean that the 2015-2025 target is *"well on the way to being achieved."*

2 Labour Supply, based on the Standard Methodology figure of 2,124dpa.

3 Past development rates – long term (1989-2019) and short term (2010-2019).

1.9 Taking account of the (former) B Class employment land requirements associated with each scenario (including an allowance for the replacement of losses and a safety margin), the Employment Land Need and Supply Technical Note (September 2020) notes that:

"The recommended economic land need for Sheffield arising from the ELR is between 141 and 248ha, depending on which of the 7 methodologies are favoured. A figure in the middle of this range would represent 194.5ha, or 10.8ha per year."

1.10 The figure of 141ha is based on the Experian forecast, whilst the higher 248ha figure is based on the 1% growth scenario. As set out above, these scenarios identified a total jobs growth of 1,161 per annum and 2,297 per annum respectively. Applying the same mid-point approach results in a job growth target of 1,729 per annum.

2.0 Policy considerations

2.1 Paragraph 60 of the NPPF states that *"...strategic policies should be informed by a local housing need assessment..."* following the Standard Methodology. However, the PPG recognises that the Standard Methodology for assessing Local Housing Need *"does not attempt to predict the impact that future government policies, changing economic circumstances or other factors might have on demographic behaviour. Therefore, there will be circumstances where it is appropriate to consider whether actual housing need is higher than the standard methodology indicates"* (Ref ID 2a-010-20190220). To this end, it states that the government *"supports ambitious authorities who want to plan for growth"* (Ref ID 2a-010-20190220).

2.2 When considering future housing requirements, the PPG is clear that *"the standard methodology uses a formula to identify the minimum number of houses expected to be planned for"* (Ref ID 2a-002-20190220; Lichfields' emphasis) and that local planning authorities are at liberty to apply a higher housing requirement figure if they consider this to be appropriate:

"...circumstances where this may be appropriate include, but are not limited to situations where increases in housing need are likely to exceed past trends because of:

- *Growth strategies for the area that are likely to be deliverable...;*
- *Strategic infrastructure improvements that are likely to drive an increase in the homes needed locally; or*

- *An authority agreeing to take on unmet need from neighbouring authorities…"* (Ref ID 2a-010-20190220; Lichfields' emphasis).

2.3 Paragraph 35 of the NPPF required local plans to be *"positively prepared – providing a strategy which, as a minimum, seeks to meet the area's objectively assessed needs."* These needs will relate to employment as well as housing. Paragraph 81c goes on to consider the issue of alignment of housing and employment growth, stating that planning policies should *"seek to address potential barriers to investment, such as inadequate infrastructure, services or housing…"*

2.4 The implication is that the relevant national policy is very clear in encouraging local authorities to adopt a housing requirement figure that exceeds the LHN baseline. This is important for the purposes of ensuring that local growth aspirations are achieved and that local plans are internally consistent. At a national scale, it is also essential as achieving the government's target of 300,000dpa nationally is dependent on authorities planning above their LHN figures, which currently sum to 257,000 nationally.

2.5 Analysis undertaken by Lichfields in July 2019 found that:

1 Of the 64 local authorities that published a draft Local Plan in 2019,

   a 34% applied a housing requirement that was greater than the LHN figure;

   b 50% planned to meet the LHN; whilst,

   c 16% failed to provide for the minimum LHN figure.

2 Of those authorities that planned to exceed the LHN:

   a 40% cited economic growth as a reason; and,

   b 16% cited housing delivery itself (i.e. historic rates of housing delivery supporting higher growth rates) as the key reason.

   Other reasons for exceeding the LHN included commitments made as part of Growth Deals and accommodating unmet housing need from adjoining local authority areas.

3 Our analysis concluded that:

   a If regional variations to housing requirements based on the plans that were (then) emerging were replicated nationally, this would equate to 207,500dpa being planned for outside of London, compared to the cumulative LHN figure of 196,500[1]. The continuation of these trends would therefore not be sufficient to meet the government's target of 300,000dpa.

   b If London continues to deliver at its long-term average rate, a 39% increase above the LHN would be required across the rest of the country in order to achieve the target of 300,000dpa.

[1] The LHN figure for all areas outside of London is now 201,300.

3.0 Towards a higher LHN figure?

3.1 As set out above, one of the key influences on any uplift to the LHN figure has been the aspiration of ensuring alignment between housing and employment growth. This is an important element of the NPPF and is crucial to ensuring balanced growth.

3.2 We have undertaken an analysis of the workforce population that is likely to be supported by the current LHN figure of 2,131dpa and the extent to which this would support the identified employment targets for Sheffield.

3.3 This analysis takes account of:

1 Population change over the emerging Local Plan period to 2038, drawing on the 2014-based SNPP which has been applied to provide consistency with the basis for the current Standard Methodology;

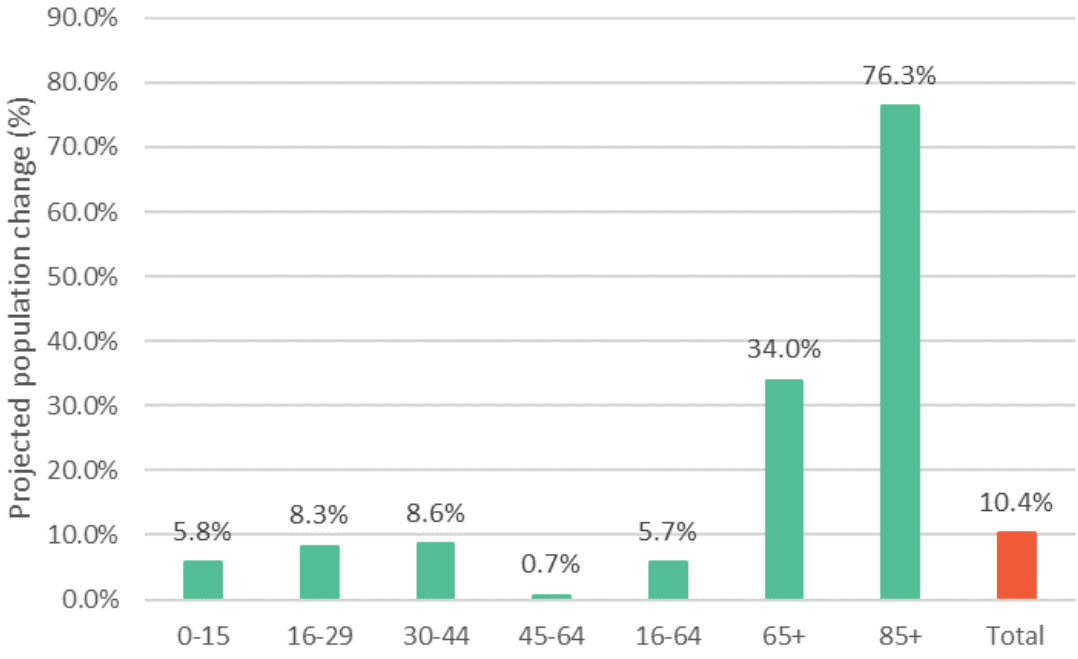
2 Anticipated future changes in economic activity rates for males and females over the age of 16, as published by the Office for Budget Responsibility (OBR) in January 2017;

3 Unemployment rates for males and females over the age of 16, as set out in the Annual Population survey; and,

4 Commuting rates taken from the 2011 Census.

3.4 The 2014-based SNPP indicate an additional 60,921 persons in Sheffield between 2020 and 2038 (+10.4%), of which 54,692 will be over the age of 16, with an increase of just 6,229 children aged 15 and under (+5.8%). The projected increase is dominated by older people, with 54% of the population growth expected to come from the over 65s. There is only expected to be a 5.7% increase in the number of people aged between 16 and 65 (+21,949 people of working age).

Figure 1 2014-based SNPP change by age cohort (2020-2038)



Source: 2014-based SNPP / Lichfields analysis

3.5 Applying the OBR economic activity rates results in a projected labour force increase of 26,363 (8.9%).

3.6 The LHN figure for Sheffield is based on an uplift of 10.31% from the SNHP. This is intended to respond to affordability pressures that exist. Whilst some of the additional houses (associated with the uplift) will be occupied by existing residents that presently reside in concealed houses and are therefore within the local labour force, the uplift will also reduce the likelihood that working age people will move from the authority area to more affordable areas. The implication is that the delivery of 2,131dpa will support a larger level of population growth than would otherwise be associated with the SNHP figure of 1,932pa.

3.7 The Standard Methodology applies an uplift of 10.31% uplift to the SNHP figure of 1,932 per annum to arrive at the LHN figure of 2,131dpa. In order to test the implications of the LHN figure, we have increased the SNPP population change for Sheffield by the same amount. We have applied this level of increase equally to each age/gender cohort and have assumed that the increase will apply evenly across the Plan period. This is considered to be a reasonable assumption given that the Standard Methodology applies the uplift in order to arrive at an annualised housing need figure.

3.8 This adjustment results in a total population increase of 67,202 between 2020 and 2038, of which 60,330 (90%) will be over the age of 16 and 36,119 (54%) will be over the age of 65.

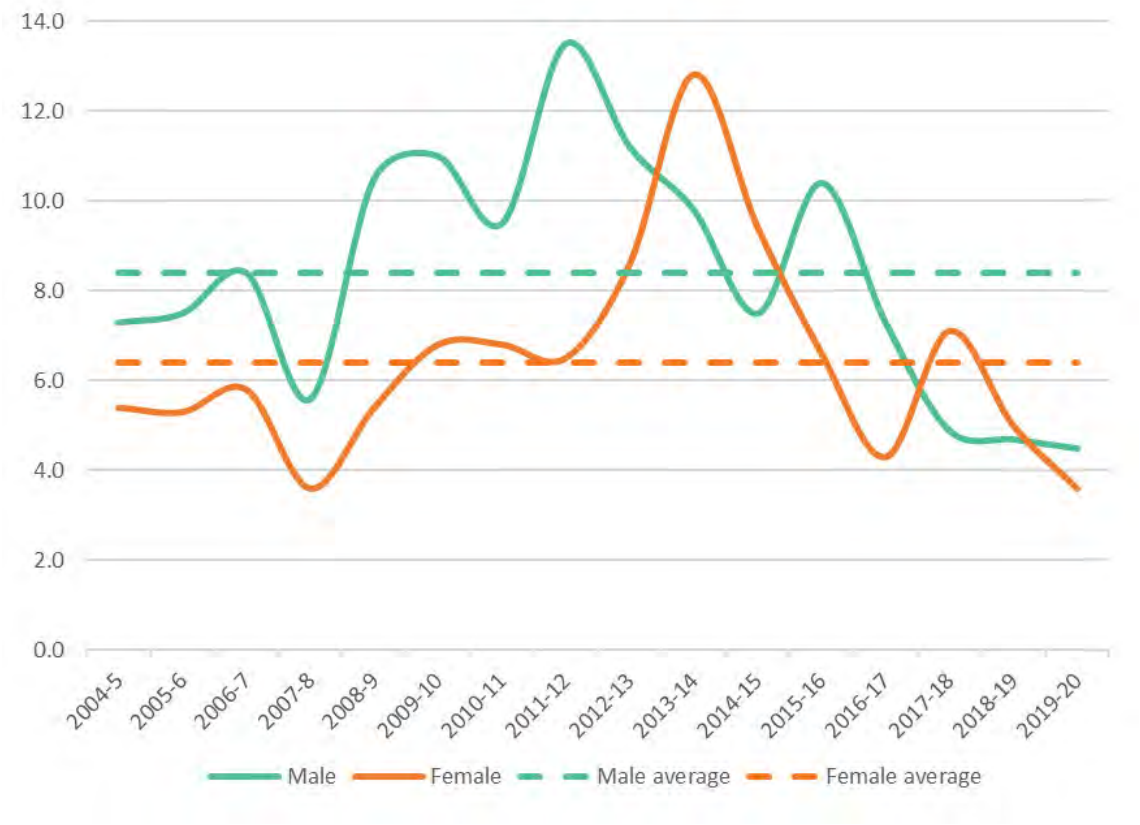
3.9 Through the application of economic activity, unemployment and commuting rates, it is possible to understand the number of jobs that would be supported by this population change:

1 Economic activity rates in Sheffield have been consistently lower than the average figures for Yorkshire and the Humber and Great Britain. The OBR projections anticipate that this will continue to be the case. The application of economic activity rates by age and gender, based on the OBR forecasts results in a labour force increase of 28,404 (+9.5%). This equates to 1,578 per annum.

2 Unemployment rates for people over the age of 16 in Sheffield (Male: 4.5%; Female: 3.6%[2]) are currently below the longer-term average levels. We have therefore applied the current rates for males and females for the remainder of the Local Plan period and have not assumed that there would be any future increase or decrease in the local unemployment rate. The implication of this is that the number of local residents that are in employment would increase by 27,248 (1,514 per annum).

[2] Data refers to the period from April 2019 to March 2020

Figure 2 Unemployment rate in Sheffield by gender



Source: ONS Annual Population Survey

3 The 2011 Census shows that Sheffield was a net-importer of labour with a daily net in-flow of 17,665 people. This equates to 8.5% of the resident workforce.

4 The implication of this additional workforce in the City means that the proposed housing requirement will support an additional labour supply of 29,573, equivalent to 1,643 per annum.

3.10 This labour supply is higher than the baseline figure set out in the Experian forecasts (1,161pa), but is just 70% of the SCR target of 1% job growth per annum (2,297pa). It is also 86 jobs per annum lower than the mid-point figure of 1,729 jobs per annum identified in paragraph 1.10. Over the 18-year period to 2038, this would result in a shortfall of 1,548 jobs.

3.11 Based on the analysis set out above, we consider that an increase in the housing requirement to a figure of 2,275dpa – an increase of 144dpa over the current LHN figure – is necessary to ensure alignment between housing and employment growth in accordance with the requirements of the NPPF.

3.12 Whilst this is a modest increase, it demonstrates an upward pressure on housing need. Critically, it follows that Sheffield City Council should avoid making any downward revisions to its proposed housing requirement as a result of any future changes to the Standard Methodology. Doing so would result in a greater level of misalignment between housing and employment growth.

4.0 Conclusion

4.1 This analysis has demonstrated that there is a misalignment between the LHN figure that Sheffield City Council intends to use as a basis for its emerging Local Plan and the employment targets that it has identified. This creates a justification for an upward adjustment to the housing requirement figure, so as to avoid any threat to the continued well-being of the local economy.

4.2 The importance of further boosting housing delivery in order to support the economy is underlined by the growth strategies that exist for the city.

4.3 Building on the City Deal that was agreed in 2012 and the Growth Deal agreed in July 2014, the Sheffield City Region Devolution Agreement[3] was intended to enable the City Region to *"accelerate the delivery of its Strategic Economic Plan and strengthen its position as a centre for advanced manufacturing and engineering"* (page 3). This is important given the aspiration of the SEP to support the delivery of 96,000 jobs and 90,000 new homes over the next 15 years,

4.4 The Devolution Agreement and Growth Deal are both critical in shaping the future direction of the local economy in Sheffield. Achieving an adequate level of housing growth in line with the uplift identified above will be important in ensuring the successful implementation of these growth strategies for the City.

4.5 Based on the analysis set out above, we consider that an increase in the housing requirement to a figure of 2,275dpa – an increase of 144dpa over the current LHN figure – is necessary to ensure alignment between housing and employment growth in accordance with the requirements of the NPPF.

4.6 We would strongly caution against any future downward revisions to the housing requirement which would generate a greater level of misalignment between housing and employment growth.

[3] The order for the Deal was laid before Parliament in June 2020.

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Annex 3: **Green Belt Review Technical Note**

LICHFIELDS

Technical Note

Our ref 50479/02/CD/ZS
Date October 2020
From Lichfields

Subject Sheffield Green Belt Review

1.0 Introduction

1.1 This Technical Note has been prepared to comment specifically on the methodology, the application and conclusions of the Green Belt Review undertaken by Sheffield City Council (SCC) as part of the evidence base for the preparation of the emerging Local Plan.

1.2 It is prepared in the context of CEG's land interest at land east of Langsett Road North, Oughtibridge which is identified as site O-3a in the Green Belt Review. The details of this site can be found in the main representation which this note is appended to.

Land at Oughtibridge

1.3 The site is located centrally within Oughtibridge; it is contained adjoining existing housing and other natural defensible boundaries. It has no formal existing use and covers an area of approximately 3.19 hectares (7.9 acres). There is an existing unmade track which runs along the majority of the extent of the eastern boundary of the site that provides access to the sports fields and pavilion to the north and east. There are bus stops located on Langsett Road North which are within easy walking distance.

1.4 The site is bound by woodland to the north and east, existing development along Forge Lane to the south and east, and Langsett Road North to the west. The site is located adjacent to existing sports pitches (in the control of CEG) which are accessed from an unmade track leading from Forge Lane which runs adjacent to the site boundary.

1.5 The land off Langsett Road North is considered to perform poorly against the five purposes of the Green Belt (as set out in paragraph 134 of the NPPF). An assessment of the site against the Purpose is provided under Section 2.0 of this note but is also summarised below for ease of reference:

1 Purpose 1: to check the unrestricted sprawl of large built-up areas

The site has strong defensible boundaries and would not set a precedent for wider development of the village. The River Don represents a robust future Green Belt boundary, along with the location of part of the land within flood zones 2 and 3 and the national forest designation beyond. It would represent a 'rounding off' of Oughtibridge.

2 Purpose 2: prevent neighbouring towns merging into one another

The site has strong definable boundaries and no settlements located to the north and east of the site.

3 Purpose 3: to assist in safeguarding the countryside from encroachment

The current use of the site and extent of containment would not result in encroachment into the countryside. The development of the site and the resultant pedestrian and cycle links created could, however, result in enhanced access to the countryside.

4 Purpose 4: to preserve the setting and special character of historic towns

The site is not located within or adjacent to a Conservation Area and there are no historical features located on site. Whilst the site is located adjacent to a Grade II listed building (Oughtibridge Forge) the setting of the building has changed as a result of the recent development around Forge Lane.

5 Purpose 5: to assist in urban regeneration by encouraging the recycling of derelict and other urban land

Development of the site would not prevent urban regeneration either in Oughtibridge, or elsewhere in the City. The redevelopment of the Oughtibridge Mill is already under construction and development of this site would complement it by way of enhanced connectivity.

1.6 As such, it is considered that the site forms part of the village and serves very little, if any, Green Belt function. It could be released from the Green Belt, allocated and developed without creating significant harm and would certainly not prejudice the overall purpose of Green Belt surrounding Oughtibridge.

2.0 Methodology

Sheffield approach

2.1 It is noted that there is no nationally prescribed methodology for undertaking a Green Belt Review. As such, Sheffield have opted to follow the 'common approach for undertaking Stage 1 of Green Belt Reviews'[1] agreed in 2014 with other Sheffield City Region Local Authorities (these include Barnsley, Doncaster, North Derbyshire, Bolsover, Chesterfield, Rotherham, Sheffield and Peak District National Park).

2.2 Stage 1 involves assessing large 'general areas', covering the entire Green Belt, against the five purposes of Green Belt set out in the National Planning Policy Framework (NPPF). Smaller 'resultant land parcels' are then drawn up at Stage 2, taking account of excluded areas. The resultant smaller parcels are then also assessed against Green Belt purposes (Stage 3).

2.3 The final stage (Stage 4) has not yet been completed; this part will report on which parcels are proposed as options for release from the Green Belt, if this approach is taken through the Local Plan, following review of evidence relating to housing land supply, and demonstration of exceptional circumstances for Green Belt release. The sites will be considered through Site Selection Methodology.

2.4 The agreed common approach for undertaking Stage 1 of Green Belt Reviews formed the basis of the Barnsley Green Belt Review which was considered by the Planning Inspectorate during the examination of the Local Plan in 2018. As the Inspector found no overall fault with the approach, it is considered to be a suitable basis for the Sheffield Green Belt Review to be based upon. The common approach does, however, allow for local interpretation and different scoring mechanisms to be applied by each local authority.

[1] https://www.sheffield.gov.uk/content/dam/sheffield/docs/planning-and-development/sheffield-plan/Proposed%20Sheffield%20City%20Region%20Combined%20Green%20Belt%20Review.pdf

2.5 While is it is considered appropriate to use the common approach as a starting point, the subsequent application of this approach by Sheffield raises a number of concerns, particularly scoring methodology adopted for assessing Green Belt parcels against the five purposes.

2.6 A specific scoring methodology is not defined in the common approach document, noting that "*in order to reflect local circumstances, each individual authority will decide the approach and weighting by which the Green Belt is appraised against the NPPF purposes".* The approach and weighting adopted by Sheffield is considered to be in need of refinement as detailed below.

2.7 Commentary on scoring methodology for each purpose:

- Purpose 1

  This purpose seeks to check unrestricted sprawl of large built-up areas. The generally agreed definition of 'sprawl' is 'development spread out over a large area in an irregular way'. To assess this purpose, Sheffield have opted to take into account two key considerations: firstly, to assess the proportion of the area that lies adjacent to existing built form and, secondly, the extent to which any future development would consolidate existing patterns of development.

  While the rationale behind the approach adopted by Sheffield it understood, the application of a quantifiable amount of parcel that adjoins the urban area is considered to be overly simplistic and not in keeping with other Green Belt Reviews carried out by neighbouring/other Local Authorities. These have adopted a qualitive approach to assessing Green Belt land against this purpose, looking more broadly at the proximity and relationship of the area/site to the built-up area – see for example Calderdale, Doncaster and Bradford[2]. This would allow for a judgement-based assessment and would prevent suitable sites from receiving a score which is arbitrarily applied.

  For example, the Bradford Green Belt Review lists a series of criteria by which a parcel is assessed, and which is considered to be more useful in assessing the contribution a site has in achieving this Green Belt Purpose. The criteria are as follows:

  a C1. Is the parcel on the edge of one or more large built up areas? (Y/N)

  b C2. Does the inner parcel boundary prevent the outward, irregular spread of the large built up area and serves as a barrier at the edge of the large built-up area in the absence of another defensible boundary? (score major/moderate/low)

  c C3. Connection to large built up area? (score major/moderate/low)

  It would also be useful if the Green Belt Review considered the outer parcel boundary of the Green Belt parcel to considered durability and defensibility of any new boundary treatment.

  With regards to land east of Langsett Road North, the site performs poorly against this purpose for the reasons outlined below. The site is extremely well contained with clear defensible boundaries and would result in the logical rounding off of Oughtibridge. For example, the site is located on the edge of the Green Belt as presently defined but is bound to the north by woodland and the River Don, Langsett Road North and existing residential development to the west and existing development to the south. As such, given the strong defensible boundaries around the site any development would not set a precedent for wider development of the village in the future and would not result in any unrestricted sprawl or encroachment into the countryside. The River Don represents a robust future Green Belt

[2] Calderdale – see Table 2b Green Belt Purpose 1: Assessment Criteria; Doncaster – see Table 6 Assessment Criteria; Bradford – see Table 3.1 Purpose 1 Assessment Criteria

boundary, but in any event the sports pitches adjacent to the river are within the flood zone which would also act as a further barrier preventing unrestricted sprawl.

- Purpose 2

  This purpose seeks to prevent neighbouring towns from merging into one another. No comments on this approach.

  Land east of Langsett Road North is bound by strong definable boundaries and there are no settlements located to the north of the site, it is considered that it would in no way result in, or increase the possibility of, Oughtibridge merging with any other nearby settlement.

- Purpose 3

  This purpose seeks to assist in safeguarding the countryside from encroachment. Sheffield have adopted the suggestion set out in the 'common approach' document which recommends assessing this purpose in relation to the extent of 'beneficial' uses; these are defined in paragraph 141 of the NPPF and include *"...looking for opportunities to provide access; to provide opportunities for outdoor sport and recreation; to retain and enhance landscapes, visual amenity and biodiversity; or to improve damaged and derelict land."*

  The Sheffield Green Belt Review then applies a scoring mechanism to rank the land (1 to 5) depending on the portion of Green Belt which is covered by beneficial uses. This is considered to be overly simplistic and results in many of the general areas and smaller sites assessed to receive the same score. Indeed, it is noted that 70 out of 75 parcels assessed across Sheffield score the highest score possible, 5. It therefore does not provide an appropriate basis for comparing different sites against this purpose.

  The methodology used by Bradford in its Green Belt Review sets two different assessment criteria to assist in disseminating the results, looking at both the extent the Green Belt parcel protects the essential open countryside character and then what extent does the Green Belt parcel safeguard the countryside from encroachment. As a key, fundamental Purpose of the Green Belt, it is considered that a criteria that yields a more diverse range of results should be applied.

  Regardless of the above, the land east of Langsett Road North, given its current use and extent of containment, would not result in encroachment into the countryside. Development of the site and the resultant pedestrian and cycle links created could, however, result in enhanced access to the countryside.

- Purpose 4

  This purpose is about preserving the setting and special character of historic towns. At this stage, it is not considered necessary to comment on the methodology for this purpose.

  For land east of Langsett Road North, the site is not located within or adjacent to a Conservation Area and there are no historical features located on site. Whilst the site is located adjacent to a Grade II listed building (Oughtibridge Forge) the setting of the building has changed as a result of the recent development around Forge Lane. It is not considered that the development of the site for housing will have any adverse impact upon this designated heritage asset. The development of the site will therefore not have any detrimental effect on the setting or special character of Oughtibridge.

- Purpose 5

  The last of the five purposes is to assist in urban regeneration by encouraging the recycling of derelict and other urban land. It is generally accepted that this is an overarching purpose

of the Green Belt i.e. to seek to concentrate development where possible within the existing urban area and is not considered appropriate to individually score sites and parcels against this criteria. All areas within the Green Belt by their nature and designation should contribute to the recycling of derelict and urban land. Green Belt is generally a prohibitive designation where development is rarely acceptable thus urban development becomes the focus.

For this reason, it is not considered appropriate to individually assess sites in this way. It is noted that other local Green Belt reviews (see Calderdale and Bradford as examples of this approach) do not assess individual sites against this purpose. Indeed, it is noted that the 'common approach' document referred to above references a range of assessment criteria adopted by other local planning authorities that exclude an assessment of sites against this purpose.

Sheffield have not adopted this approach, suggesting as there are areas of previously developed land or urban uses in the Green Belt itself which may benefit from regeneration or re-use, it is considered appropriate to assess land against this purpose.

As with proposed assessment for Green Belt purpose 3, as 70 out of 75 parcels all score the maximum '5', the usefulness and validity of applying this normally more strategic assessment to areas of land is questioned. As such, it is recommended that this scoring methodology is applied identically to all sites to reflect the general restrictive nature to Green Belt policy.

It is certainly not considered appropriate to utilise the methodology of scoring a site more favourably if it contains some existing built form. The appropriateness of the redevelopment of such sites, should be separately considered against paragraph 145(g) of the Framework.

The development of the site at Langsett Road North would not prevent urban regeneration either in Oughtibridge, or elsewhere in Sheffield city.

2.8 When assessing the results for the general areas as part of Stage 1, the Green Belt Review acknowledges that the methodology and results for Purposes 3 and 5, *"…are less helpful for differentiating between relative performance of general areas"*. This is in line with the comments noted above and it is suggested limited weight is attached to the scores ascribed to these Purposes. Certainly, any parcel should not be considered more favourably over another because of their relative assessments against these individual purposes.

2.9 With regards to the Stage 2: Identification of smaller Green Belt parcels, this largely follows the approach set out in the common approach document and is considered to be acceptable as it removes sites that are subject to statutory and environmental protections.

2.10 Stage 3 of the Green Belt Review seeks to assess the identified smaller parcels against the Green Belt Purposes. The same methodology as used for Stage 1 is applied to the smaller parcels. The boundary of each parcel was also assessed to ascertain how robust the Green Belt boundary would be if the parcel were removed from the Green Belt – this is then compared to the relative strength of the current boundary. The Green Belt purpose scores were combined to generate a total score for each parcel. The higher the score (out of 20), the greater the parcel's overall contribution to Green Belt purposes.

2.11 It is noted that paragraph 6.18 acknowledges that almost all parcels score the same for purpose 3 and 5 so these have not been mapped separately (the scores are however noted in Appendix 5 of the Green Belt Review). It is noted that *"'Discounting' the scores for purposes 3 and 5 is*

consistent with interpretation of Green Belt purposes recommended in PAS. Their guidance makes clear that, broadly, all Green Belt land can be regarded as safeguarding the countryside, and assisting urban regeneration."

2.12 As with the assessment of the general areas in Stage 1, it is agreed that less weight should be applied to Purposes 3 and 5.

3.0 Land east of Langsett Road North, Oughtibridge

3.1 The land to the east of Langsett Road North, Oughtibridge has been considered as part of the Green Belt Review – comprising General Area O-3 and resultant parcel O-3a (it is noted that these both comprise the same area). A summary of the scoring it received is provided below, along with a commentary on its suitability for release from the Green Belt in order to assist Sheffield City Council in meeting its housing requirement.

Stage 1: General Areas

3.2 As a general area, the Site scored 13/20 as follows when applying the adopted Scoring Methodology outlined above.

Table 1 General Area Site O-3 Green Belt Review Assessment

	Purpose 1	Purpose 2	Purpose 3	Purpose 5	Total
Site O-3	2	1	5	5	13

3.3 This general area has the lowest score in the Oughtibridge area meaning is scores least well against the assessed Green Belt Purposes. The other general areas score between 15-17, including Site O-4 at 16 (for relevance see below). Taken on its own and notwithstanding our wider commentary on the methodology, it is the most appropriate general area to be removed from the Green Belt in and around Oughtibridge and one of the most appropriate locations throughout the wider city.

3.4 With regards to the scoring applied to general area O-3, it is considered that due to the strong defensible boundary of the site and its containment, the site should score 1 for Purpose 1.

3.5 With regards to Purpose 3, the boundary of general area O-3 is difficult to make out on the plans provided but assuming it includes all land from Langsett Road North to the River Don, it is unclear how the site scored the maximum 5 i.e. over 80% of area covered by beneficial/appropriate countryside uses[3] and, consequently, performs a very strong role in assisting in safeguarding the countryside from encroachment. The land directly east of Langsett Road North is primarily open grass field with limited number of informal walking routes and landscape features[4]. The general area does, however, contain the land directly adjacent to the River Don which is currently in recreation use. This can be seen in Figure 1.

[3] Beneficial/appropriate countryside uses include: Access – public rights of way/cycle paths; Outdoor sport and recreation; Biodiversity/natural history – e.g. Local Nature Reserves, Local Wildlife Sites, Sites of Special Scientific Interest, waterways; Agriculture; Equine; Woodland; and Cemeteries.

[4] The extent of the site boundary has been queried with SCC and at the time of preparing this submission, we are waiting on a response. We therefore reserve the right to make further comment in due course if needed.

Figure 1 Land east of Langsett Road, Oughtibridge - Opportunities and Constraints Plan

3.6 At most it is considered that 40-60% of the general area is covered by a beneficial/appropriate countryside use and that it performs a moderate role in assisting in safeguarding the countryside from encroachment. This would give a score of 3.

Table 2 General Area Site O-3 Green Belt Review Assessment - AMENDED

	Purpose 1	Purpose 2	Purpose 3	Purpose 5	Total
Site O-3	1	1	3	5	9

3.7 Site O-3 is, therefore, considered to have a score of 9 which makes it one of only two general areas scoring 9 (out of 20) and the most poorly performing sites against the Green Belt purposes.

Stage 2: Identification of smaller Green Belt parcels

3.8 As part of Stage 2, the general areas have been split into a number of smaller Green Belt parcels. No comments is made on the methodology or the approach. It is, however, assumed that the boundary of parcel O-3a reflects that of SHLAA site S01187 (see Figure 4.1 of the main representation submission)[5]. This boundary reflects that promoted by CEG through previous call for sites consultations and does not include the sports pitches which run adjacent to the River Don.

[5] A query has been raised with the planning policy team over this boundary as the map in the Green Belt Review is not clear. Should the site boundary be different to Figure 4.1, we reserve the right to make further representations.

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Stage 3: Assessment of smaller parcels against Green Belt purposes

3.9 Under the assessment carried out by Sheffield, Site O-3a receives the same score at the General Area as outline in Table 3.

Table 3 Smaller Parcel Site O-3a Green Belt Review Assessment

	Purpose 1	Purpose 2	Purpose 3	Purpose 5	Total	Robustness of GB boundary
Site O-3a	2	1	5	5	13	2

3.10 Table 3 of the Green Belt Review provides a summary of the distribution of overall scores for the 204 smaller parcels. With a score of 13, Site O-3a is within the top 27% of sites which score poorly against the Green Belt Purposes.

3.11 However, as with the scores attributed to the general area (O-3) it is also considered that the scores for Purpose 1 and 3 should be amended.

3.12 With regards to the scoring applied to Purpose 1, it is considered that due to the strong defensible boundary of the site and its containment, the site should score 1.

3.13 For Purpose 3, unlike the general area the smaller parcel does not include adjacent to the River Don which contains the recreation uses/sports pitches. As such, the site does not contain any beneficial/appropriate countryside uses as defined in paragraph 5.22 of the Green Belt Review. and the score given for the smaller land parcel should be amended to **1** i.e. *up to 20% of area covered by beneficial/appropriate countryside uses. It performs a weak role in assisting in safeguarding the countryside from encroachment.*

3.14 On this basis, the overall score for the site should be 8 as set out in Table 4. This score would make it the poorest performing smaller parcel of land considered as part of the Green Belt Review.

Table 4 Smaller Parcel Site O-3a - Revised Green Belt Review Assessment

	Purpose 1	Purpose 2	Purpose 3	Purpose 5	Total	Robustness of GB boundary
Site O-3a	1	1	1	5	8	2

3.15 As noted above, within Oughtibridge General Area O-4 was considered as part of Stage 1 and carried through following Stage 2 to Stage 3. This area was split into two sites, O-4a and O-4b. these can be seen in Figure 2.

Figure 2 Green Belt Review: Smaller Parcel Areas

3.16 The scored attributed to the sites following the application of the Scoring Methodology are given in Table 5.

Table 5 Smaller Parcel Sites O-4a/b Green Belt Review Assessment

	Purpose 1	Purpose 2	Purpose 3	Purpose 5	Total	Robustness of GB boundary
Site O-4a	3	1	5	3	12	2
Site O-4b	4	3	5	5	17	2

3.17 As will be noted above, all Sites (O-3/O-4a/O-4b) have been scored the same for the its robustness of Green Belt boundary and for Purpose 3. There are, however, differences in the scores for Purposes 1, 2 and 5 where both O-4 sites perform more strongly against the Green Belt Purposes for 1 and 2.

3.18 For the reasons set out above in this note, it is suggested that Sheffield's approach to the scores applied to Purpose 5 should be reviewed and all sites given the same score (if indeed it were to be scored against this purpose at all). If this were the case, and assuming all sites were given the score 5, the score for Site O-4a would increase to 14.

3.19 Should it be deemed necessary as part of the Spatial Strategy to identify land in the Green Belt for removal and development and within larger villages such as Oughtibridge, it is considered the O-3a site would be the most suitable site as it performs the least well when assessed against the five Purposes of the Green Belt.

3.20 Further to the Sheffield City Council assessment of Site O-3a in the Green Belt Review, our own assessment of the land east of Langsett Road North concluded that the site serves a minimal function when considered against all five purposes of Green Belt as set out in paragraph 134 of the NPPF and in light of its location would represent sustainable development that would support the long term function of the village.

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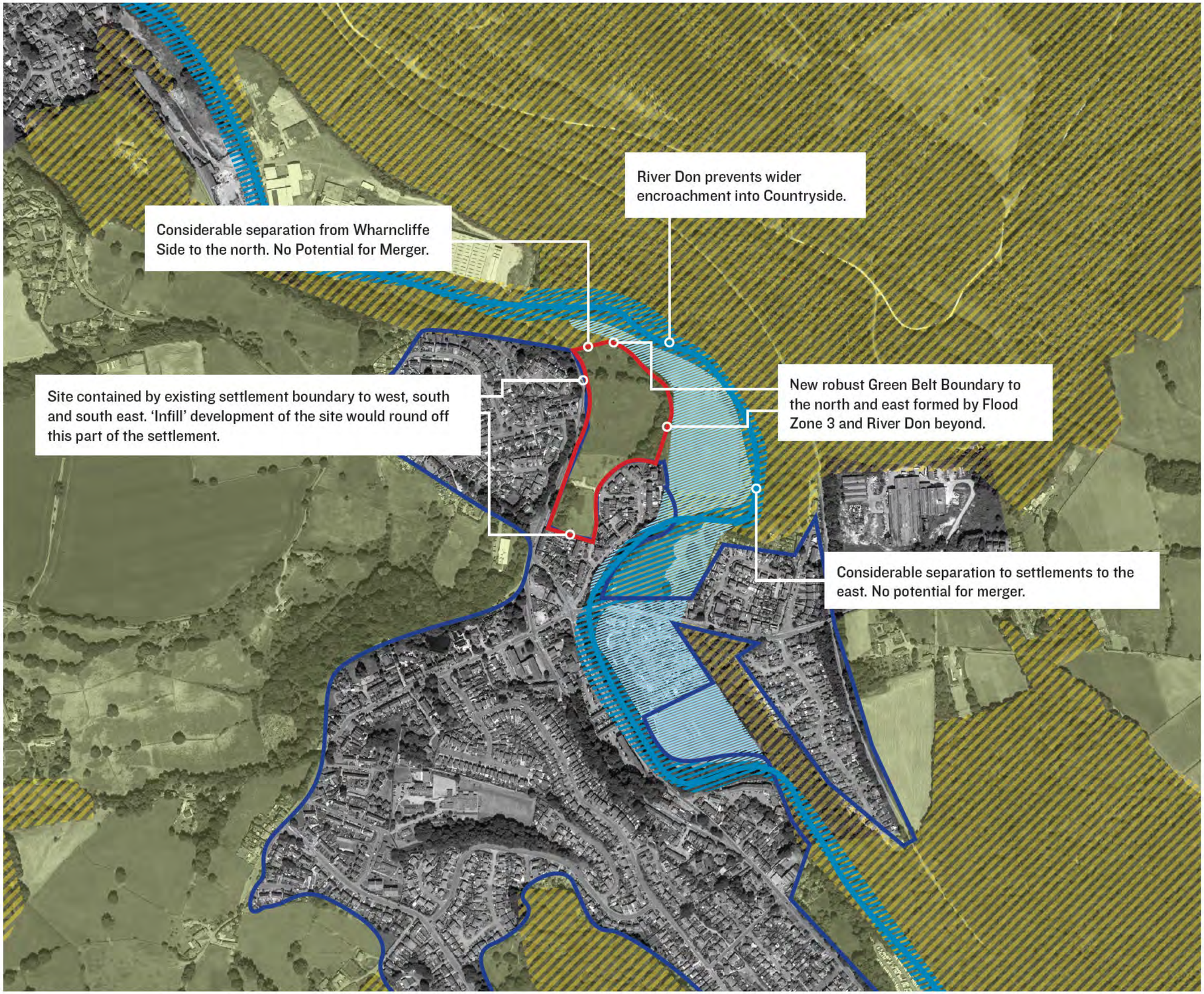
Annex 4: **Green Belt Plan – Land east of Langsett Road North, Oughtibridge**



KEY

- Site Boundary
- Flood Zone 2
- Flood Zone 3
- Protected Woodland / Green Space
- Green Belt
- Settlment Boundary
- River Don

LICHFIELDS

Project	**Proposed Residential Development, Land East of Lonsett Road North, Oughtbridge**
Title	**Green Belt Purpose / Containment Plan**
Client	**CEG Land Promotions Ltd**
Date	**September 2020**
Scale	**NTS**
Drawn by	**MK**
Drg. No.	**IDD50479-001**

N

LF50479

Annex 5: **Site Selection Review**

Technical Note

Our ref 50479/02/CD/ZS
Date October 2020
From Lichfields

Subject Site Selection Review

1.0 Introduction

1.1 This Technical Note has been prepared to comment specifically on the methodology of the Site Selection Methodology proposed by Sheffield City Council (SCC) as part of the evidence base for the preparation of the emerging Local Plan. It is prepared in the context of CEG's land interest at land east of Langsett Road North, Oughtibridge (the details of this site can be found in the main representation which this note is appended to). To assist SCC, an assessment of the site against the proposed methodology has been undertaken and a number of supporting documents have been attached:

- Appendix 1: Preliminary Appraisal of Flood Risk (March 2018)
- Appendix 2: Preliminary Drainage Appraisal (March 2018)
- Appendix 3: Access Appraisal (March 2018)
- Appendix 4: Access Option 1 Visibility Splay - Drawing No. 15/215/TR/034 Rev A (March 2018)

2.0 Methodology Review

2.1 The primary purpose of a Site Selection process is to identify an appropriate portfolio of sites to allocate for housing in the Local Plan to meet an identified housing requirement over the plan period. Paragraph 67 of the National Planning Policy Framework (NPPF) states *"Strategic policy-making authorities should have a clear understanding of the land available in their area through the preparation of a strategic housing land availability assessment. From this, planning policies should identify a sufficient supply and mix of sites, taking into account their availability, suitability and likely economic viability."*

2.2 The Site Selection Technical Note sets out the intended methodology by which SCC will seek to identify appropriate sites; however, it is understood that this is at an early stage and will be refined and updated as more information and site evidence become available.

2.3 While at an early stage, it is considered important to provide an initial review of the methodology proposed by SCC to ensure it will provide a robust evidence base for the preparation of the Local Plan. The methodology is, however, high-level and as such the comments provided reflect the amount of detail available at this time.

2.4 When considering the sites to be assessed, it is agreed that sites that form part of the Green Belt should be included. As concluded in Section 3.0 of the main representation, it is considered that due to the level of unmet need of housing capable of being accommodated in the central and urban areas of Sheffield, at least 7,800 dwellings will need to be accommodated on Green Belt sites over the plan period.

Suitability Assessment

2.5 It is noted the suitability assessment will be carried out in two stages: first a sustainability appraisal carried out for each site, followed by a planning assessment to reach a judgement on whether the site is suitable for potential allocation.

2.6 Regarding the sustainability appraisal, the indicators provided in Appendix 1 of the Technical Note look largely acceptable and in keeping with those used by Barnsley in its Housing Site Selection Methodology and Doncaster in its Housing & Employment Site Selection Methodology & Results Report (June 2019).

2.7 In order to assist SCC in its consideration of the land east of Langsett Road North, an assessment has been undertaken of the site against the suggested sustainability indicators; see Table 1.

Table 1 Assessment of Site against suggested sustainability indicators

	Indicator*	Significant positive	Minor Positive	Neutral	Minor negative	Significant negative
1	Is the site in housing renewal area?			No		
2	Distance to incompatible uses		None of the site is close (within 50m) of a policy area where incompatible uses would be allowed or are already in existence			
3	Loss of open space		No open space on-site			
4	Sufficient existing open space in the area	Sufficient open space				
5	Loss of community/cultural/leisure/recreation facilities		No existing facility on site			
6	Proximity to local or district centres		Some of site <800m to City or District Centre, or <400m to Local Centre			
7	Distance to core public transport network		Some of the site is within the CPTN buffer, or within a 400m actual walk from a 3			

	Indicator*	Significant positive	Minor Positive	Neutral	Minor negative	Significant negative
			bus per hour bus stop			
8	Use of previously developed land (PDL)					Development on predominantly greenfield land (<10% Previously Developed Land)
9	Loss of Grade 2 or 3a Agricultural Land	Urban or nonagricultural				
10	Conservation Area or Listed Buildings		Unlikely to affect			
11	Archaeology		No constraint known - based on available evidence			
12	Rural Landscape character		Landscape has higher capacity for absorbing development			
13	Ecology			Adjacent to ecological site		
14	Geology					Entire site has a geological designation (Groundwater Vulnerability Zone)
15	Flood Risk	The site is in Flood Zone 1				
16	Air Quality					Residential site in or close to air quality exceedance area
17	Likelihood of existing land contamination		Minimal			

*only housing site indicators used

2.8 Aside from three significant negative impacts (previously developed land, geology and air quality), all other scores are either neural or better (minor positive-significant positive). Taking account of the need to release land for development in the Green Belt (see paragraph 2.4 of this note and Section 3.0 of the main representation document), the findings of the appended Preliminary Drainage Appraisal and that the majority of land with SCC's authority boundary is located with the Sheffield Air Quality Management Area, the land east of Langsett Road North is considered to perform strongly against the sustainability indicators set out in Appendix 1 of the Site Selection Technical Note.

2.9 The next step in Stage 1 is to undertake a planning appraisal of the site to address whether any mitigation measures are necessary to make the site suitable for development. While is it suggested that further details are provided on the inputs into this, an appraisal of the land east of Langsett Road North has been undertaken.

2.10 Based on an assessment against the suggested sustainability indicators, the site only scores poorly against the previously developed land, geology and air quality indicators. The majority of the site is currently greenfield land and located in the Green Belt. The case has been made as part of the main representation submission, and in the various technical notes, that exceptional circumstances exist for the release of Green Belt land in order to meet its unmet housing. In this context, CEG's land interest at Oughtibridge has been assessed against the purposes of the Green Belt and considered to perform poorly against these and, as such, is a suitable site for release from the Green Belt.

2.11 The land east of Langsett Road North is therefore considered to be 'suitable' when assessed against SCC's Site Selection Methodology.

Availability

2.12 CEG is in control of the site and development can be brought forward during the plan period.

Deliverability

2.13 In considering whether a site is deliverable, the methodology suggests this assessment will review the likelihood that it will be economically viable to develop the site within the plan period (to 2038).

2.14 The site has been promoted by CEG through the previous call for sites process and a pre-application request has been submitted to SCC to discuss emerging development proposals for the site. as such, it is considered that the site is economically viable for development within the plan period and, thus, deliverable.

2.15 Furthermore, the land east of Langsett Road North is a suitable, available and deliverable site and should therefore be taken forward to Stage 2 for consideration of allocation.

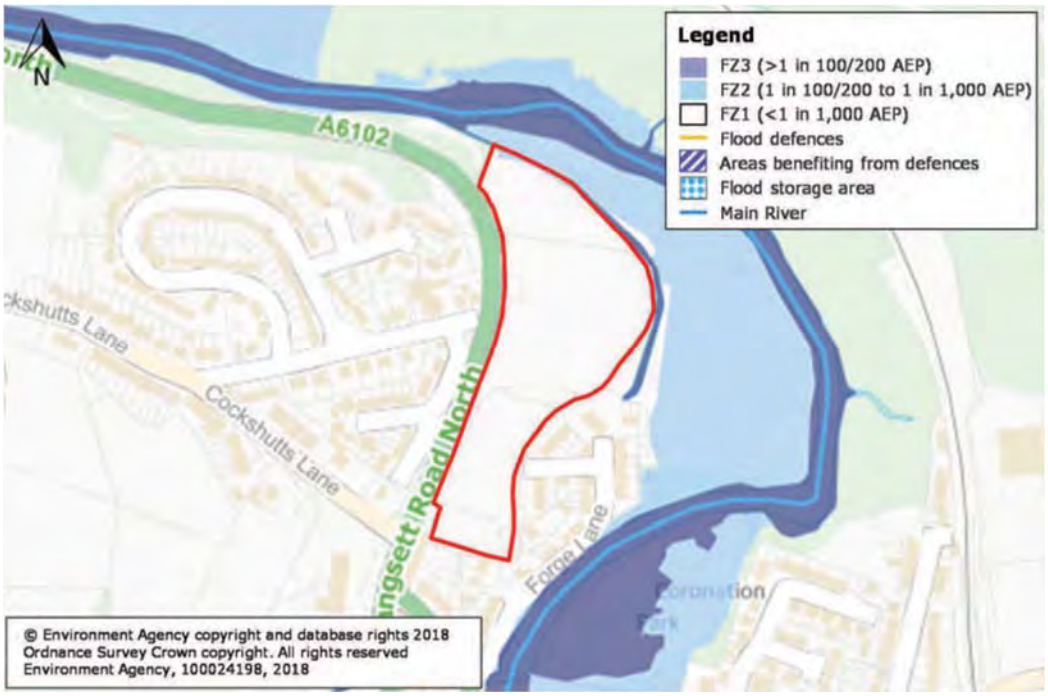
Phase 2: Deciding which of the sites identified in Phase 1 should be allocated

2.16 Due to the number of sites expected to pass through from Phase 1, Phase two of the Site Selection process seeks to assess each site against a further layer of constraints, including: flood risk, transport impacts and Gypsy and Traveller and Travelling Showpeople Site Assessment. These are considered in turn below, in relation to the land east of Langsett Road North.

Flood Risk

2.17 The preliminary flood risk appraisal, undertaken by Weetwood for the site (**see Appendix 1**), considers that the flood risk sequential test assessment has been addressed as the site is primarily situated within Flood Zone 1 (see Figure 1).

Figure 1 Flood Map for Planning (Rivers and Sea)



Source: Preliminary Appraisal of Flood Risk (Weetwood, 2018)

2.18 Weetwood has also undertaken a preliminary drainage appraisal (**see Appendix** 2) which sets out that foul water from the site would be directed to the existing public sewer and disposal of surface water could be disposed to the River Don – therefore demonstrating that surface water and foul water can be adequately managed should development be brought forward at this site.

Transport Assessment

2.19 In 2018, Bryan G Hall prepared an Access Appraisal for the site (**see Appendix 3**), which considered:

- The site's location east of Langsett Road North (A6102);
- Access arrangements into the site; and
- Sustainable transport opportunities.

2.20 The appraisal demonstrates that vehicular access can safely be achieved into the site from Langsett Road North, approximately 125m north of Cockshutts Lane - the indicative layout of which is attached to **Appendix 4**.

2.21 The Access Appraisal confirmed that the land east of Langsett Road North can serve a development of circa 70-80 dwellings via a simple priority T-junction where appropriate visibility can be achieved. Additionally, a carriageway width of 5.5 metres and 2 metre footways

on both sides can also be achieved in accordance with the South Yorkshire Residential Design Guide (2011). It is also indicated that Forge Lane, which currently provides access to a small housing development to the south east of the proposed site, may offer an additional point of access for pedestrians, cyclists and emergency vehicles.

2.22 With regards to non-private vehicular travel, the appraisal provides a range of sustainable transport benefits in relation to the site's location in Oughtibridge; these are summarised as follows:

- Facilities in Oughtibridge include Oughtibridge Primary School, a number of restaurants/public houses, a pharmacy, a doctor's surgery, a post office, a barber's and hair salon, a convenience store and a number of other small businesses – all of which are within reasonable walking distance from the site and, therefore, reduces the need to travel.
- There are pedestrian footways throughout the existing Forge Lane development and on both sides of Langsett Road North which provide routes into Oughtibridge, where there are a number of pedestrian crossing facilities.
- There are bus stops located on Langsett Road North which would be readily accessible from the site on foot. The SL1 and SL1A bus route (which runs from Middlewood Park & Ride site to Stocksbridge) operates five buses an hour and provides good access to the surrounding area. This route also provides an opportunity for onwards journeys into Sheffield via the Supertram. In addition, the 57 bus route (Sheffield – Stocksbridge) also stops at these bus stops and provides an hourly service between Sheffield Interchange and Stocksbridge. There is also a service to Bradfield School which stops in this location.

2.23 In light of the transport and access considerations set out above, at this stage in the Local Plan preparation process it has been established that residential development can be safely and suitably accessed at the site, whilst the site is also well placed within Oughtibridge to promote softer and more sustainable transport modes (i.e. walking, bus and Supertram).

Gypsy and Traveller and Travelling Showpeople Site Assessment

2.24 In-line with Policy E (Traveller sites in the Green Belt) of National Planning Policy for Traveller Sites (August 2015), Traveller sites - temporary or permanent - in the Green Belt are classed as inappropriate development. Policy E adds that *"subject to the best interests of the child, personal circumstances and unmet need are unlikely to clearly outweigh harm to the Green Belt and any other harm so as to establish very special circumstances"*. Indeed, in the local context, SCC acknowledges two Gypsy and Traveller Sites located within the Local Authority, one being situated at Redmires Land (Lodge Moor) which SCC states cannot be extended due to the its location in the Green Belt.

2.25 It is therefore considered that, as the land east of Langsett Road North is currently located within the Green Belt, it is not suitable to be brought forward in the local plan as a potential Gypsy and Traveller site.

Site Allocation Appraisal

2.26 The final stage in the Site Selection Methodology is to select which sites will be put forward as allocations. This appraisal will be prepared against the spatial strategy and accompanying spatial policies taken forward by SCC.

2.27 The land east of Langsett Road North, Oughtibridge is considered to be a suitable site for allocation for residential uses for the following reasons:

1 A review of the Spatial Strategy options contained within the Local Plan Issues and Options consultation identifies that due to the lack of capacity of urban areas to accommodate all of SCC's unmet housing requirement, exceptional circumstances exist for SCC to release land from the Green Belt meet this housing requirement.

2 An assessment of the site against the Green Belt Review methodology concludes that the site performs poorly against the five purposes of the Green Belt and, as such, is a suitable candidate for release. It is also the poorest performing site in Oughtibridge when considered against the Green Belt purposes and other identified land.

3 The site is located centrally within Oughtibridge, which is identified as a Larger Village and suitable for development. The site is not located near (within 50m) a policy area where incompatible uses would be allowed or already exist, whilst being located less than 400 metres distance from the local centre.

4 The site has been assessed in this Technical Note as being suitable, available and deliverable. Aside from its Green Belt and greenfield designation, it is free of any overriding constraints which cannot be successfully mitigated against that would prevent development being acceptable on site.

5 Allocating the land to east of Langsett Road North for residential development would provide a range of benefits, including improvements to the adjacent sports pitches which are also in the control of CEG. Development of this site could support enhancements to the sports pitches and associated open space to the benefit of new and existing residents within Oughtibridge. Improved vehicular access could be provided through the site into the adjacent sports pitches through the upgrading of the existing unmade track, making it easier for members of the public to travel to and from the pitches.

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Appendix 1 Preliminary Appraisal of Flood Risk (March 2018)

LAND EAST OF LANGSETT ROAD NORTH, OUGHTIBRIDGE

PRELIMINARY APPRAISAL OF FLOOD RISK

Final Report v1.0

March 2018

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Report Title:	**Land East of Langsett Road North, Oughtibridge** Preliminary Appraisal of Flood Risk Final Report v1.0
Client:	Commercial Estates Group (CEG)
Date of Issue:	19 March 2018

Prepared by:	Keely Bonser BSc MSc PhD *Principal Project Manager*
Checked and Approved by:	Kevin Tilford BSc MSc (Eng) PhD MBA C.WEM MCIWEM *Managing Director*

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1 INTRODUCTION

1.1 PURPOSE OF REPORT

Weetwood Services Ltd ('Weetwood') has been instructed by Commercial Estates Group (CEG) to undertake a Preliminary Appraisal of Flood Risk for the proposed development of Land East of Langsett Road North, Oughtibridge.

The assessment has been undertaken in accordance with the requirements of the National Planning Policy Framework (NPPF) and accompanying Planning Practice Guidance (PPG).

The report should be read in conjunction with the Preliminary Drainage Appraisal report prepared by Weetwood which addresses foul and surface water drainage for the proposed development (ref: *'Preliminary Drainage Appraisal – Land East of Langsett Road North, Oughtibridge; Final Report v1.0, March 2018'*).

1.2 STRUCTURE OF THE REPORT

The report is structured as follows:

Section 1	Introduction and report structure
Section 2	Presents national and local flood risk and drainage planning policy
Section 3	Provides background information relating to the development site, the development proposals, ground conditions and existing site access arrangements
Section 4	Assesses the potential sources of flooding to the development site
Section 5	Presents flood risk mitigation measures based on the findings of the assessment
Section 6	Presents a summary of key findings
Section 7	Presents the recommendations

2 PLANNING POLICY AND GUIDANCE

2.1 NATIONAL PLANNING POLICY

The aim of the NPPF is to ensure that flood risk is taken into account at all stages in the planning process and is appropriately addressed.

2.1.1 Sequential Test

Paragraph 100 of the NPPF states that *'inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk but where development is necessary, making it safe without increasing flood risk elsewhere*'.

This policy is implemented through the application of the flood risk Sequential Test which aims to steer new development to areas with the lowest probability of flooding.

2.2 LOCAL PLANNING POLICY AND GUIDANCE

The preliminary appraisal of flood risk has been informed by the following policy:

Sheffield City Council's (SCC) Core Strategy was adopted on 4 March 2009. Policy CS 67 'Flood Risk Management' states, in part, that the extent and impact of flooding will be reduced by:

a. Not culverting and not building over watercourses wherever practicable;
b. Not increasing and, where possible, reducing the building footprint in areas of developed functional floodplain;
c. Developing only water-compatible uses in the functional floodplain;
d. Not locating or subdividing properties that would be used for more vulnerable uses in areas of developed functional floodplain;
e. Designating areas of the city with high probability of flooding for open space uses where there is no overriding case for development;
f. Developing areas with high probability of flooding only for water-compatible uses unless an overriding case can be made and adequate mitigation measures are proposed;
g. Ensuring safe access to and from an area with a low probability of flooding.

Where an overriding case remains for developing in a zone with high probability of flooding, development will be permitted only if:

h. More vulnerable uses, including housing, would be above ground floor level; and
i. The lower floor levels of any other development with vulnerable equipment would remain dry in the event of flooding; and
j. The building would be resilient to flood damage; and
k. Adequate on and off-site flood protection measures would be provided.

SCC's Unitary Development Plan (UDP) was adopted as the statutory development plan for Sheffield in March 1998. Policy G17 (Green Environment), in part, states that all new development will be set back from a main river or stream by 8m to allow for landscaping and access.

2.3 CONSENTS

An Environmental Permit for Flood Risk Activities may be required from the Environment Agency (EA) for work:

- in, under, over or near a main river (including where the river is in a culvert)
- on or near a flood defence on a main river
- in the flood plain of a main river
- on or near a sea defence

Further information can be found at the .GOV website[1].

Land drainage consent may be required from the Lead Local Flood Authority or Internal Drainage Board for work to an Ordinary Watercourse. Undertaking activities controlled by local Byelaws (made under the Water Resources Act 1991) also requires the relevant consent.

2.4 RELEVANT DOCUMENTS

The preliminary appraisal of flood risk has also been informed by SCC's Strategic Flood Risk Assessment (SFRA) Level 1 (July 2008).

[1] https://www.gov.uk/guidance/flood-risk-activities-environmental-permits

3 SITE DETAILS AND PROPOSED DEVELOPMENT

3.1 SITE LOCATION

The approximately 3.19 hectare (ha) greenfield site is located to the east of Langsett Road North, Oughtibridge, Sheffield at Ordnance Survey National Grid Reference SK 308 936, as shown in **Figure 1**.

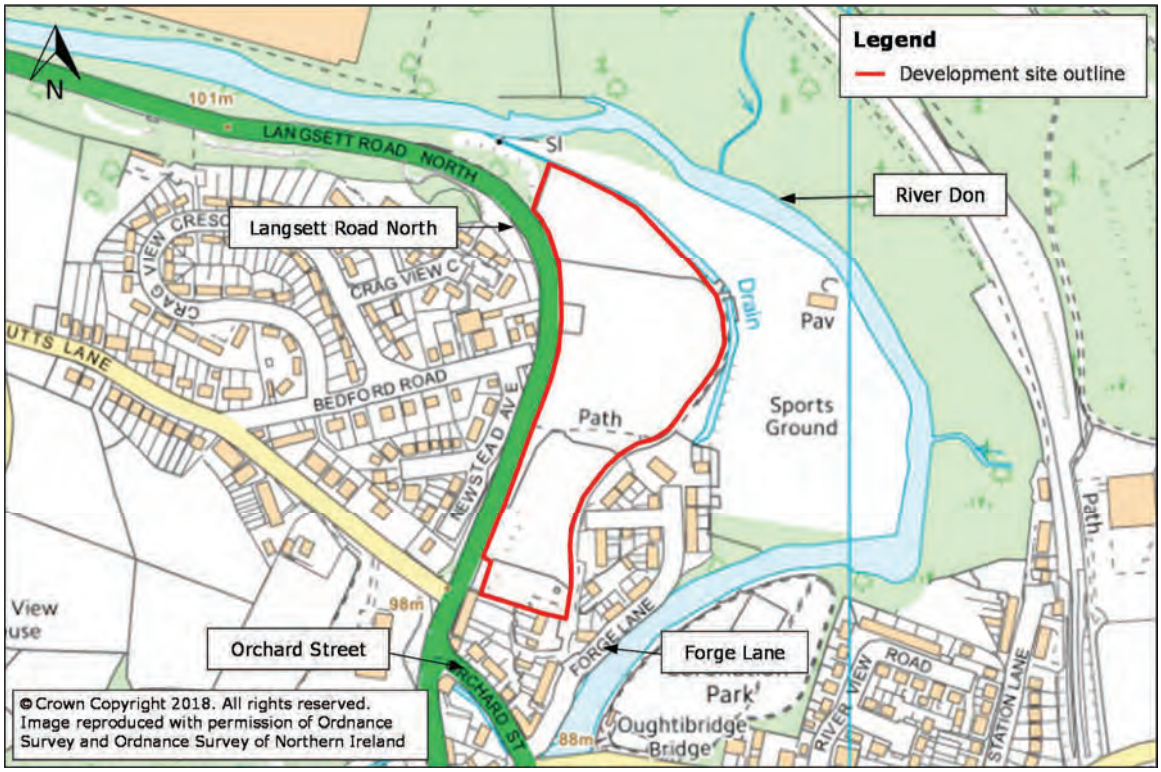

Figure 1: Site Location

3.2 PROPOSED DEVELOPMENT

The development proposals are for the construction of circa 80 residential dwellings. The PPG classifies residential development as 'more vulnerable' land use.

3.3 WATERBODIES IN THE VICINITY OF THE SITE

The River Don, a designated main river, flows predominantly in a south-easterly direction through Oughtibridge. Within the vicinity of the site, the river meanders around the northern, eastern and southern boundaries of the site and is located approximately 25 m to the north of the site, 180 m to the east of the site and 50 m to the south of the site.

A former mill race is located adjacent to the northern/eastern boundary of the site. The mill race spurs off the River Don via a sluice approximately 50 m to the north-west of the site. Based on OS mapping, Yorkshire Water (YW) utility records and a site visit, it is assumed that the mill race flows through a culvert within the Forge Lane residential estate and flows into YW's surface water sewer network (see **Appendix A**).

A pond is located within the southern portion of the site (as identified by a site visit and on the topographic survey (see **Section 3.5**).

3.4 GROUND CONDITIONS

According to the Soilscapes maps produced by the National Soils Research Institute[2], soil conditions at the site are described as `freely draining slightly acid loamy soils'.

According to British Geological Survey (BGS) mapping, ground conditions within the eastern portion of the site comprise of river terrace deposits (sand and gravel). The south-eastern portion of the site comprises alluvium (gravel, sand, silt and clay). No superficial deposits have been recorded within the western/southern portion of the site. The bedrock geology at the site comprises sandstone (Rough Rock Formation).

BGS borehole records[3] approximately 100 m to the west of the site indicate ground conditions to comprise of sandy stony clay up to approximately 3.0 metres below ground level (m bgl) underlain by sandstone up to 3.9 m bgl.

3.5 SITE LEVELS

A topographic survey of the site was undertaken by Met GeoEnvironmental in January 2018 and is provided in **Appendix B**.

The topographic survey indicates that the site generally slopes down in an easterly direction, with levels ranging between approximately 97.4 to 89.9 m Above Ordnance Datum (AOD).

3.6 ACCESS AND EGRESS

The site is accessed via Forge Lane adjacent to the south-eastern boundary. Levels range from approximately 90.4 to 89.9 m AOD within the vicinity of the site, with levels generally sloping down in a southerly direction.

[2] Soilscapes www.landis.org.uk/soilscapes/
[3] BGS borehole record ref: SK39SW189, SK39SW190 and SK39SW131

4 REVIEW OF FLOOD RISK

4.1 FLOOD ZONE DESIGNATION

Flood zones refer to the probability of river and sea flooding, ignoring the presence of defences. The PPG defines the zones as follows:

- **Flood Zone 1: Low Probability**. Land having a less than 1 in 1,000 annual probability of river or sea flooding.
- **Flood Zone 2: Medium Probability**. Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
- **Flood Zone 3a: High Probability**. Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
- **Flood Zone 3b: The Functional Floodplain**. This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency.

The flood zones are shown on the EA Flood Map for Planning (Rivers and Sea). The zones shown on the EA Flood Map do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding.

According to the EA Flood Map for Planning (Rivers and Sea) (**Figure 2**) the site is predominantly located in Flood Zone 1. The northern tip of the site and the north-eastern boundary abut Flood Zone 2 and Flood Zone 3 respectively (**Figure 3**).

4.2 SEQUENTIAL TEST

The proposed development platform will be situated within Flood Zone 1 and will therefore satisfy the requirements of the Sequential Test.

4.3 HISTORICAL RECORDS OF FLOODING

The EA historic flood map (**Figure 4**) indicates that flooding occurred along the south-eastern boundary of the site in June 2007 due to surface water flooding.

SCC's Overview Map of 2007 Flooding indicates that flooding occurred within the immediate vicinity of the site due to fluvial flooding.

Consultations with the EA, SCC and YW would need to be undertaken to determine if further incidents of flooding have occurred.

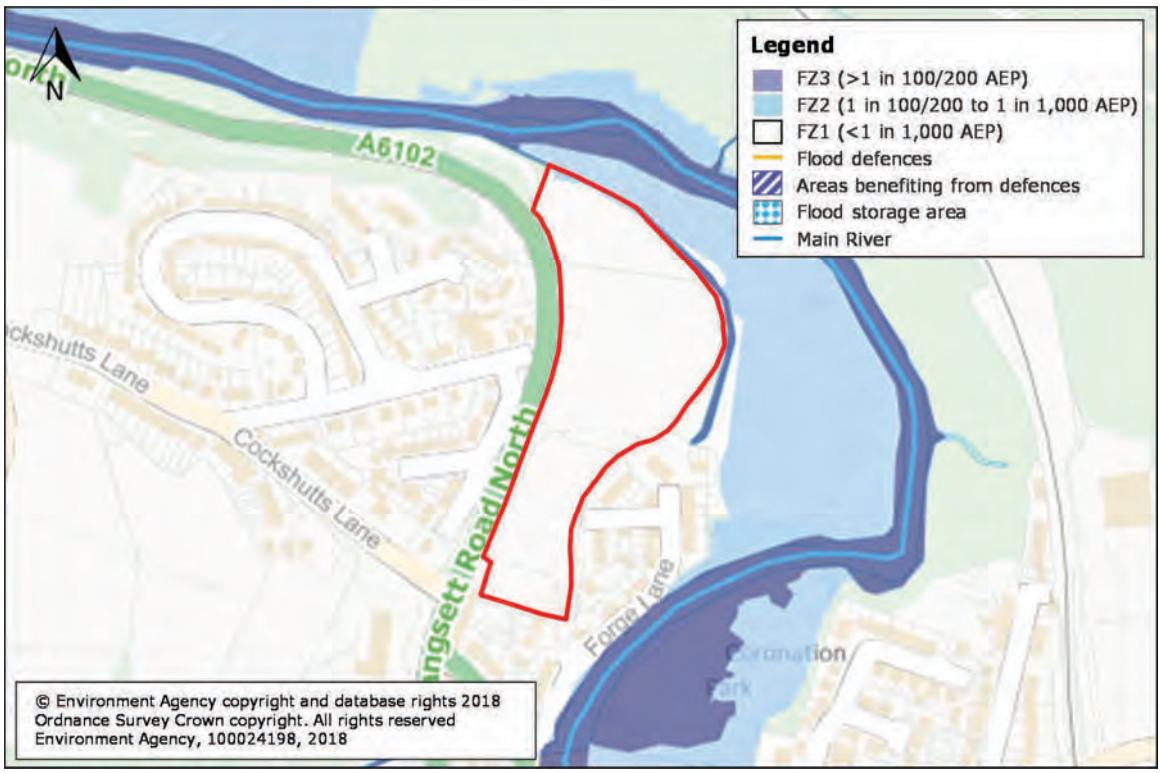

Figure 2: Flood Map for Planning (Rivers & Sea)
(Source: .GOV website)

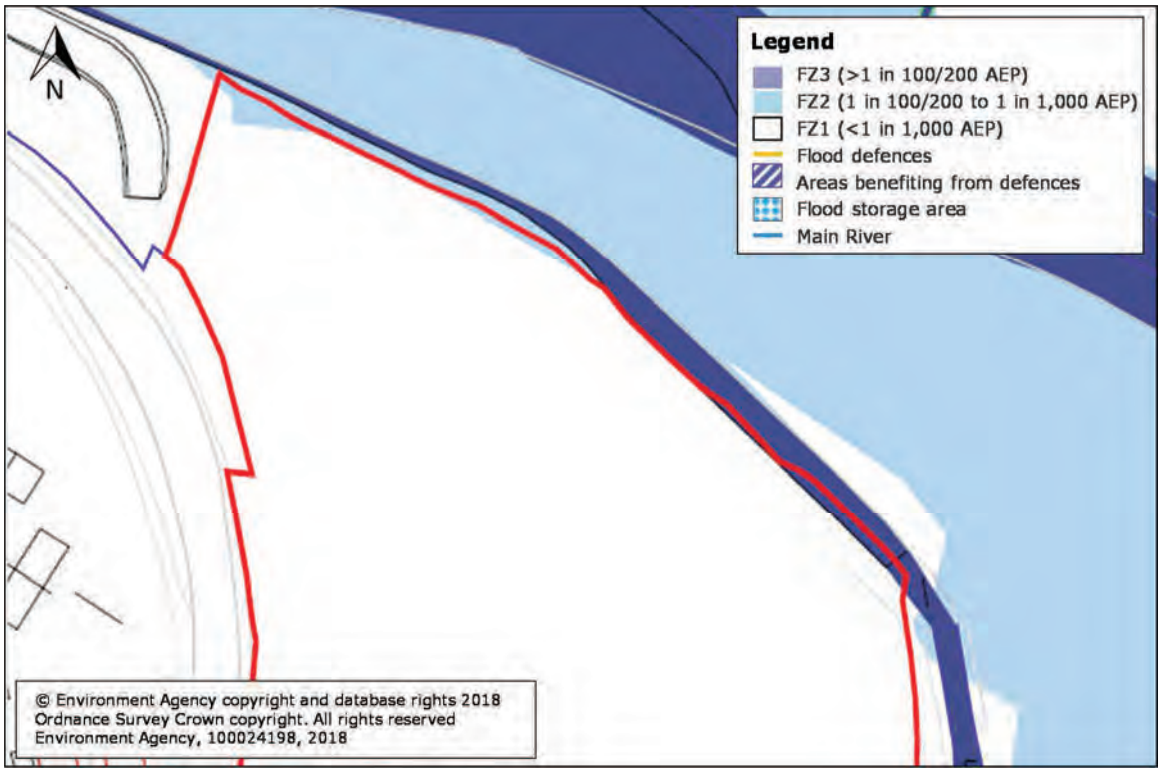

Figure 3: Flood Outlines and Site Redline
(Source: .GOV website)

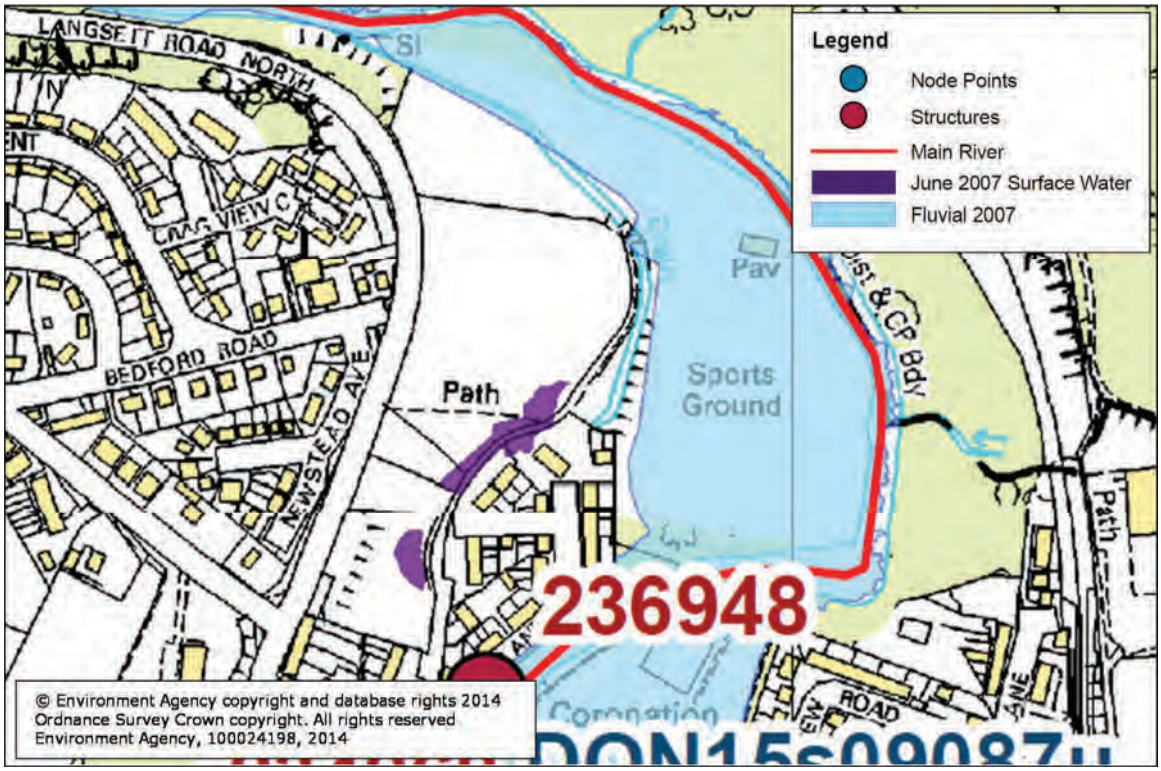

Figure 4: Historical Flood Map
(Source: Environment Agency)

4.4 FLUVIAL FLOOD RISK

4.4.1 River Don

The EA has previously confirmed that the 2007 flood outline has been used to define Flood Zone 2 on the EA Flood Map for Planning (Rivers and Sea).

As discussed in **Section 4.1**, the site is located in Flood Zone 1, with the northern tip of the site located in Flood Zone 2. As such, the majority of the site is not at risk of flooding from the River Don.

4.4.2 Mill Race

According to the EA Flood Map for Planning (**Figure 2**), the Mill Race is located in Flood Zone 3. Flood risk from the mill race would require further investigation.

4.5 FLOOD RISK FROM RESERVOIRS, CANALS AND OTHER ARTIFICIAL SOURCES

The EA Risk of Flooding from Reservoirs map (**Figure 5**) indicates that the site is potentially at risk of flooding from reservoirs. However, as detailed on the EA website, reservoir flooding is extremely unlikely to happen as all large reservoirs are inspected and supervised by reservoir panel engineers. As the enforcement authority for the Reservoirs Act 1975 in England, the EA ensures that all reservoirs are inspected regularly and essential safety work is carried out. There are no canals located within the immediate vicinity of the site.

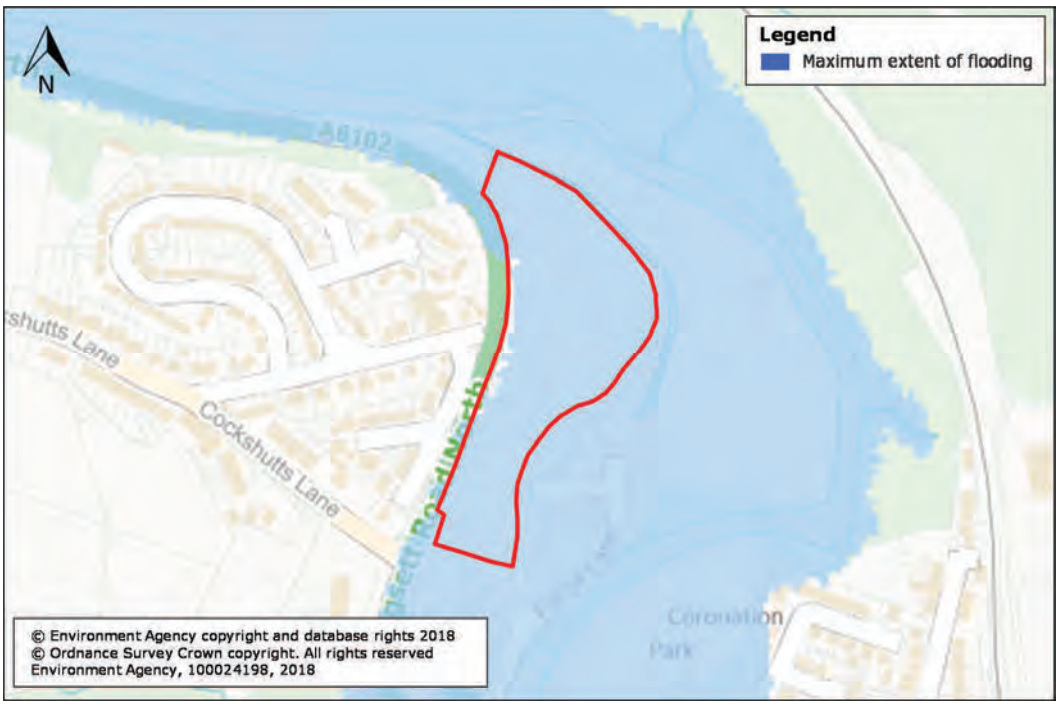

Figure 5: Risk of Flooding from Reservoirs Map
(Source: .GOV website)

4.6 FLOOD RISK FROM GROUNDWATER

According to the BGS Groundwater Flooding Hazard map (**Figure 6**) the susceptibility to groundwater flooding is primarily 'low' and 'low to moderate'. The southern portion of the site is negligible.

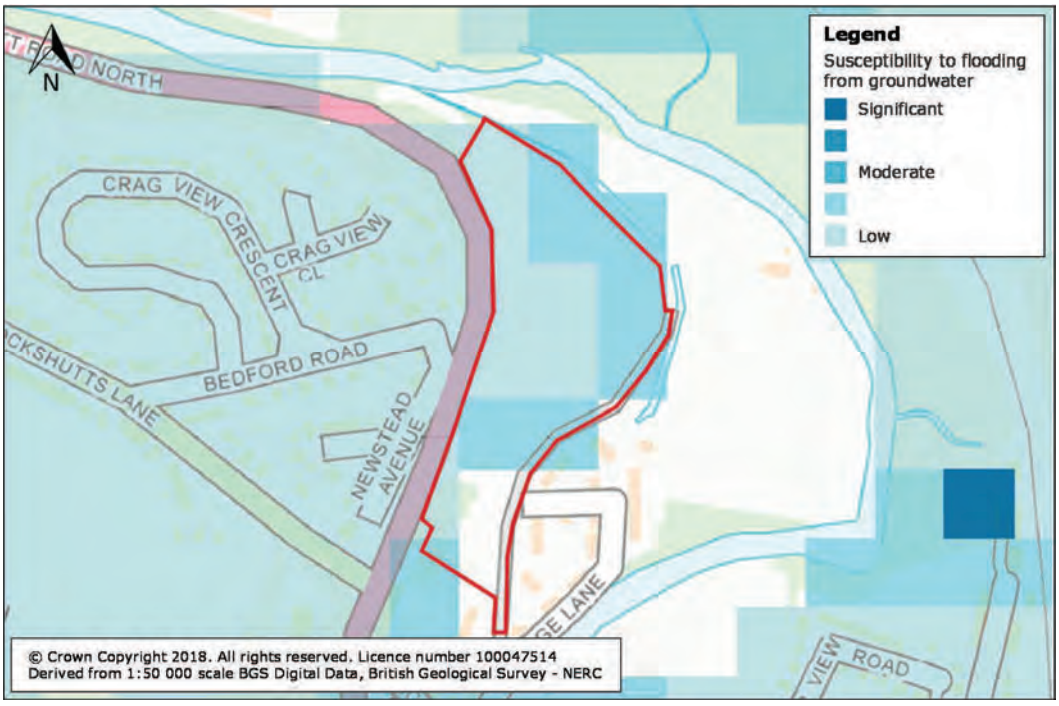

Figure 6: Groundwater Flooding Hazard Map
(Source: Findmaps)

4.7 FLOOD RISK FROM SURFACE WATER

The EA Risk of Flooding from Surface Water map (**Figure 7**) indicates that the majority of the site is at Very Low risk of flooding from surface water. An area in the southern part of the site indicated to be a High risk of surface water flooding coincides with a small pond. The EA Surface Water Depth Low, Medium and High Chance of Occurring maps (**Figure 8**) indicate surface water flooding at this location may occur to a depth of 900 mm during an extreme event.

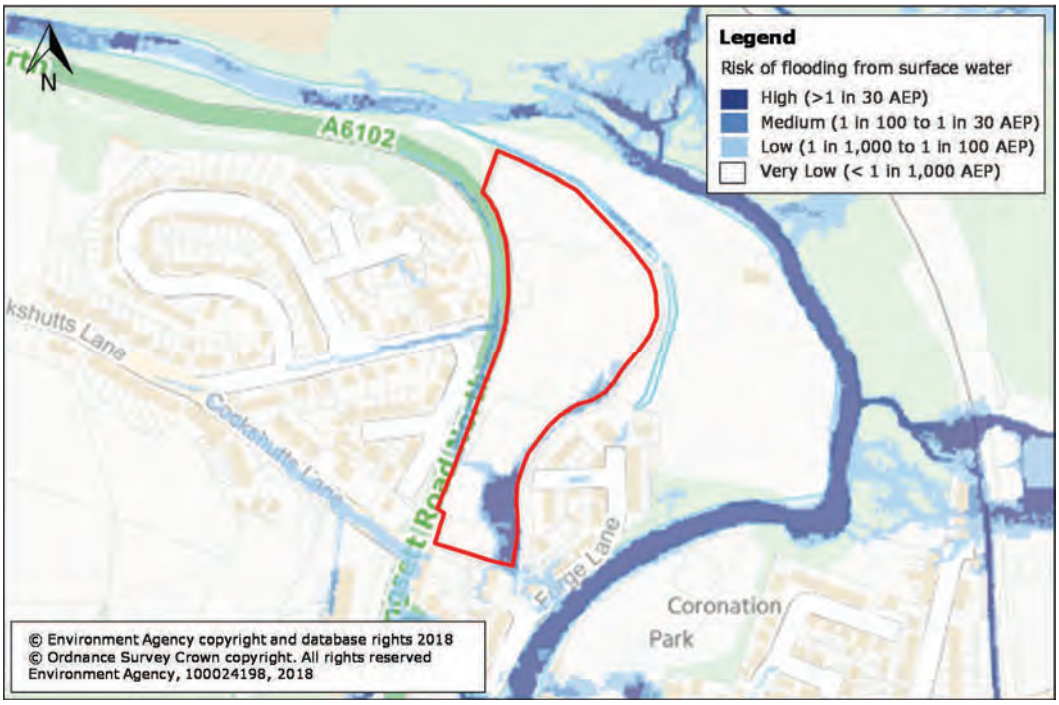

Figure 7: Risk of Flooding from Surface Water
(Source: .GOV website)

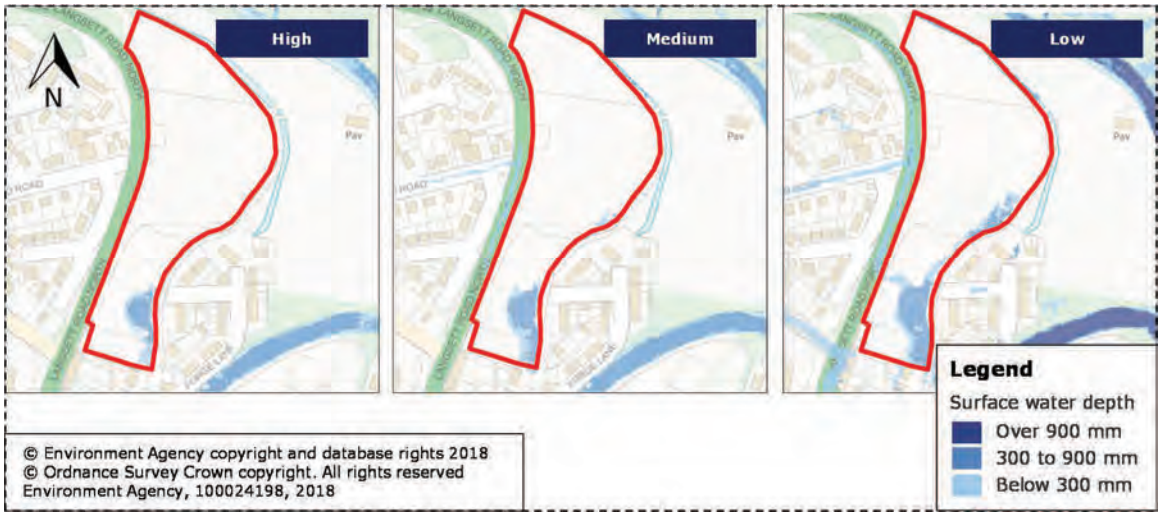

Figure 8: Surface Water Depth Maps
(Source: .GOV website)

5 FLOOD RISK MITIGATION MEASURES

The flood risk to the site from all identified sources could be mitigated by implementation of the following measures:

- The development platform to be located outside the 1 in 1000 annual probability event flood outline i.e. entirely within Flood Zone 1.
- Finished floor levels to be at a minimum of 0.15 m above adjacent ground levels following any reprofiling of the site.
- An 8m undeveloped buffer strip adjacent to the mill race should be provided for maintenance purposes.

6 SUMMARY AND RECOMMENDATIONS

This FRA report has been prepared on behalf of Commercial Estates Group and relates to the proposed development of Land East of Langsett Road North, Oughtibridge.

According to the EA Flood Map for Planning (Rivers and Sea) the proposed development is primarily located outside of the 1 in 1,000 annual probability flood outline and is therefore defined by the NPPF as being situated within Flood Zone 1.

As such, the flood risk Sequential Test is deemed to have been addressed.

Flood risk from the mill race will require further investigation.

The risk of flooding from all identified sources through the lifetime of the development could be mitigated by locating the development in Flood Zone 1, raising finished floor levels not less than 150 mm above adjacent ground levels and providing an 8 m easement adjacent to the mill race.

Access and egress to the site via Forge Lane is indicated to be located within Flood Zone 1. As such, access and egress to the site via this route, will remain safe and dry in times of flooding.

APPENDIX A:	Yorkshire Water Sewer Records

YORKSHIRE WATER
PROTECTION OF MAINS AND SERVICES

1. The position of Yorkshire Water Services Ltd (YWS) apparatus shown on the existing mains record drawing(s) indicates the ***general*** position and nature of our apparatus and the accuracy of this information cannot be guaranteed. Any damage to YWS apparatus as a result of your works may have serious consequences and you will be held responsible for all costs incurred. Prior to commencing major works, the exact location of apparatus must be determined on site, if necessary by excavating trial holes. The actual position of such apparatus and that of service pipes which have not been indicated must be established on site by contacting the Customer Helpline on 0845 124 24 24 for both water and sewerage.

2. The public sewer and water network is lawfully retained in its existing position and the sewerage and water undertaker is entitled to have it remain so without any disturbance. The provisions of section 159 of the Water Industry Act 1991 provides that the undertaker may "inspect, maintain, adjust, repair or alter" the network. Those rights are given to enable the undertaker to perform its statutory duties. Any development of the land or any other action that unacceptably hindered the exercise of those rights would be unlawful. The provisions contained in Section 185 of the Water Industry Act 1991 state that where it is reasonable to do so, a person may require the water supply undertaker to alter or remove a pipe where it is necessary to enable that person to carry out a proposed change of use of the land. The provisions contained in Section 185 also require the person making the request to pay the full cost of carrying out the necessary works.

3. Ground levels over existing YWS apparatus are to be maintained. Sewers in highways will ***generally*** be laid to give 1200mm of cover from finished ground level working to kerb races, other permanent identification of the limits of the road or to an agreed line and level. Substantial increases or decreases to this 1200mm depth of cover will result in the sewer being re-laid at your expense. Water mains and services will ***generally*** be laid with a minimum of 750mm depth of cover however some mains and services usually those installed over 50 years ago may have less ground cover.

4. If surface levels are to be decreased / increased significantly the effects on existing water supply apparatus will be carefully considered and if any alterations are necessary, the costs of the alterations will be recharged to you in full. Outlets on fire hydrants must be no more than 300mm below the new levels and all surface boxes must be adjusted as part of the scheme.

5. To enable future repair works to be carried out without hindrance; any pipe, cable, duct, etc. installed parallel to a water main or service pipe should not be installed directly over or within 300mm of a water main or service pipe or 1000mm of a waste water asset. Where a pipe, cable, duct, etc. crosses a main or service it should preferably cross perpendicular or at an angle of no less than 45° and with a minimum clearance of 150mm. These requirements apply to activities within an existing highway and are relevant to the installation of pipes, cables, ducts, etc. up to and including 250mm in diameter ***(see illustration below).*** Necessary protection measures for installations greater than 250mm in diameter and/or in private land will need to be agreed on an individual basis. Installations within a new development site must comply with the National Joint Utilities Group publication Volume 2: NJUG Guidelines On The Positioning Of Underground Utilities Apparatus For New Development Sites.

6. All excavation works near to YW apparatus should be by hand digging only.

7. Backfilling with a suitable material to a minimum 300mm above YW apparatus is required.

8. Adequate support must be provided where any works pass under YW apparatus.

9. Jointing chambers, lighting columns and other structures must be installed in such a way that future repair or maintenance works to YW apparatus will not be hindered.

10. Apparatus such as; railings, sign posts, etc. must not be placed in such a way that they prevent access to or full operation of controlling valves, hydrants or similar apparatus. YWS surface boxes must not be covered or buried. Any adjustment, alteration or replacement of manhole covers must be agreed on site prior to the commencement of the works with a YWS Inspector who may be contacted via our Call Centre on 0845 124 24 24.

11. Explosives shall not be used within 100 metres of any Yorkshire Water Services apparatus or installations.

12. Vibrating plant should not be used directly over any apparatus. Movement or operation by vehicles or heavy plant is not to be permitted in the immediate vicinity of YWS plant or apparatus unless there has been prior consultation and, if necessary, adequate protection provided without cost to YWS.

13. ***Under no circumstances*** should thrust boring or similar trenchless techniques commence until the actual position of the Company's mains/services along the proposed route have been confirmed by trial holes.

14. Any alterations to the highway should be notified following the procedures outlined in the New Road and Street Works Act 1991 Code of Practice; Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works).

15. You will be held responsible for any damage or loss to YWS apparatus during and after completion of work, caused by yourselves, your servant or agent. Any damage caused or observed to YWS plant or apparatus should be immediately reported to YWS. Should YW incur any costs as a result of non-compliance with the above, all costs will be rechargeable in full.

16. You should ensure that nothing is done on the site to prejudice the safety or operation of YWS employees, plant or apparatus.

17. In accordance with the New Roads and Street Works Act 1991, Chapter 22, Part 3, Section 80. The location of any identified YW asset "***which is not marked, or is wrongly marked, on the records made available*** " should be communicated back to Yorkshire Water. The location of the apparatus should be identified on copies of the supplied plans which should be returned to Yorkshire Water (Asset Records Team) with photographic supporting evidence where possible.

18. The Government has decided that responsibility for private sewers serving two or more properties and lateral drains (the section of pipe beyond the boundary of a single property, connecting it to the public sewer) will be transferred to the water companies on Oct 1 2011. Private pumping stations will also transfer during the period 1 October 2011 – 1 Oct 2016. Records of these assets may not yet be shown on the existing mains record drawing(s). If you encounter any of these assets you must inform Yorkshire Water Services Ltd (YWS).

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20. This information is for guidance only and the position and depth of any YW apparatus is approximate only. Likewise, the nature and condition of any YW apparatus cannot be guaranteed. YW has no responsibility for recording the locations of privately owned apparatus. As of 1 October 2011, there may be some lateral drains and/or public sewers which are not documented on YW records but may still be present. For the avoidance of doubt, this information is not a substitute for appropriate professional and/or legal advice. YW accepts no responsibility for any inaccuracy or omissions in this information. The actual position of YW apparatus must be determined on site by excavating trail holes by hand. YW requires a minimum of two working days' written notice of the intention to excavate any trial holes before any excavation can be undertaken. If there are any queries in this respect please contact Yorkshire Water on 0845 124 24 24.

Sewer Legend


Combined Sewer


S24 Combined Sewer


Surface Water Sewer


S24 Surface Water Sewer


Foul Sewer


S24 Foul Sewer


Section 104 Sewer

Public Rising Main


Pumping Station


Abandoned Sewer

Public Sewage
Treatment Works


Syphon Sewer &
Vacuum Sewer

\+ Property Identifier

Water Legend

Water Main 4" and below

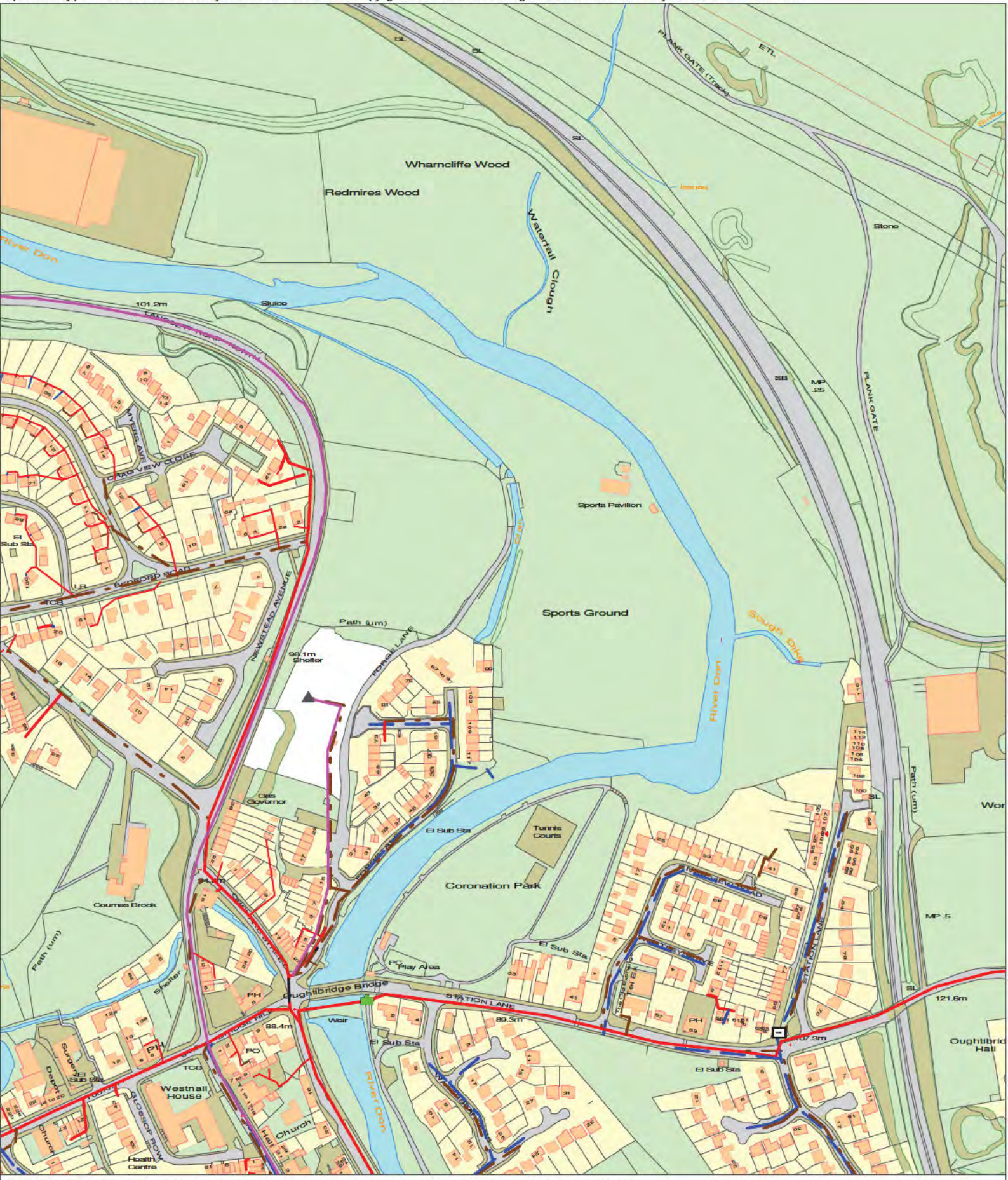
Water Main 4" and above

Raw Water Main

Private Water Main


Fire Hydrant


Pumping Station



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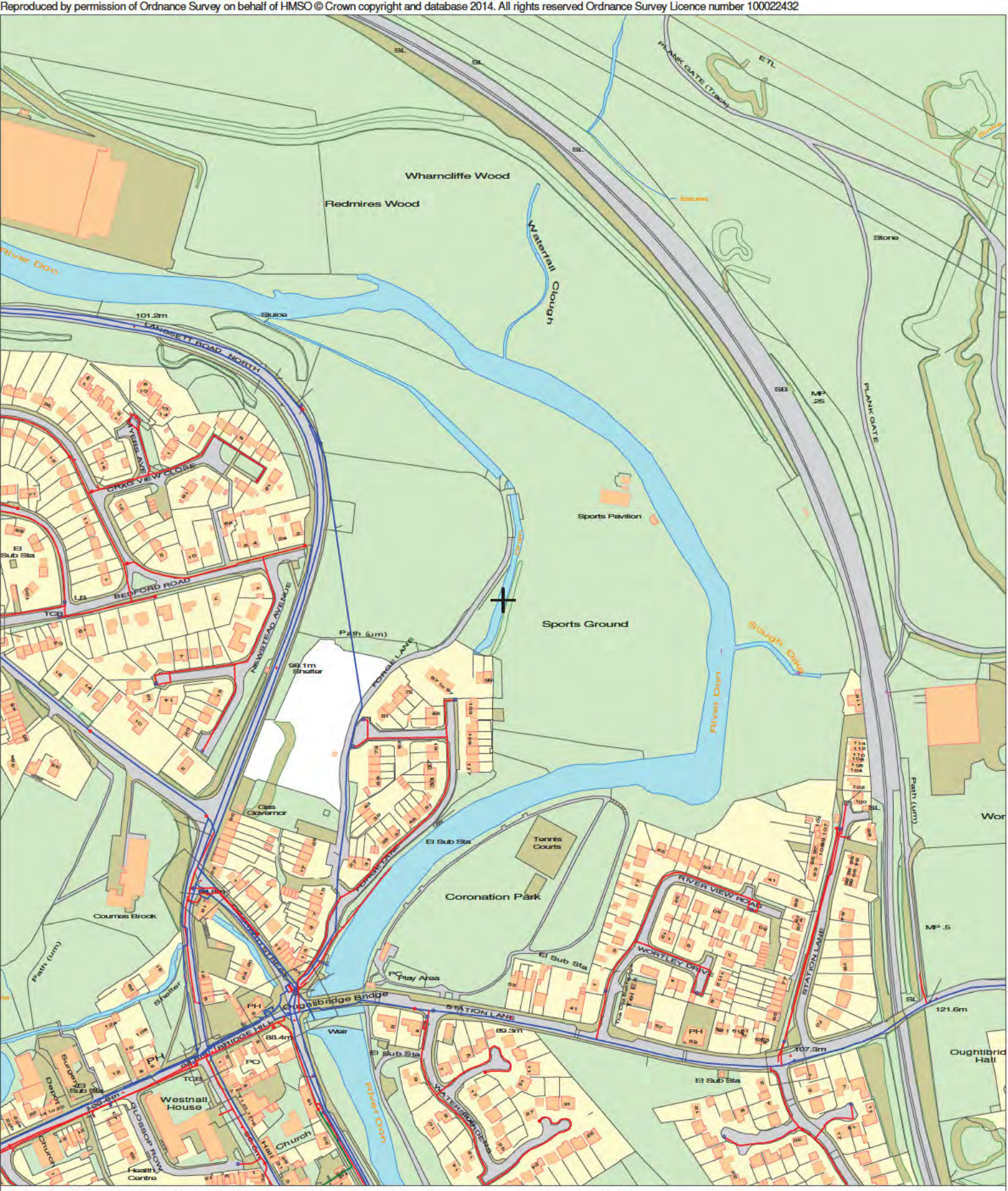
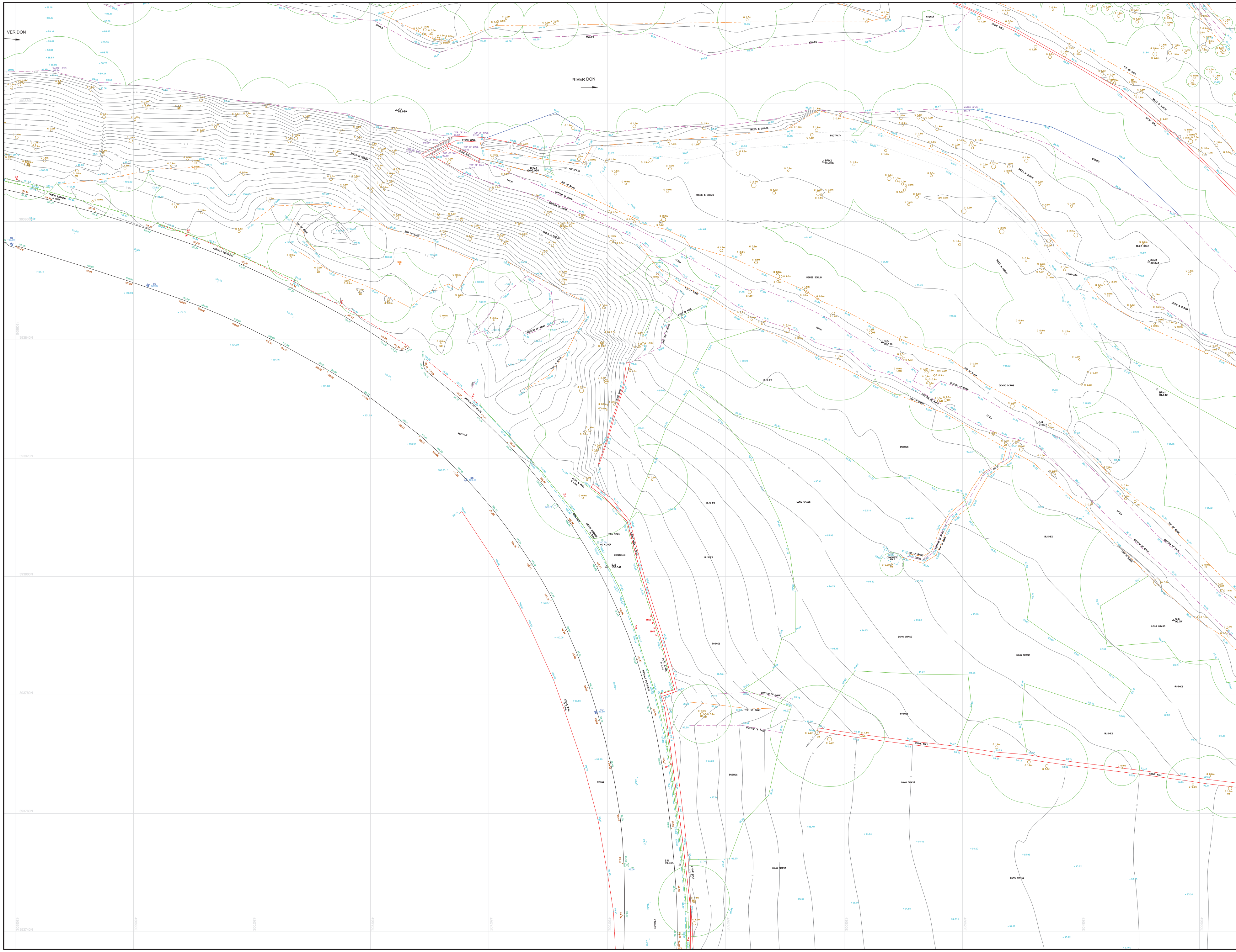


Public Clean Water Network 20/11/2015 12:05:26 OS Grid Coordinates: 430538 : 393251 Map Name : SK3093SE garsidet

APPENDIX B:	Topographic Survey



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B7	430897 880	393807 52	9 347
B9	430226 79	394 26 945	00 32

Layout Key

(9) (12) (10) 11 13)

KEY

AIR VALVE		KERB OUTLET	
BENCH MARK		LAMP POST	
BIN		MANHOLE (CIRCULAR)	
BOLLARD		MANHOLE (RECTANGULAR)	
BORE HOLE		MANHOLE (TRIANGULAR)	
BRITISH TELECOM COVER		MARKER POST	
BUS STOP		GULLY	
CABLE TV COVER		RODDING EYE	
CABLE TV SUPPLY		SIGN POST	
COLUMN		TELECOM COVER	
DROPPED KERB		TELEGRAPH POLE	
EARTHING POINT		THRESHOLD LEVEL	
ELECTRICITY COVER		TRAFFIC LIGHT	
ELECTRICITY POLE		TRIAL PIT	
FIRE HYDRANT		WASH OUT	
GAS VALVE		WATER METER	
GATE		WATER STOP COCK	
INSPECTION COVER (CIRCULAR)		WATER STOP VALVE	
INSPECTION COVER (RECTANGULAR)			
COVER LEVEL	CL	CHAMBER BASE LEVEL	CH.L
INVERT LEVEL	IL	WATER SURFACE LEVEL	WL
UNABLE TO RAISE	UTR	UNABLE TO MEASURE	UTM
GIRTH OF TREE TRUNK	G	DIAMETER OF TREE TRUNK	D
HEIGHT TO TOP OF TREE CANOPY	H	MULTI BOLE TREE	MB

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Southgate House
Pontefract Road T: [0] 1132 008 900
Stourton F: [0] 1132 008 901
Leeds E: admin@me geoenvironmen al.com
West Yorkshire W: www metgeoenvironmental.com
LS10 1SW

Cl ent: P ERRE ANGULAIRE LTD

Si e: CEG OUGHTIBRIDGE MAIN ROAD, S35 0DN

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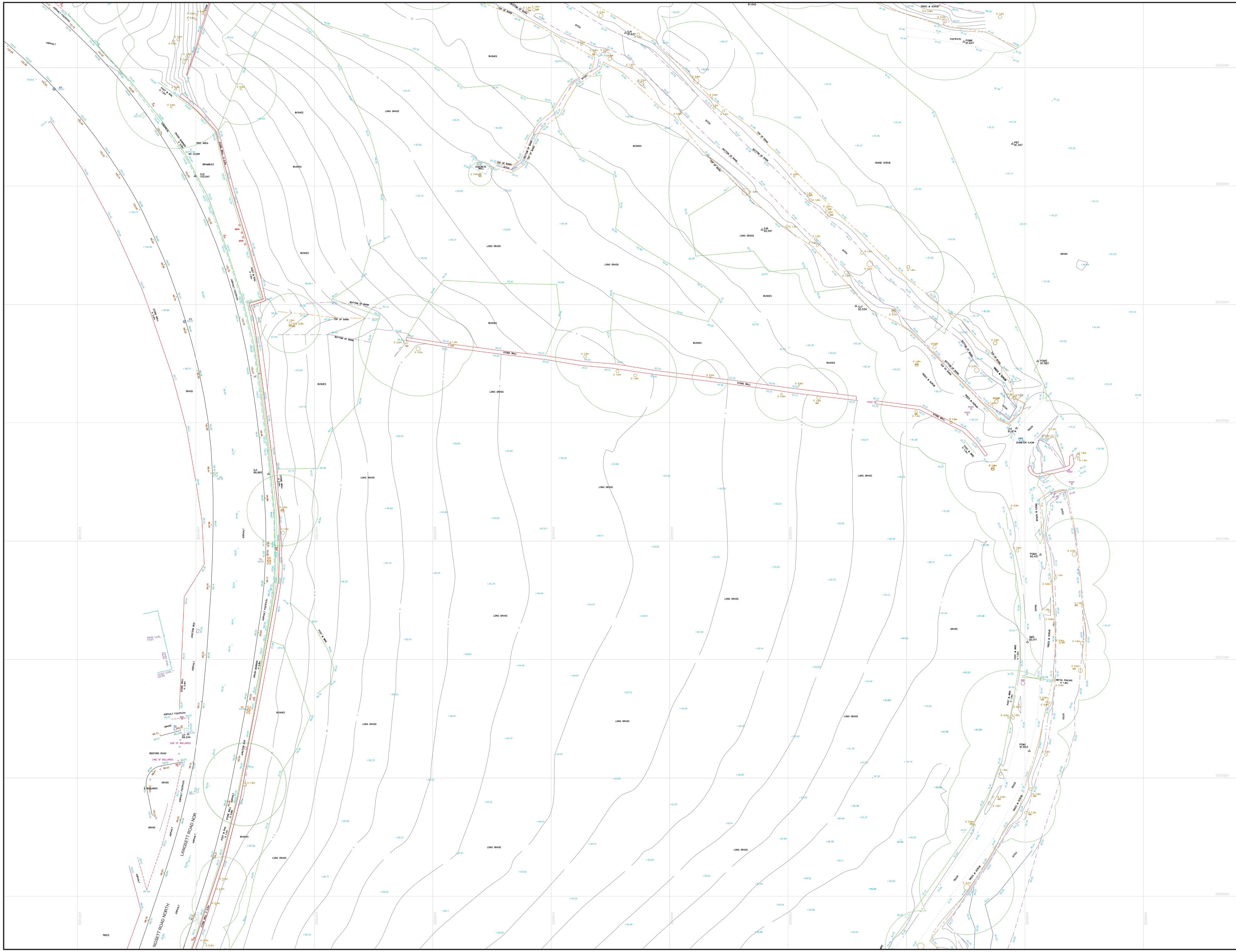

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S 3	430655 905	393866 8	0 435
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GM6	430899 766	393760 37	9 952
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BOLLARD		MANHOLE (RECTANGULAR)	
BORE HOLE		MANHOLE (TRIANGULAR)	
BRITISH TELECOM COVER		MARKER POST	
BUS STOP		GULLY	
CABLE TV COVER		RODDING EYE	
CABLE TV SUPPLY		SIGN POST	
COLUMN		TELECOM COVER	
DROPPED KERB		TELEGRAPH POLE	
EARTHING POINT		THRESHOLD LEVEL	
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ELECTRICITY POLE		TRIAL PIT	
FIRE HYDRANT		WASH OUT	
GAS VALVE		WATER METER	
GATE		WATER STOP COCK	
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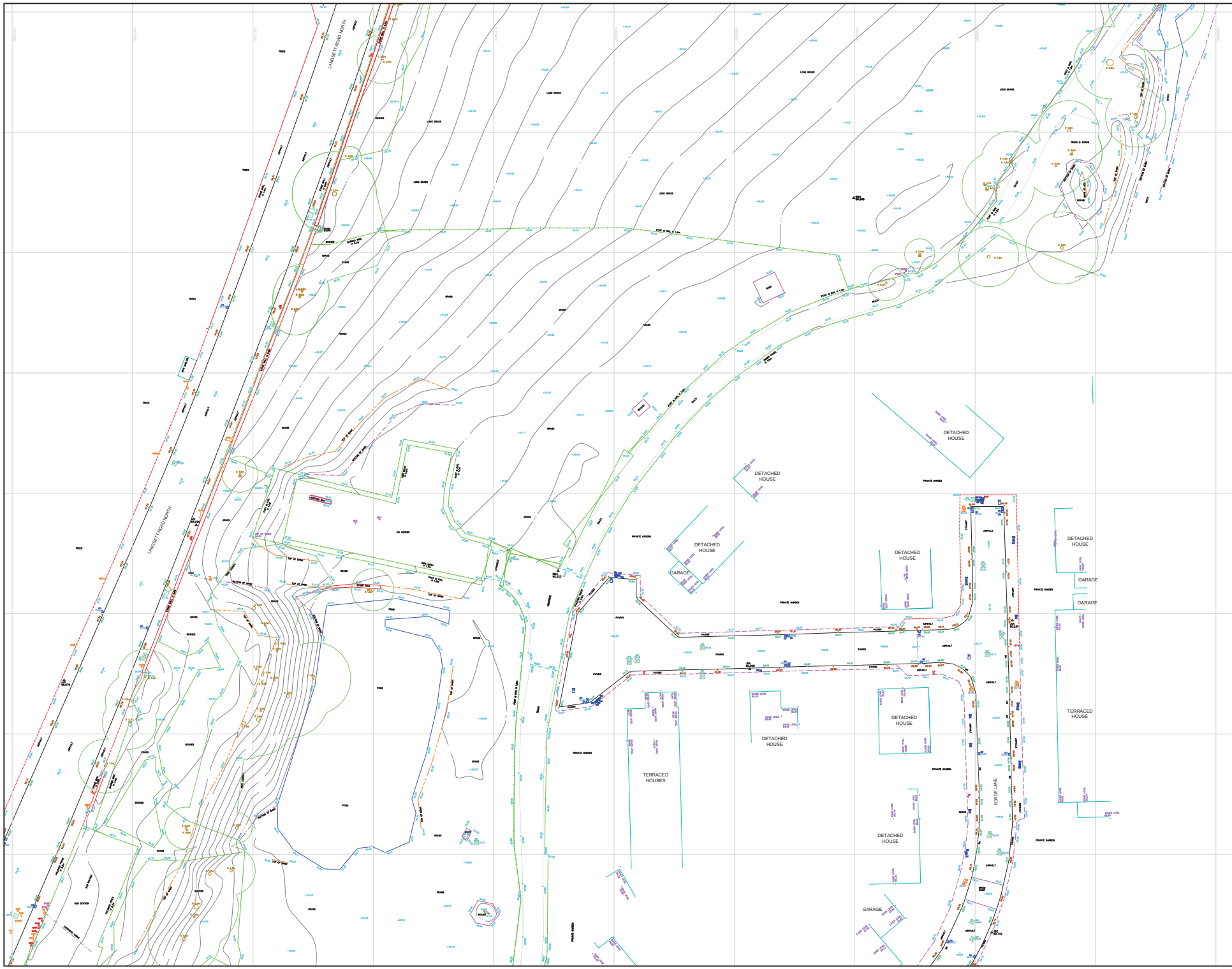

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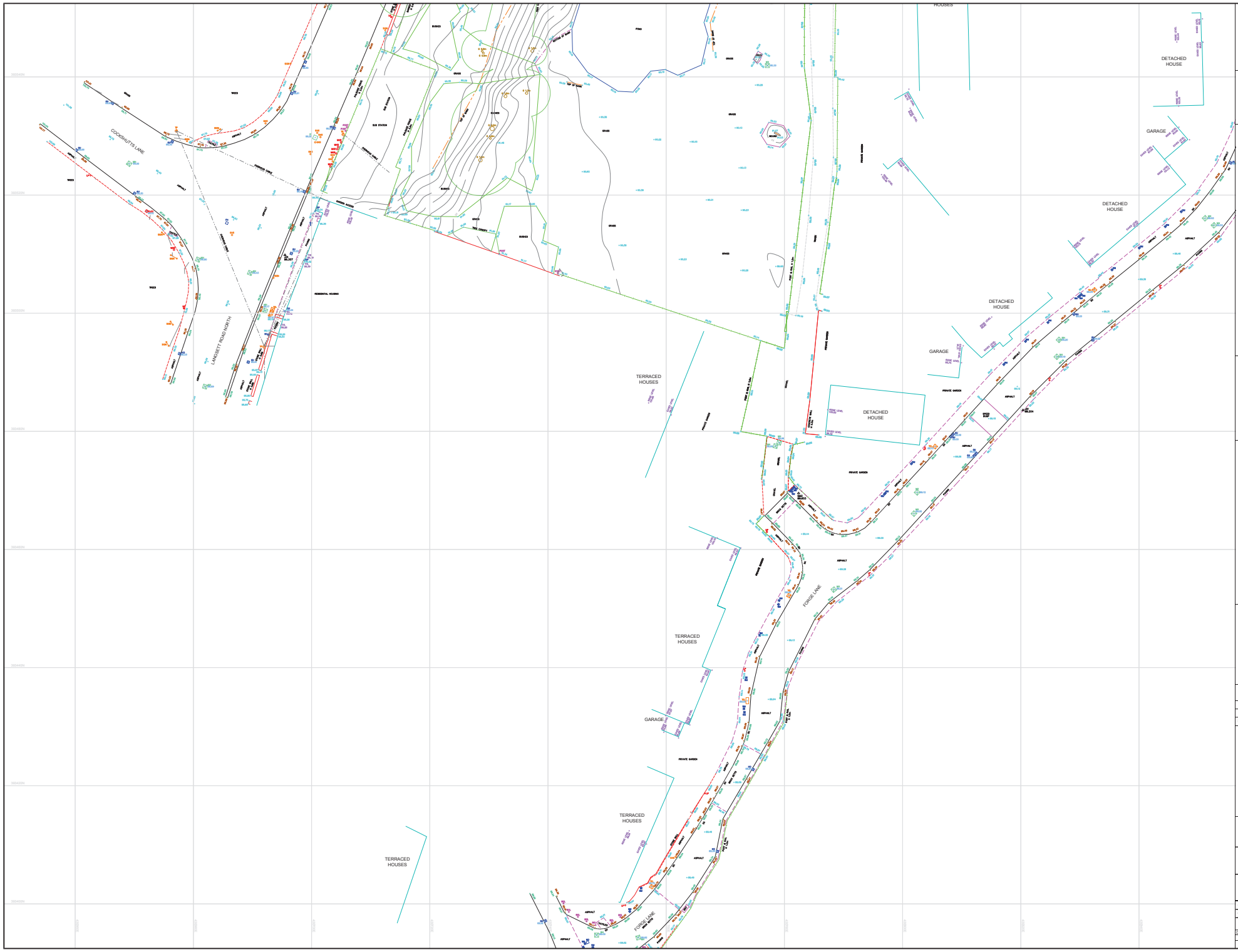

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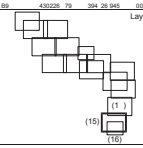

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LICHFIELDS

Appendix 2 Preliminary Drainage Appraisal (March 2018)

LAND EAST OF LANGSETT ROAD NORTH, OUGHTIBRIDGE

PRELIMINARY DRAINAGE APPRAISAL

Final Report v1.0

March 2018

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Report Title:	**Land East of Langsett Road North, Oughtibridge** Preliminary Drainage Appraisal Final Report v1.0
Client:	Commercial Estates Group (CEG)
Date of Issue:	19 March 2018

Prepared by:	Keely Bonser BSc MSc PhD *Principal Project Manager*
Checked and Approved by:	Kevin Tilford BSc MSc (Eng) PhD MBA C.WEM MCIWEM *Managing Director*

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1 INTRODUCTION

1.1 PURPOSE OF REPORT

Weetwood Services Ltd ('Weetwood') has been instructed by Commercial Estates Group (CEG) to undertake a Preliminary Drainage Appraisal for the proposed development of Land East of Langsett Road North, Oughtibridge.

The assessment has been undertaken in accordance with the requirements of the National Planning Policy Framework (NPPF) and accompanying Planning Practice Guidance (PPG).

The report should be read in conjunction with the Preliminary Appraisal of Flood Risk report prepared by Weetwood which addresses flood risk for the proposed development (ref: *'Preliminary Appraisal of Flood Risk – Land East of Langsett Road North, Oughtibridge; Final Report v1.0, March 2018'*).

1.2 STRUCTURE OF THE REPORT

The report is structured as follows:

Section 1 Introduction and report structure

Section 2 Presents national and local flood risk and drainage planning policy

Section 3 Provides background information relating to the development site, the development proposals, ground conditions and existing site access arrangements

Section 4 Assesses the effect of the proposed development on foul water infrastructure and determines a suitable point of connection for foul water from the proposed development

Section 5 Addresses the effect of the proposed development on surface water runoff to ensure that surface water runoff is sustainably managed and flood risk is not increased elsewhere

Section 6 Presents a summary of key findings and recommendations

2 PLANNING POLICY AND GUIDANCE

2.1 NATIONAL PLANNING POLICY

The aim of the NPPF is to ensure that flood risk is taken into account at all stages in the planning process and is appropriately addressed.

2.2 LOCAL PLANNING POLICY AND GUIDANCE

The preliminary drainage appraisal has been informed by the following policy:

Sheffield City Council's (SCC) Core Strategy was adopted on 4 March 2009. Policy CS 67 'Flood Risk Management' states, in part, that the extent and impact of flooding will be reduced by:

a. Requiring that all developments significantly limit surface water runoff;
b. Requiring the use of SuDS or sustainable drainage techniques on all sites where feasible and practicable; and
c. Promoting sustainable drainage management;

Paragraph 11.21 of the Core Strategy states that surface water must be reduced to 5.0 l/s/ha on all sites over 1 hectare (ha), except on brownfield sites where the developer can prove that there is existing surface water runoff. On such sites, runoff must be reduced by 30%. On sites that are less than 1 hectare or 10 dwellings, surface water runoff must be reduced as far as is feasible by design measures such as permeable paving.

2.3 REQUIREMENTS FOR SUSTAINABLE DRAINAGE SYSTEMS

Planning applications for major developments[1] are required[2] to provide Sustainable Drainage Systems (SuDS) for the management of surface water runoff, unless demonstrated to be inappropriate[3] or disproportionately expensive.

SuDS aim to mimic natural drainage and can achieve multiple objectives such as removing pollutants from urban runoff at source, controlling surface water runoff from developments, and ensuring that flood risk is not increased downstream. Combining water management with green space can provide amenity and biodiversity enhancement.

In considering a development that includes a sustainable drainage system, the local planning authority will want to be satisfied that the proposed minimum standards of operation are appropriate and that there are clear arrangements in place for ongoing maintenance.

According to Technical Standards[4] published by DEFRA surface water drainage systems must be designed so that:

[1] Developments of 10 dwellings or more; or equivalent non-residential or mixed development (as set out in Article 2(1) of the Town and Country Planning (Development Management Procedure) (England) Order 2010)
[2] Written Statement (HCWS161) made by the Secretary of State for Communities and Local Government (Mr Eric Pickles) on 18 December 2014
[3] Paragraph 082 (Reference ID: 7-082-20150323) of the Planning Practice Guidance outlines how a sustainable drainage system might be judged to be inappropriate
[4] Non-Statutory Technical Standards for Sustainable Drainage Systems, Defra, March 2015

- *Flooding does not occur on any part of the site for a 1 in 30 annual probability rainfall event, unless an area is designed to hold and/or convey water as part of the design;*
- *Flooding does not occur in any part of a building during a 1 in 100 annual probability event; and*
- *Flows resulting from rainfall in excess of a 1 in 100 annual probability rainfall event are managed in exceedance routes that minimise the risks to people and property, so far as is reasonably practicable.*
- *For developments which were previously developed, the peak runoff rate from the development to any drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100 year rainfall event must be as close as reasonably practicable to the greenfield runoff rate from the development for the same rainfall event, but should never exceed the rate of discharge from the development prior to redevelopment for that event.*
- *Where reasonably practicable, for developments which have been previously developed, the runoff volume from the development to any highway drain, sewer or surface water body in the 1 in 100 year, 6 hour rainfall event must be constrained to a value as close as is reasonably practicable to the greenfield runoff volume for the same event, but should never exceed the runoff volume from the development site prior to redevelopment for that event*
- *Where it is not reasonably practicable to constrain the volume of runoff to any drain, sewer or surface water body, the runoff volume must be discharged at a rate that does not adversely affect flood risk.*
- *The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site for a 1 in 30 year rainfall event.*
- *The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur during a 1 in 100 year rainfall event in any part of: a building (including a basement); or in any utility plant susceptible to water (e.g. pumping station or electricity substation) within the development.*
- *The design of the site must ensure that, so far as is reasonably practicable, flows resulting from rainfall in excess of a 1 in 100 year rainfall event are managed in exceedance routes that minimise the risks to people and property*.

2.4 CONSENTS

An Environmental Permit for Flood Risk Activities may be required from the Environment Agency (EA) for work:

- in, under, over or near a main river (including where the river is in a culvert)
- on or near a flood defence on a main river
- in the flood plain of a main river
- on or near a sea defence

Further information can be found at the .GOV website[5].

Land drainage consent may be required from the Lead Local Flood Authority or Internal Drainage Board for work to an Ordinary Watercourse. Undertaking activities controlled by local Byelaws (made under the Water Resources Act 1991) also requires the relevant consent.

[5] https://www.gov.uk/guidance/flood-risk-activities-environmental-permits

2.5 RELEVANT DOCUMENTS

The preliminary drainage appraisal has also been informed by the following documents:

- Strategic Flood Risk Assessment (SFRA) Level 1, SCC, July 2008
- South Yorkshire Interim Local Guidance for SuDS, June 2015
- DEFRA's Non-Statutory Technical Standards for Sustainable Drainage Systems, March 2015

3 SITE DETAILS AND PROPOSED DEVELOPMENT

3.1 SITE LOCATION

The approximately 3.19 hectare (ha) greenfield site is located to the east of Langsett Road North, Oughtibridge, Sheffield at Ordnance Survey National Grid Reference SK 308 936, as shown in **Figure 1**.

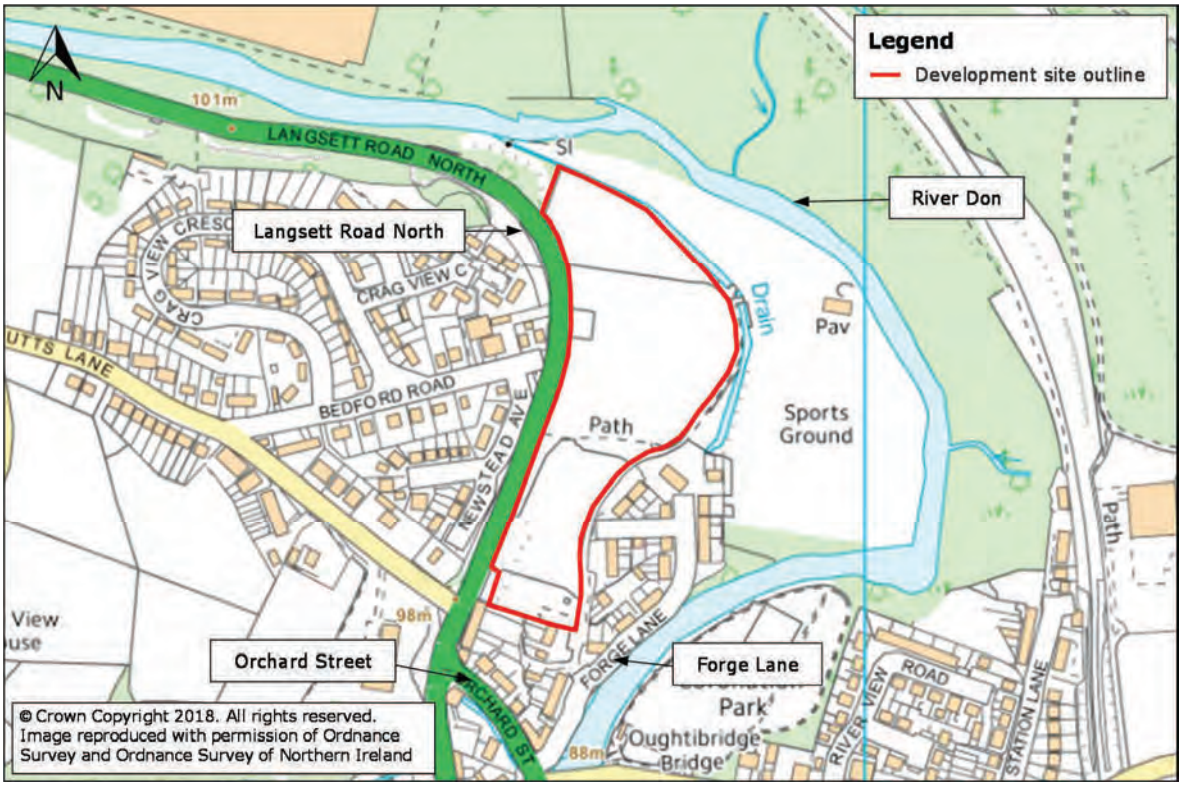


Figure 1: Site Location

3.2 PROPOSED DEVELOPMENT

The development proposals are for the construction of circa 80 residential dwellings. The PPG classifies residential development as 'more vulnerable' land use.

3.3 WATERBODIES IN THE VICINITY OF THE SITE

The River Don, a designated main river, flows predominantly in a south-easterly direction through Oughtibridge. Within the vicinity of the site, the river meanders around the northern, eastern and southern boundaries of the site and is located approximately 25 m to the north of the site, 180 m to the east of the site and 50 m to the south of the site.

A former mill race is located adjacent to the northern/eastern boundary of the site. The mill race spurs off the River Don approximately 50 m to the north-west of the site. Based on OS mapping, Yorkshire Water (YW) utility records and a site visit, it is assumed that the mill race flows through a culvert within the Forge Lane residential estate and flows into YW's surface water sewer network (see **Section 5.1** and **Fig 2**).

A pond is located within the southern portion of the site. The pond is not identified on OS mapping; however, the EA Risk of Flooding from Surface Water map (see **Figure 7** of the Preliminary Appraisal of Flood Risk report (ref: *'Preliminary Appraisal of Flood Risk – Land East of Langsett Road North, Oughtibridge; Final Report v1.0, March 2018'*)) indicates that this area is at risk of flooding from surface water, and is thus thought to be the ponding of surface water due to ground conditions (see **Section 3.4**).

3.4 GROUND CONDITIONS

According to the Soilscapes maps produced by the National Soils Research Institute[6], soil conditions at the site are described as `freely draining slightly acid loamy soils'.

According to British Geological Survey (BGS) mapping, ground conditions within the eastern portion of the site comprise of river terrace deposits (sand and gravel). The south-eastern portion of the site comprises alluvium (gravel, sand, silt and clay). No superficial deposits have been recorded within the western/southern portion of the site. The bedrock geology at the site comprises sandstone (Rough Rock Formation).

BGS borehole records[7] approximately 100 m to the west of the site indicate ground conditions to comprise of sandy stony clay up to approximately 3.0 metres below ground level (m bgl) underlain by sandstone up to 3.9 m bgl.

3.5 SITE LEVELS

A topographic survey of the site was undertaken by Met GeoEnvironmental in January 2018 and is provided in **Appendix A**.

The topographic survey indicates that the site generally slopes down in an easterly direction, with levels ranging between approximately 97.4 to 89.9 m Above Ordnance Datum (AOD).

3.6 ACCESS AND EGRESS

The site is accessed via Forge Lane adjacent to the south-eastern boundary. Levels range from approximately 90.4 to 89.9 m AOD within the vicinity of the site, with levels generally sloping down in a southerly direction.

[6] Soilscapes www.landis.org.uk/soilscapes/
[7] BGS borehole record ref: SK39SW189, SK39SW190 and SK39SW131

4 FOUL WATER ASSESSMENT

4.1 APPROACH

A strategy for the management of foul water from the developed site has been informed by an assessment of existing sewerage infrastructure provision in the vicinity of the site and the projected service demand of the proposed development.

4.2 EXISTING WASTEWATER INFRASTRUCTURE

YW records (see **Appendix B** and extract in **Figure 2**) indicate that the following services are present within/adjacent to the site boundary:

On-Site

- A foul water pumping station is located in the southern portion of the site
- A foul water sewer (unknown size at present) located to the west of Forge Lane flowing into the aforementioned pumping station
- A rising main (unknown size at present) runs from the pumping station, adjacent to the aforementioned foul water sewer towards a combined sewer in Orchard Street

Off-Site

- A combined sewer (unknown size at present) located along Langsett Road North
- A rising main (unknown size at present) runs parallel to the aforementioned combined sewer along Langsett Road North
- A foul sewer (unknown size at present) located within Forge Lane residential estate

4.3 FOUL LOADING ESTIMATE

The projected foul flow from the proposed development has been calculated to be 2.1 l/s, in accordance with Urban Drainage 3rd Edition.

4.4 POINT OF CONNECTION

It is proposed to discharge foul water to the public sewerage network via a new connection to the existing on-site foul water pumping station. A gravity connection to this point is expected to be feasible although this will be subject to confirmation following further investigation.

4.5 OFF-SITE INFRASTRUCTURE REINFORCEMENT

YW should be consulted before any development takes place to confirm that a connection to the existing foul pumping station is feasible and that there is sufficient capacity in the public sewer system to receive and treat foul water from the development.

4.6 DIVERSONS, EASEMENTS & RIGHTS OF WAY

YW should be consulted to determine the easement required either side of the public foul sewer and rising main leading to and from the existing foul pumping station to the south of the site. It is anticipated that a minimum of at least 3.0 m either side of these sewers will be required.

If required, it may be possible to divert the aforementioned sewers to Forge Lane along the south-eastern boundary of the site; however, consultation with YW would be required to see if this is feasible.

Due care and appropriate work methods should be exercised during construction of any site access routes, due to the presence of wastewater mains in Langsett Road North and Forge Lane.

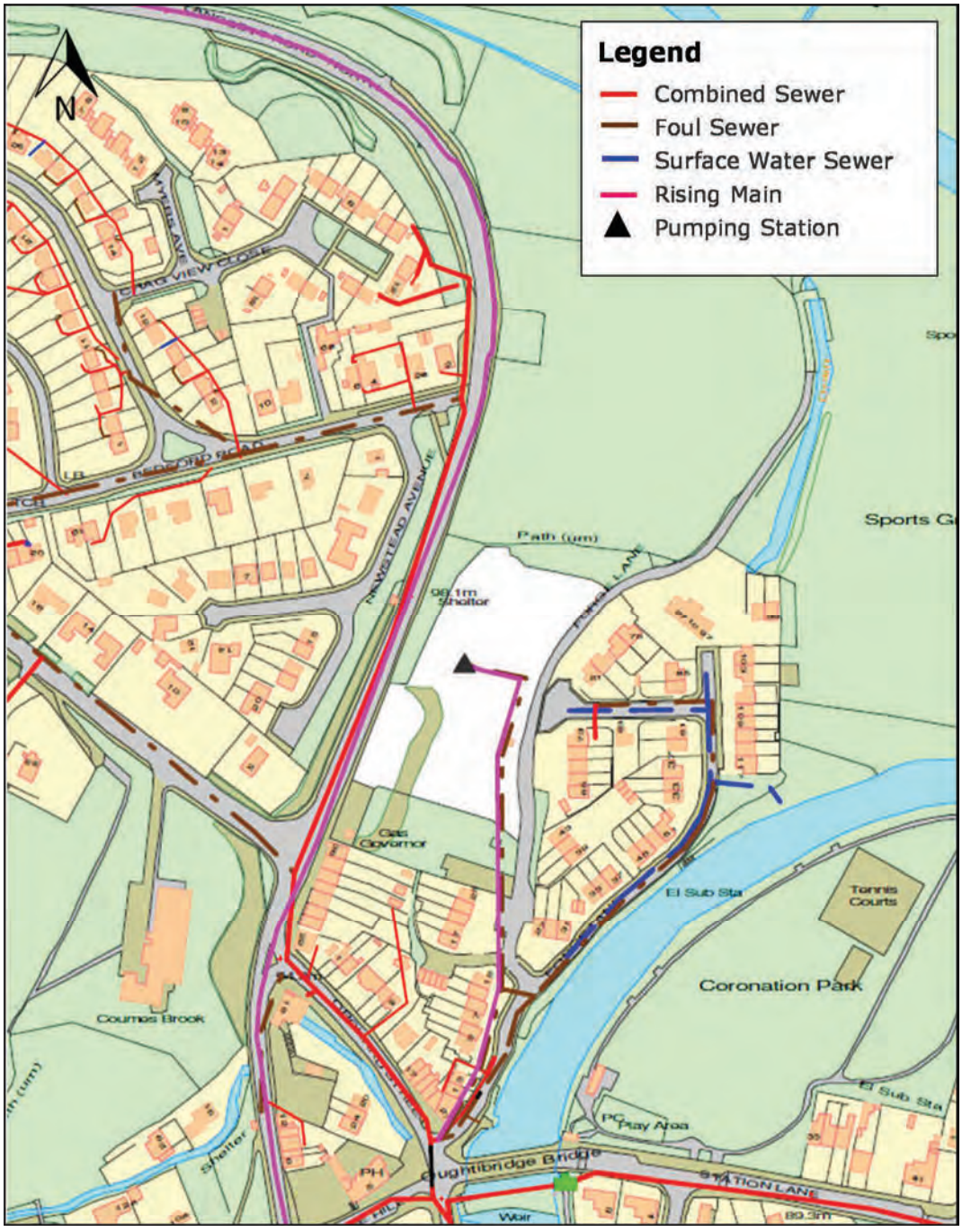


Figure 2: Existing Yorkshire Water Infrastructure

5 SURFACE WATER MANAGEMENT

5.1 EXISTING SEWERAGE INFRASTRUCTURE

YW utility records (see extract in **Figure 2** and **Appendix B**) indicate that a surface water sewer (size unknown at present) is located within Forge Lane. The sewer is shown to outfall into the River Don adjacent to Forge Lane. It is assumed that the mill race adjacent to the eastern boundary of the site flows into the surface water sewer (to be confirmed).

5.2 SURFACE WATER DRAINAGE AT THE EXISTING SITE

The site comprises of approximately 3.07 ha of undeveloped greenfield land. No formal drainage system is therefore expected to be present.

Based on site topography, ground conditions and a site visit (see **Section 3.3**, **3.4** and **3.5**), surface water runoff from permeable surfaces would be expected to flow overland towards the mill race and Forge Lane and slowly infiltrate where conditions allow.

The greenfield runoff rate for the site has been calculated using the ICP SUDS method within MicroDrainage (**Table 1**). Details of the input parameters and the output results are provided in **Appendix C**.

Table 1: Greenfield Runoff Rate

Annual probability of rainfall event	Greenfield Runoff Rate (l/s/ha)
1 in 1	2.4
Q_{bar}	2.8
1 in 30	4.9
1 in 100	5.8

5.3 SURFACE WATER DRAINAGE AT THE DEVELOPED SITE

5.3.1 Post Development Impermeable Area

The post development percentage of impermeable surfaces at the site has been estimated to be 60% (1.84 ha). This assumption is considered to be conservative.

5.3.2 Disposal of Surface Water

In accordance with the PPG[8], surface water runoff should be disposed of according to the following hierarchy: Into the ground (infiltration); To a surface water body; To a surface water sewer, highway drain, or another drainage system; To a combined sewer.

[8] Paragraph 080, Reference ID: 7-080-20150323

Based on ground conditions (see **Section 3.4**) and the presence of surface water ponding in the southern portion of the site (see **Section 3.3**), the disposal of surface water runoff by way of infiltration is considered unlikely to be feasible, although this will require further investigation and possibly site percolation testing[9].

It is therefore proposed to direct all runoff from impermeable surfaces of the developed site to the River Don. It is understood that land between the site and the River Don is also owned by CEG. As such surface runoff could discharge to the River Don via the adjacent sports fields. An alternative route may be via Forge Lane adjacent to the south-eastern boundary.

If a connection to the River Don is not reasonably practicable, a connection into the public surface water sewer within Forge Lane may be feasible. However, it should be noted that YW will request evidence demonstrating that the disposal of surface water by infiltration is not feasible (i.e. infiltration tests will be required – see above). YW is unlikely to discuss a connection to the public sewer network or whether there is capacity without receiving this information in the first instance.

5.3.3 Peak Flow Control

Surface water runoff from the developed site to the River Don would need to be restricted to approximately 8.6 l/s (Q_{bar}). This will demonstrate that off-site flood risk does not increase following development and that betterment (via a reduction in runoff) is provided during larger storm events.

If a connection to the River Don is not practicable, and YW confirm that surface water runoff may discharge into the public surface water sewer network, it is likely that YW will restrict surface water runoff rates further.

5.3.4 Managing Surface Water within the Development

For the purposes of this assessment it is presumed that surface water runoff generated from impermeable surfaces within the development would be stored/attenuated within a surface based storage facility such as a detention basin.

The proposed attenuation storage structure has been modelled using the Detailed Design module of MicroDrainage Source Control (**Appendix D**) and has been sized to store the 1 in 100 annual probability rainfall event including a 20% increase in rainfall intensity in order to allow for climate change. A sensitivity analysis has been carried out using a 40% increase in climate change.

Assuming a peak discharge rate of 8.6 l/s, a total storage volume of approximately 1,140 m^3 would be required. The storage volume could be accommodated within a 1.3 m depth detention basin (including a 0.3 m freeboard and a side slope of 1 in 3) over an area of approximately 1,440 m^2.

Runoff generated from a 1 in 100 annual probability rainfall event including a 40% increase in rainfall intensity would be contained within the freeboard of the detention basin with no surface flooding. The discharge rate from the proposed development would, however, increase to 9.2 l/s.

[9] It is recommended that percolation tests are undertaken on-site to confirm whether infiltration is appropriate, should the site progress to the planning application stage

The above volumes do not take into account storage provided within the on-site surface water conveyance system and are therefore conservative.

Alternative storage options include cellular storage, permeable paving/tarmac, filter strips, swales, filter drains, detention basins or retention ponds. The potential for alternative and/or additional storage facilities and the sizing and location of the storage facilities will be investigated further as the development proposals are refined.

Storage structures for residential development will need to be designed to accommodate the additional runoff generated as a result of an increase of up to 10% in impermeable area due to urban creep. However, at this stage of the design process, urban creep has been considered through the conservative estimate of impermeable areas.

5.3.5 Pollution Control

Detention basins can provide water quality benefits via the settlement of pollutants in still or slow moving water, adsorption by the soil, and biological activity. The potential for additional SuDS features to be utilised at the site, for example permeable surfaces, swales, filter strips and filter drains, would be investigated further at the detailed design stage. These would also offer further water quality benefits.

5.3.6 Exceedence Routes

Flows resulting from rainfall in excess of the 1 in 100 annual probability rainfall event including a 20% (or 40%) increase in rainfall intensity in order to allow for climate change will be managed in exceedence routes.

It is assumed that as the development proposals progress, the design of the site would ensure flood flows are directed towards carriageways, with the site being profiled to ensure that flood flows avoid built development at the site.

5.3.7 Volume Control

The SuDS Manual (Section 24.10.1 pg 533/534) states that where infiltration is not suitable/feasible, any extra volume generated by the development should be released at a very low rate e.g. 2 l/s/ha and the 1 in 100 annual probability greenfield allowable runoff rate reduced to take account of this extra discharge.

An alternative approach to managing the extra runoff volumes from extreme events separately from the main drainage system is to release all runoff (above the 1 in 1 event) from the site at a maximum rate of 2 l/s/ha or Q_{bar}, whichever is the higher value.

It is proposed to restrict the rate at which surface water is discharged from the site to Q_{bar}. As such, the proposed development would be expected to significantly reduce the risk of flooding downstream.

5.4 MAINTENANCE OF SUDS

SuDS elements within the curtilage of residential dwellings would be the responsibility of the owner of the property.

Surface water pipes and detention basins built to adoptable standards (Sewers for Adoption 7th Edition) may be adopted by YW. Geo-cellular storage crates and other SuDS features may be maintained by a management company.

6 SUMMARY

This preliminary drainage appraisal has been prepared on behalf of Commercial Estates Group (CEG) and relates to the proposed development of land at Land East of Langsett Road North, Oughtibridge. The report will support the promotion of the site to the local planning authority.

The report should be read in conjunction with the Preliminary Appraisal of Flood Risk report prepared by Weetwood which addresses flood risk for the proposed development (ref: *'Preliminary Appraisal of Flood Risk – Land East of Langsett Road North, Oughtibridge; Final Report v1.0, March 2018'*).

A summary of the principal findings and proposals is provided below.

Foul Water Drainage

- Foul water from the development would be directed to the existing public sewerage system via a connection to the existing foul pumping station located on-site (subject to confirmation from Yorkshire Water that there is sufficient capacity).
- It is likely that the foul drainage system could be via gravity, although further investigation will be required to confirm this.

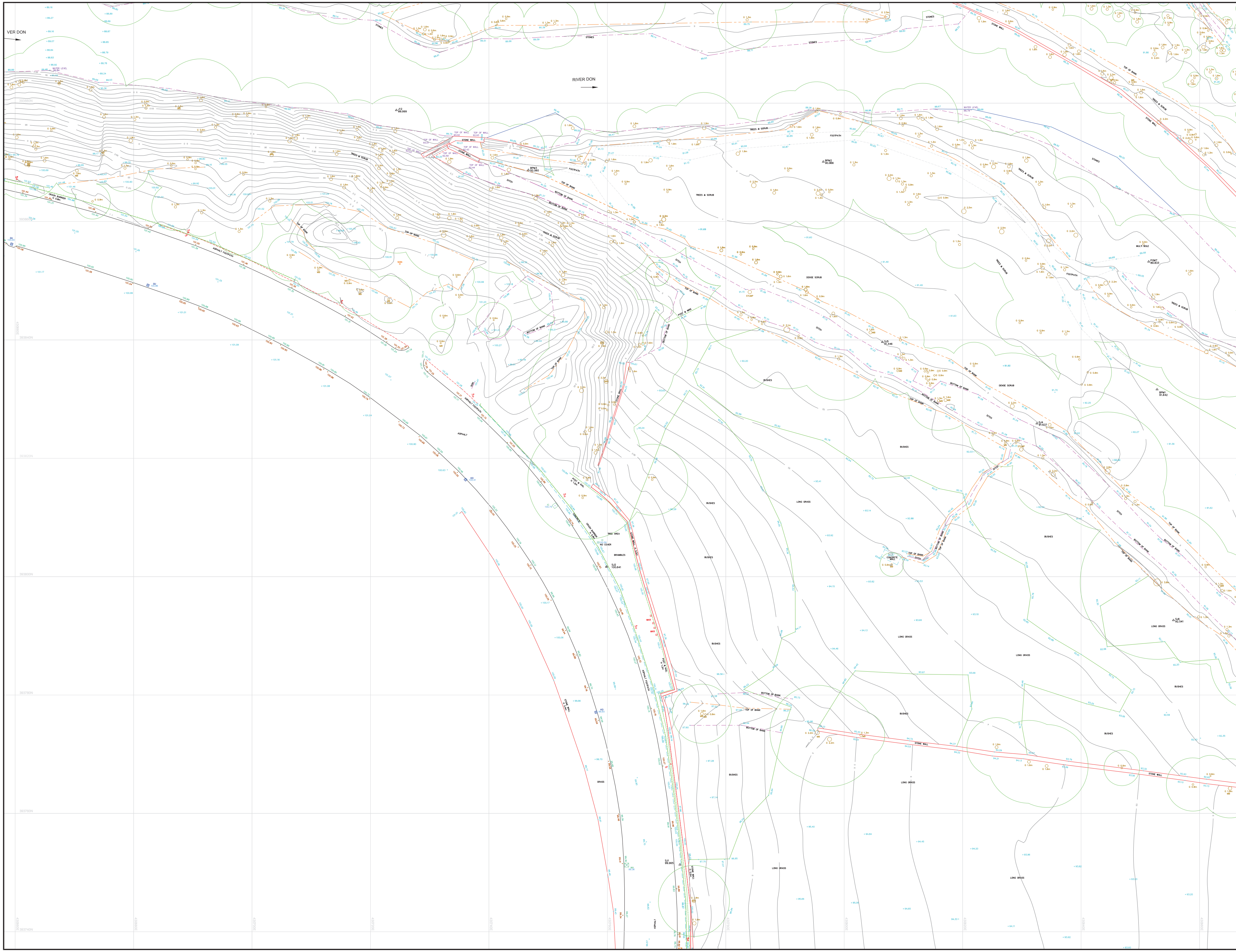
Surface Water Drainage

- Disposal of surface water from the developed sites by infiltration is not considered to be feasible due to ground conditions although this will need to be confirmed by on-site percolation testing.
- Surface water could be disposed to the River Don via a sewer across the adjacent sports fields. Alternatively, a connection to the public surface water sewer in Forge Lane may be feasible but would be subject to acceptance by YW.
- To comply with planning policy, surface water runoff would need to be restricted, requiring the provision of on-site attenuation storage.
- The attenuation storage required could be provided by above ground storage, below ground storage, or a combination of the two.

Conclusion

This Preliminary Drainage Appraisal has demonstrated that surface water from impermeable surfaces and foul water from the developed site can be managed without conflicting with the requirements of the NPPF and accompanying PPG.

APPENDIX A:	Topographic Survey



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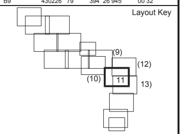

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AIR VALVE	KERB OUTLET
BENCH MARK	LAMP POST
BIN	MANHOLE (CIRCULAR)
BOLLARD	MANHOLE (RECTANGULAR)
BORE HOLE	MANHOLE (TRIANGULAR)
BRITISH TELECOM COVER	MARKER POST
BUS STOP	GULLY
CABLE TV COVER	RODDING EYE
CABLE TV SUPPLY	SIGN POST
COLUMN	TELECOM COVER
DROPPED KERB	TELEGRAPH POLE
EARTHING POINT	THRESHOLD LEVEL
ELECTRICITY COVER	TRAFFIC LIGHT
ELECTRICITY POLE	TRIAL PIT
FIRE HYDRANT	WASH OUT
GAS VALVE	WATER METER
GATE	WATER STOP COCK
INSPECTION COVER (CIRCULAR)	WATER STOP VALVE
INSPECTION COVER (RECTANGULAR)	

COVER LEVEL	CL	CHAMBER BASE LEVEL	Ch.L
INVERT LEVEL	IL	WATER SURFACE LEVEL	WL
UNABLE TO RAISE	UTR	UNABLE TO MEASURE	UTM
GIRTH OF TREE TRUNK	G	DIAMETER OF TREE TRUNK	D
HEIGHT TO TOP OF TREE CANOPY	H	MULTI BOLE TREE	MB

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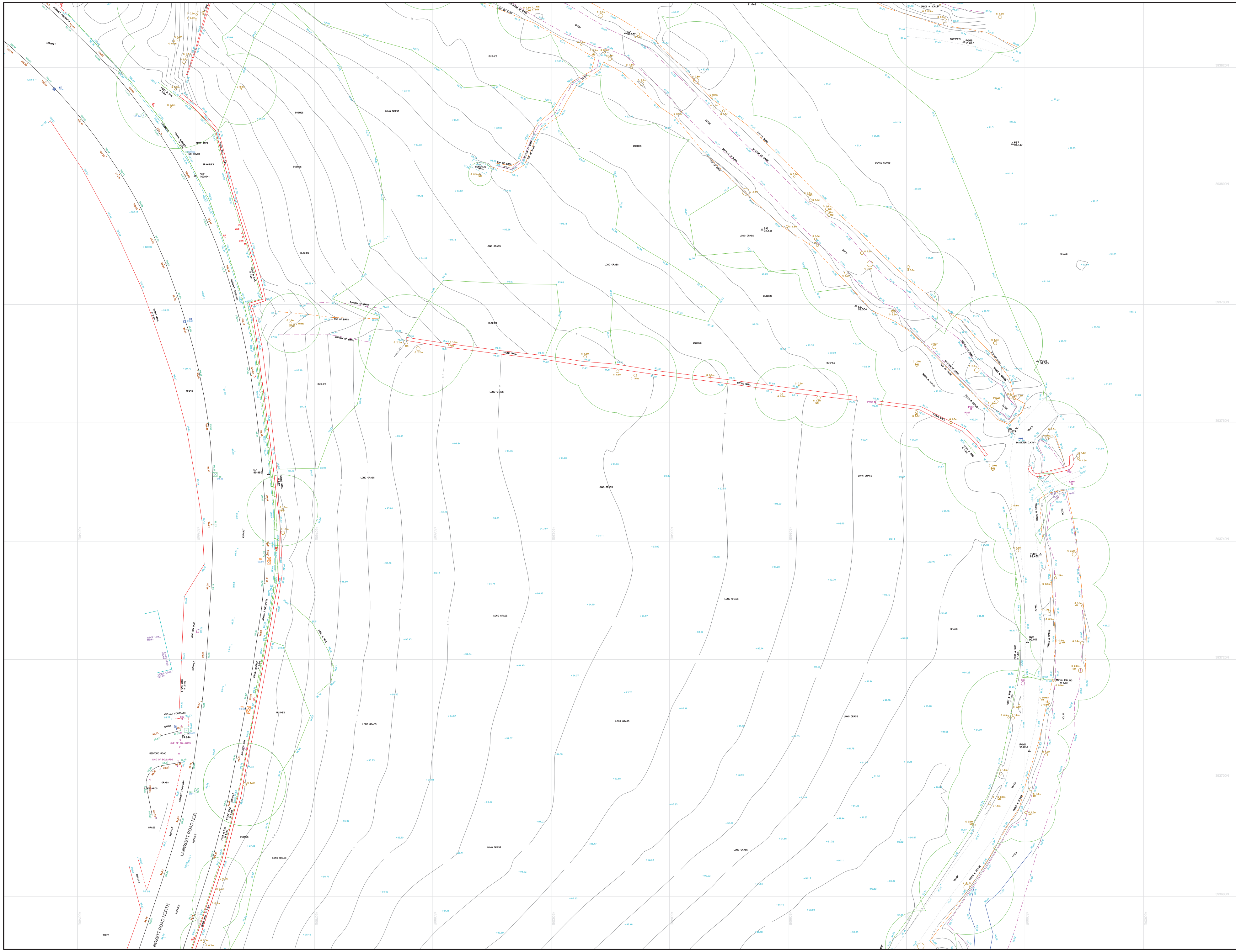

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BENCH MARK	BM	LAMP POST	
BIN	B	MANHOLE (CIRCULAR)	
BOLLARD	B	MANHOLE (RECTANGULAR)	
BORE HOLE	B	MANHOLE (TRIANGULAR)	
BRITISH TELECOM COVER	B	MARKER POST	
BUS STOP	B S	GULLY	
CABLE TV COVER	V	RODDING EYE	
CABLE TV SUPPLY		SIGN POST	S
COLUMN		TELECOM COVER	
DROPPED KERB		TELEGRAPH POLE	
EARTHING POINT		THRESHOLD LEVEL	THL
ELECTRICITY COVER		TRAFFIC LIGHT	
ELECTRICITY POLE		TRIAL PIT	
FIRE HYDRANT		WASH OUT	
GAS VALVE	S	WATER METER	
GATE		WATER STOP COCK	S
INSPECTION COVER (CIRCULAR)		WATER STOP VALVE	V
INSPECTION COVER (RECTANGULAR)			
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INVERT LEVEL	IL	WATER SURFACE LEVEL	WL
UNABLE TO RAISE	UTR	UNABLE TO MEASURE	UTM
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HEIGHT TO TOP OF TREE CANOPY	H	MULTI BOLE TREE	MB

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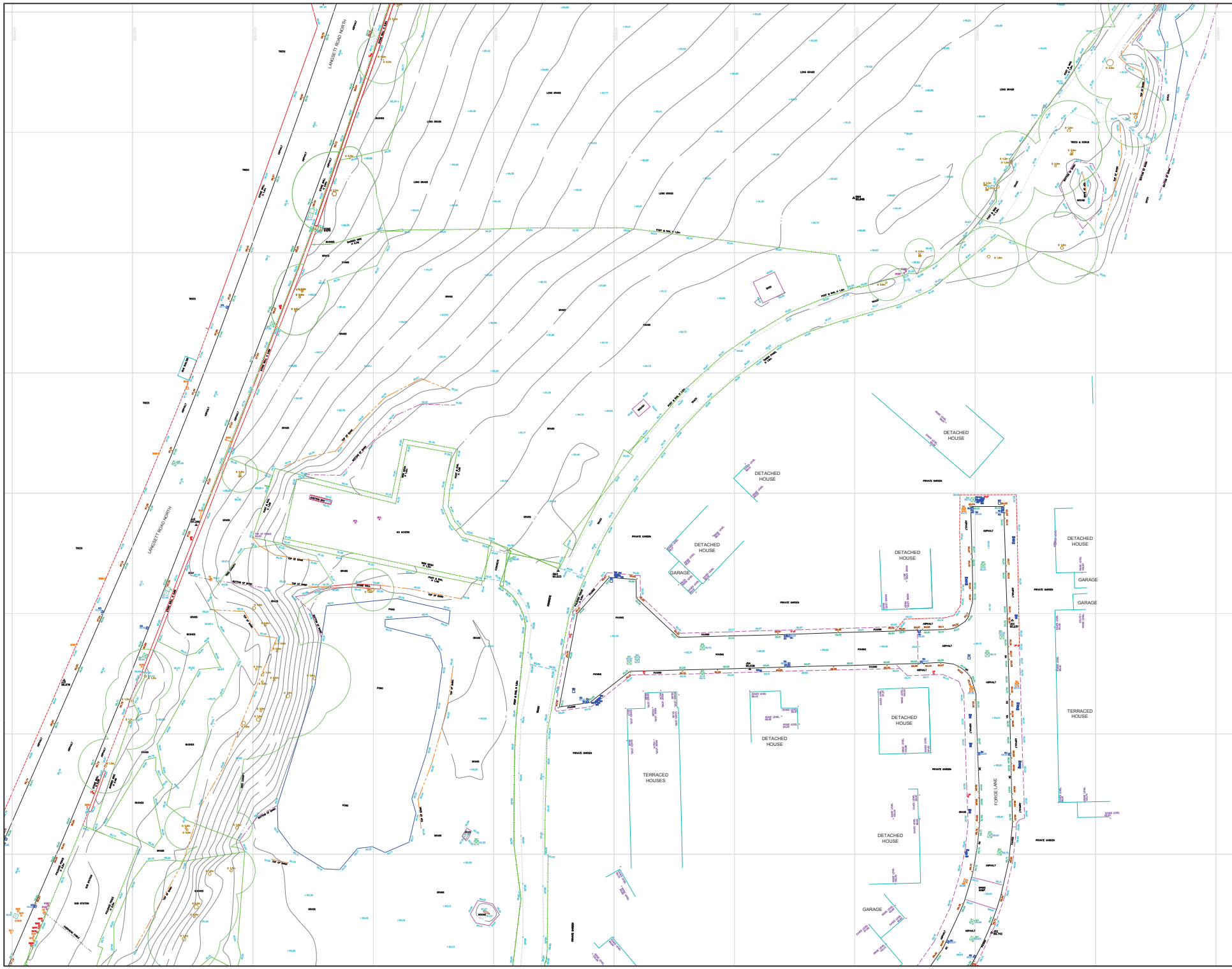

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BIN		MANHOLE (CIRCULAR)	
BOLLARD		MANHOLE (RECTANGULAR)	
BORE HOLE		MANHOLE (TRIANGULAR)	
BRITISH TELECOM COVER	BT	MARKER POST	
BUS STOP		GULLY	
CABLE TV COVER	CATV	ROADING EYE	
CABLE TV SUPPLY		SIGN POST	
COLUMN		TELECOM COVER	
DROPPED KERB		TELEGRAPH POLE	
EXISTING POINT		THRESHOLD LEVEL	
ELECTRICITY COVER	E	TRAFFIC LIGHT	
ELECTRICITY POLE		TRIAL PIT	
FIRE HYDRANT		WASH OUT	
GAS VALVE	GV	WATER METER	
GATE		WATER STOP COCK	
INSPECTION COVER (CIRCULAR)		WATER STOP VALVE	
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COVER LEVEL	CL	CHAMBER BASE LEVEL	CHL
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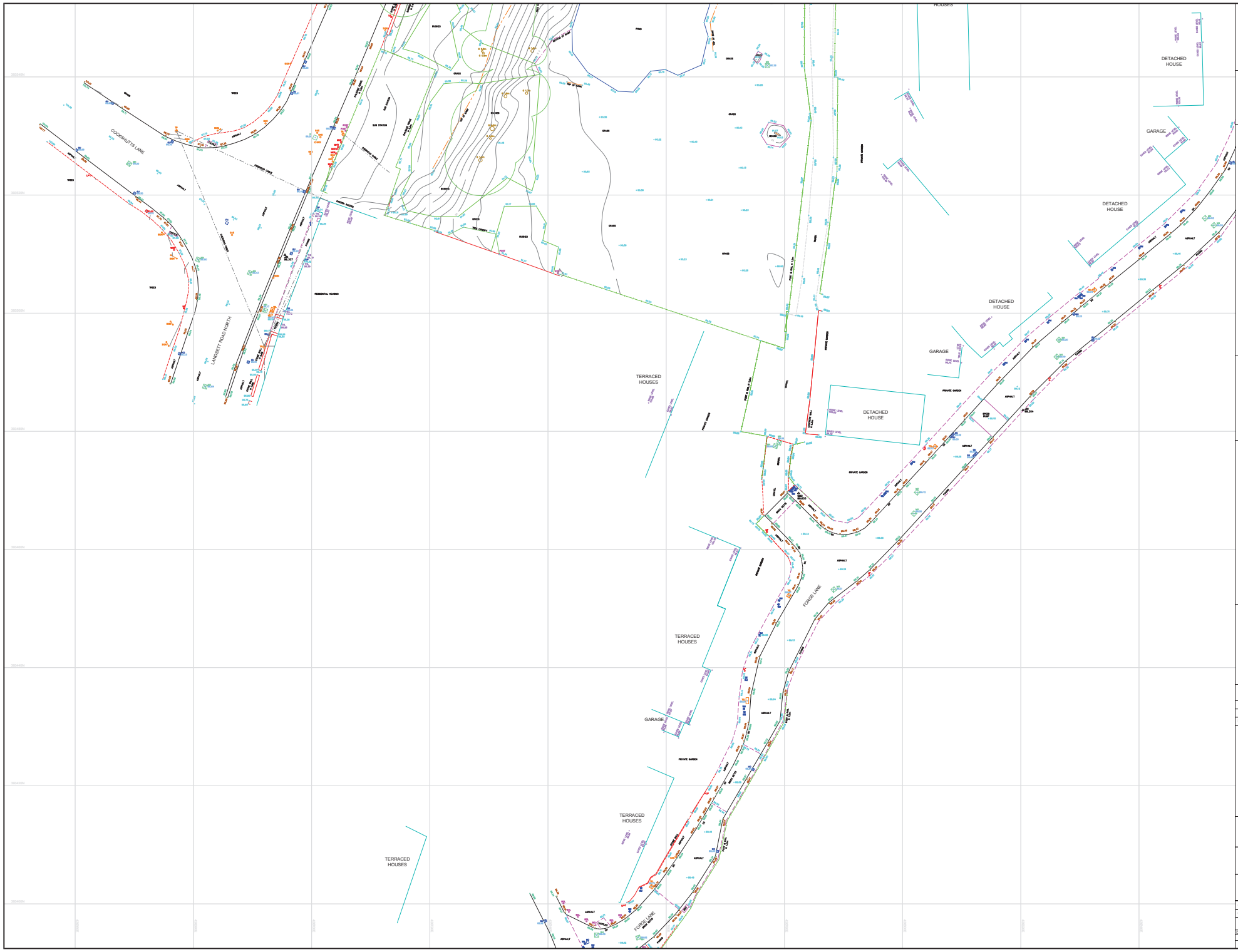

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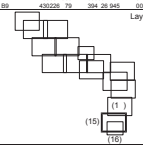
S	430652 623	3939 2 03	94 577
S2	430658 484	393983 68	95 862
S3	430673 478	3940 7 07	97 522
S4	4305 9 6 4	394063 638	0 532
S5	430446 572	394065 895	00 808
S6	430363 2 5	394 38 830	99 766
S7	430264 395	394 32 697	00 332
S8	430 77 6 7	394099 275	00 523
S9	430069 226	394 86 249	05 802
S9A	429936 756	394350 96	06 572
S9B	430006 88	3943424 5	98 886
S	430 5 5 9	394036 760	02 69
S 4	430520 6 0	393885 7 5	00 887
S	430772 257	39375 343	99 965
S 2	430759 867	39380 688	00 64
S 3	430655 905	3938868 8	0 435
S 4	430832 542	393825 876	9 537
S 5	430806 453	393839 647	9 446
S 6	430855 899	393792 638	92 54
S 7	43087 459	393779 724	92 534
S 5	430409 435	3939 8 0	00 573
S 6	430347 099	3939B0 203	0 6 6
S 7	430 42 576	394045 80	02 902
S 8	430 2 43	394 4 746	05 620
G	430610 6 6	393927 62	95 302
G2	4306 5 862	393095 64	95 536
GM	430769 803	393388 065	89 388
GM2	430782 403	393469 52	89 653
GM3	430790 707	393587 6	90 523
GM4	430639 833	393649 079	90 945
GM5	430900 428	393722 985	92 0
GM6	430899 786	393760 37	9 952
GM7	430954 536	393754 987	9 24
B	430495 77	3939S2 895	95 328
B2	430386 2 0	393978 63	95 386
B3	430252 727	394008 403	95 38
B4	430208 5 9	3940 4 5 8	95 205
	430758 674	393707 377	99 244
2	430730 676	393994 726	97 290
CR	430659 052	393909 6	94 593
B	430689 97	3939 935	94 883
B2	430725 954	3939 2 78	93 644
B3	430775 029	3939 3 207	92 2 8
B4	430828 823	3939 0 885	9 8
B5	430867 03	39389 6	9 6 0
B6	430885 949	393859 753	9 640
B7	430897 880	393807 52	9 347
B9	430226 79	394 26 945	00 32

Layout Key



AIR VALVE	AV	HDRB OUTLET	
BENCH MARK		LAMP POST	
BIN		MANHOLE (CIRCULAR)	
BOLLARD		MANHOLE (RECTANGULAR)	
BORE HOLE		MANHOLE (TRIANGULAR)	
BRITISH TELECOM COVER	BT	MARKER POST	
BUS STOP		GULLY	
CABLE TV COVER		ROD/ING EYE	
CABLE TV SUPPLY		SIGN POST	
COLUMN		TELECOM COVER	
DROPPED HERB		TELEGRAPH POLE	
EARTHING POINT		THRESHOLD LEVEL	
ELECTRICITY COVER		TRAFFIC LIGHT	
ELECTRICITY POLE		TRIAL PIT	
FIRE HYDRANT		WASH OUT	
GAS VALVE	GV	WATER METER	
GATE		WATER STOP COCK	
INSPECTION COVER (CIRCULAR)		WATER STOP VALVE	
INSPECTION COVER (RECTANGULAR)			
COVER LEVEL	CL	CHAMBER BASE LEVEL	CHL
INVERT LEVEL	IL	WATER SURFACE LEVEL	WL
UNABLE TO RAISE	UTR	UNABLE TO MEASURE	UTM
GIRTH OF TREE TRUNK	G	DIAMETER OF TREE TRUNK	D
HEIGHT TO TOP OF TREE CANOPY	H	MULTI BOLE TREE	MB

Rev	Da e	D awn	Desc p ion	Check

Met GEO ENVIRONMENTAL
Southgate House
Pontefract Road
Stourton
Leeds
West Yorkshire
LS10 1SW
T: [0] 1132 008 900
F: [0] 1132 008 901
E: admin@me geoenvironmen al.com
W: www metgeoenvironmental.com

Cl ent
P ERRE ANGULAIRE LTD

Si e
CEG OUGHTIBRIDGE
MAIN ROAD, S35 0DN

Tit e
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APPENDIX B:	Yorkshire Water Sewer Records

YORKSHIRE WATER
PROTECTION OF MAINS AND SERVICES

1. The position of Yorkshire Water Services Ltd (YWS) apparatus shown on the existing mains record drawing(s) indicates the ***general*** position and nature of our apparatus and the accuracy of this information cannot be guaranteed. Any damage to YWS apparatus as a result of your works may have serious consequences and you will be held responsible for all costs incurred. Prior to commencing major works, the exact location of apparatus must be determined on site, if necessary by excavating trial holes. The actual position of such apparatus and that of service pipes which have not been indicated must be established on site by contacting the Customer Helpline on 0845 124 24 24 for both water and sewerage.

2. The public sewer and water network is lawfully retained in its existing position and the sewerage and water undertaker is entitled to have it remain so without any disturbance. The provisions of section 159 of the Water Industry Act 1991 provides that the undertaker may "inspect, maintain, adjust, repair or alter" the network. Those rights are given to enable the undertaker to perform its statutory duties. Any development of the land or any other action that unacceptably hindered the exercise of those rights would be unlawful. The provisions contained in Section 185 of the Water Industry Act 1991 state that where it is reasonable to do so, a person may require the water supply undertaker to alter or remove a pipe where it is necessary to enable that person to carry out a proposed change of use of the land. The provisions contained in Section 185 also require the person making the request to pay the full cost of carrying out the necessary works.

3. Ground levels over existing YWS apparatus are to be maintained. Sewers in highways will ***generally*** be laid to give 1200mm of cover from finished ground level working to kerb races, other permanent identification of the limits of the road or to an agreed line and level. Substantial increases or decreases to this 1200mm depth of cover will result in the sewer being re-laid at your expense. Water mains and services will ***generally*** be laid with a minimum of 750mm depth of cover however some mains and services usually those installed over 50 years ago may have less ground cover.

4. If surface levels are to be decreased / increased significantly the effects on existing water supply apparatus will be carefully considered and if any alterations are necessary, the costs of the alterations will be recharged to you in full. Outlets on fire hydrants must be no more than 300mm below the new levels and all surface boxes must be adjusted as part of the scheme.

5. To enable future repair works to be carried out without hindrance; any pipe, cable, duct, etc. installed parallel to a water main or service pipe should not be installed directly over or within 300mm of a water main or service pipe or 1000mm of a waste water asset. Where a pipe, cable, duct, etc. crosses a main or service it should preferably cross perpendicular or at an angle of no less than 45° and with a minimum clearance of 150mm. These requirements apply to activities within an existing highway and are relevant to the installation of pipes, cables, ducts, etc. up to and including 250mm in diameter ***(see illustration below).*** Necessary protection measures for installations greater than 250mm in diameter and/or in private land will need to be agreed on an individual basis. Installations within a new development site must comply with the National Joint Utilities Group publication Volume 2: NJUG Guidelines On The Positioning Of Underground Utilities Apparatus For New Development Sites.

6. All excavation works near to YW apparatus should be by hand digging only.

7. Backfilling with a suitable material to a minimum 300mm above YW apparatus is required.

8. Adequate support must be provided where any works pass under YW apparatus.

9. Jointing chambers, lighting columns and other structures must be installed in such a way that future repair or maintenance works to YW apparatus will not be hindered.

10. Apparatus such as; railings, sign posts, etc. must not be placed in such a way that they prevent access to or full operation of controlling valves, hydrants or similar apparatus. YWS surface boxes must not be covered or buried. Any adjustment, alteration or replacement of manhole covers must be agreed on site prior to the commencement of the works with a YWS Inspector who may be contacted via our Call Centre on 0845 124 24 24.

11. Explosives shall not be used within 100 metres of any Yorkshire Water Services apparatus or installations.

12. Vibrating plant should not be used directly over any apparatus. Movement or operation by vehicles or heavy plant is not to be permitted in the immediate vicinity of YWS plant or apparatus unless there has been prior consultation and, if necessary, adequate protection provided without cost to YWS.

13. ***Under no circumstances*** should thrust boring or similar trenchless techniques commence until the actual position of the Company's mains/services along the proposed route have been confirmed by trial holes.

14. Any alterations to the highway should be notified following the procedures outlined in the New Road and Street Works Act 1991 Code of Practice; Measures Necessary Where Apparatus Is Affected By Major Works (Diversionary Works).

15. You will be held responsible for any damage or loss to YWS apparatus during and after completion of work, caused by yourselves, your servant or agent. Any damage caused or observed to YWS plant or apparatus should be immediately reported to YWS. Should YW incur any costs as a result of non-compliance with the above, all costs will be rechargeable in full.

16. You should ensure that nothing is done on the site to prejudice the safety or operation of YWS employees, plant or apparatus.

17. In accordance with the New Roads and Street Works Act 1991, Chapter 22, Part 3, Section 80. The location of any identified YW asset "***which is not marked, or is wrongly marked, on the records made available*** " should be communicated back to Yorkshire Water. The location of the apparatus should be identified on copies of the supplied plans which should be returned to Yorkshire Water (Asset Records Team) with photographic supporting evidence where possible.

18. The Government has decided that responsibility for private sewers serving two or more properties and lateral drains (the section of pipe beyond the boundary of a single property, connecting it to the public sewer) will be transferred to the water companies on Oct 1 2011. Private pumping stations will also transfer during the period 1 October 2011 – 1 Oct 2016. Records of these assets may not yet be shown on the existing mains record drawing(s). If you encounter any of these assets you must inform Yorkshire Water Services Ltd (YWS).

19. Please note that the information supplied on the enclosed plans is reproduced from Ordnance Survey material with the permission of the Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office, © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence Number 1000019559.

20. This information is for guidance only and the position and depth of any YW apparatus is approximate only. Likewise, the nature and condition of any YW apparatus cannot be guaranteed. YW has no responsibility for recording the locations of privately owned apparatus. As of 1 October 2011, there may be some lateral drains and/or public sewers which are not documented on YW records but may still be present. For the avoidance of doubt, this information is not a substitute for appropriate professional and/or legal advice. YW accepts no responsibility for any inaccuracy or omissions in this information. The actual position of YW apparatus must be determined on site by excavating trail holes by hand. YW requires a minimum of two working days' written notice of the intention to excavate any trial holes before any excavation can be undertaken. If there are any queries in this respect please contact Yorkshire Water on 0845 124 24 24.

Sewer Legend


Combined Sewer


S24 Combined Sewer


Surface Water Sewer


S24 Surface Water Sewer


Foul Sewer


S24 Foul Sewer


Section 104 Sewer

Public Rising Main


Pumping Station


Abandoned Sewer

Public Sewage
Treatment Works


Syphon Sewer &
Vacuum Sewer

\+ Property Identifier

Water Legend

Water Main 4" and below

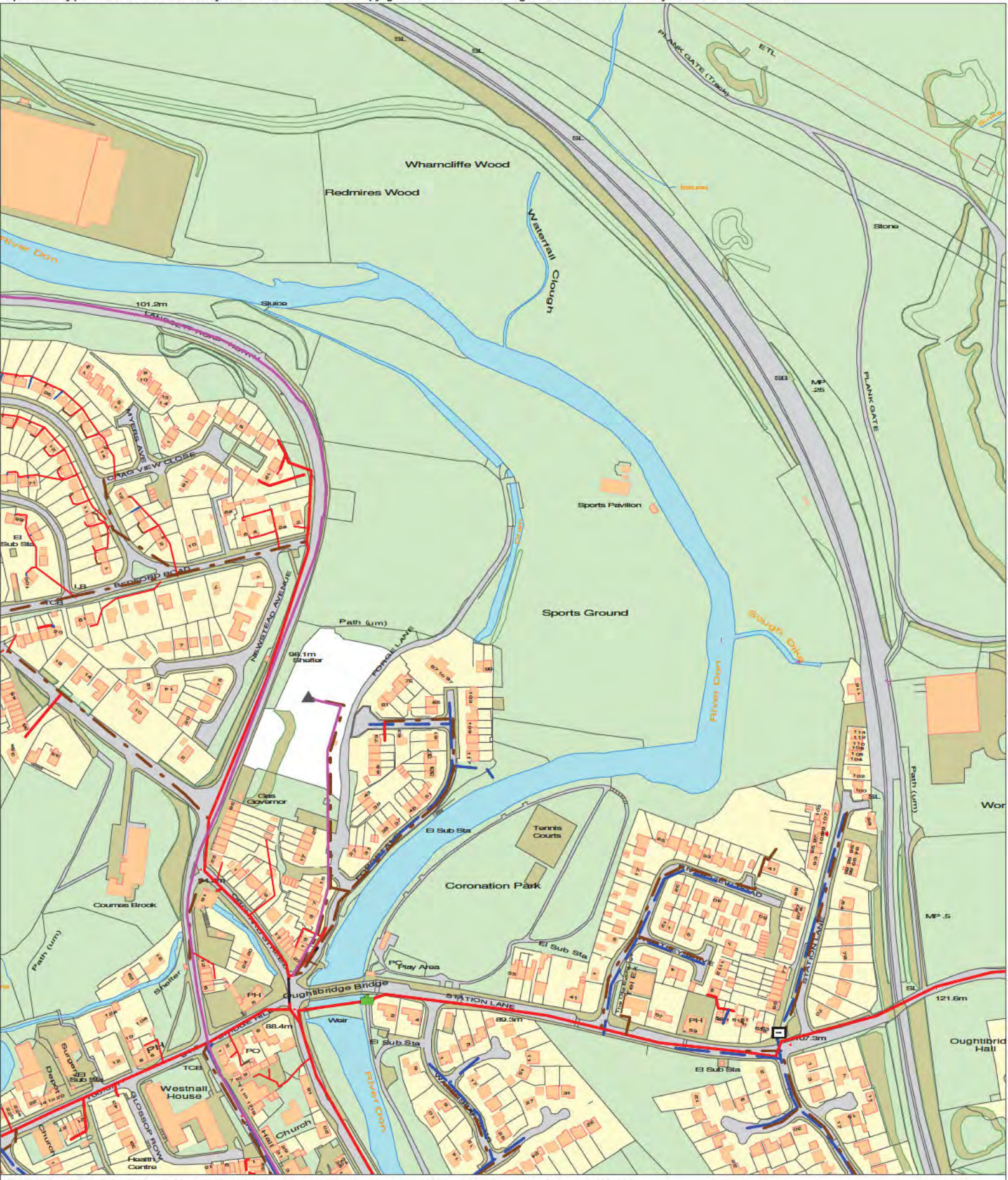
Water Main 4" and above

Raw Water Main

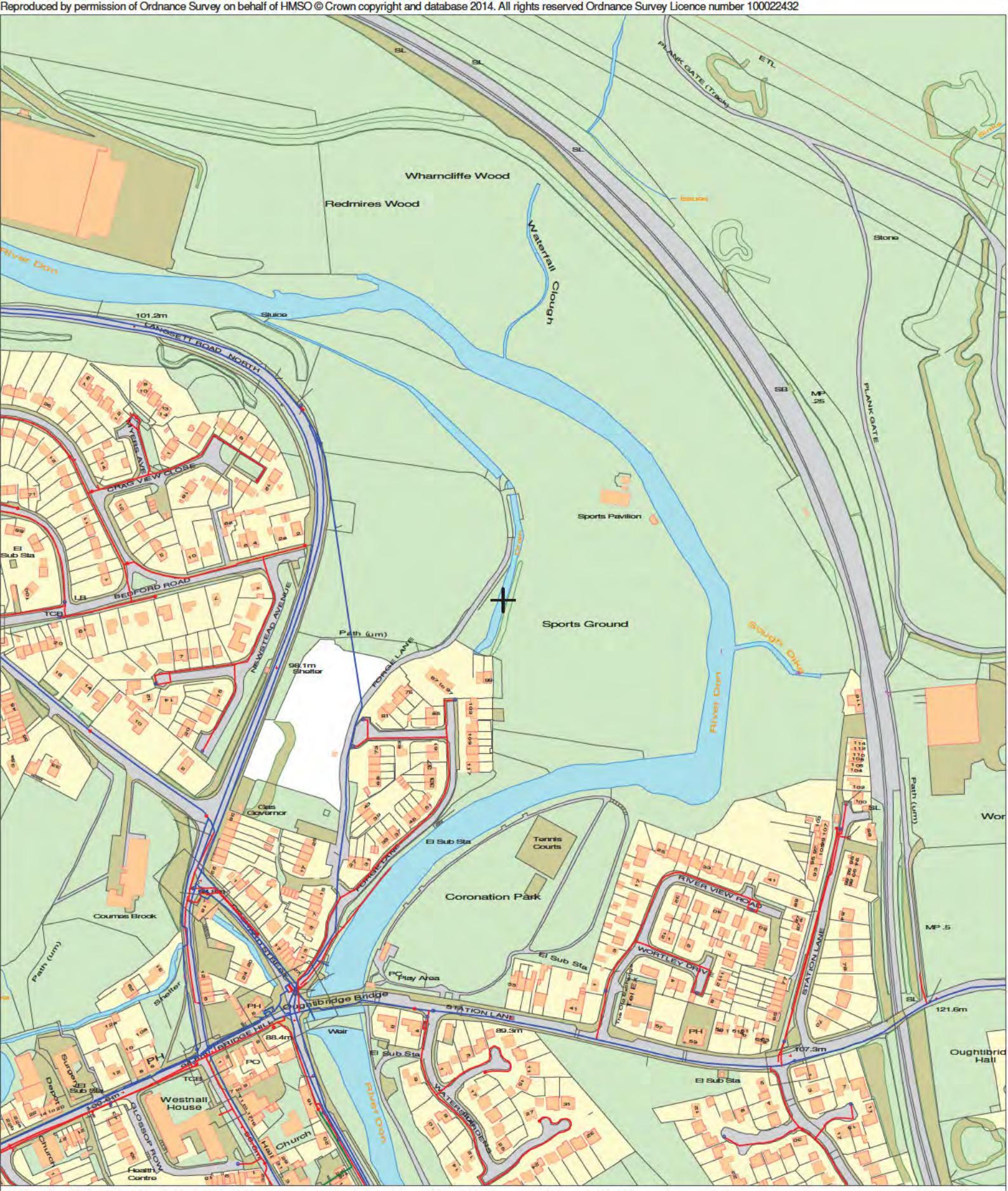
Private Water Main


Fire Hydrant


Pumping Station



Public Waste Water Network 20/11/2015 12:05:15 OS Grid Coordinates: 430538 : 393251 Map Name : SK3093SE garsidet



Public Clean Water Network 20/11/2015 12:05:26 OS Grid Coordinates: 430538 : 393251 Map Name : SK3093SE garsidet

APPENDIX C:	Greenfield Runoff Calculations

ICP SUDS Mean Annual Flood

Input

Return Period (years)	100	Soil	0.300
Area (ha)	1.000	Urban	0.000
SAAR (mm)	1004	Region Number	Region 3

Results l/s

QBAR Rural	2.8
QBAR Urban	2.8
Q100 years	5.8
Q1 year	2.4
Q30 years	4.9
Q100 years	5.8

APPENDIX D:	Surface Water Attenuation - Storage Volume Calculation

Summary of Results for 100 year Return Period (+20%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	0.443	0.343	8.6	349.1	O K
30 min Summer	0.558	0.458	8.6	474.9	O K
60 min Summer	0.679	0.579	8.6	612.9	O K
120 min Summer	0.799	0.699	8.6	754.5	O K
180 min Summer	0.860	0.760	8.6	828.7	O K
240 min Summer	0.896	0.796	8.6	873.1	O K
360 min Summer	0.942	0.842	8.6	930.2	O K
480 min Summer	0.965	0.865	8.6	960.2	O K
600 min Summer	0.977	0.877	8.6	974.7	O K
720 min Summer	0.980	0.880	8.6	979.4	O K
960 min Summer	0.974	0.874	8.6	970.9	O K
1440 min Summer	0.948	0.848	8.6	938.4	O K
2160 min Summer	0.909	0.809	8.6	889.2	O K
2880 min Summer	0.871	0.771	8.6	842.0	O K
4320 min Summer	0.792	0.692	8.6	746.2	O K
5760 min Summer	0.706	0.606	8.6	644.2	O K
7200 min Summer	0.614	0.514	8.6	538.1	O K
8640 min Summer	0.534	0.434	8.6	448.3	O K
10080 min Summer	0.462	0.362	8.6	369.8	O K
15 min Winter	0.483	0.383	8.6	392.3	O K
30 min Winter	0.610	0.510	8.6	534.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	104.149	0.0	358.9	22
30 min Summer	71.274	0.0	491.3	37
60 min Summer	46.601	0.0	642.6	66
120 min Summer	29.372	0.0	810.3	126
180 min Summer	22.041	0.0	912.0	186
240 min Summer	17.836	0.0	983.8	244
360 min Summer	13.252	0.0	1096.6	364
480 min Summer	10.714	0.0	1182.2	482
600 min Summer	9.075	0.0	1252.0	602
720 min Summer	7.920	0.0	1310.8	722
960 min Summer	6.381	0.0	1355.1	938
1440 min Summer	4.695	0.0	1315.6	1170
2160 min Summer	3.446	0.0	1711.8	1560
2880 min Summer	2.762	0.0	1829.1	1968
4320 min Summer	2.018	0.0	2004.5	2812
5760 min Summer	1.617	0.0	2141.2	3632
7200 min Summer	1.362	0.0	2254.0	4328
8640 min Summer	1.184	0.0	2351.3	5096
10080 min Summer	1.052	0.0	2437.7	5760
15 min Winter	104.149	0.0	401.9	22
30 min Winter	71.274	0.0	550.3	37

Summary of Results for 100 year Return Period (+20%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	0.746	0.646	8.6	690.9	O K
120 min Winter	0.879	0.779	8.6	852.1	O K
180 min Winter	0.948	0.848	8.6	938.6	O K
240 min Winter	0.990	0.890	8.6	991.5	O K
360 min Winter	1.045	0.945	8.6	1062.1	O K
480 min Winter	1.076	0.976	8.6	1102.2	O K
600 min Winter	1.093	0.993	8.6	1125.0	O K
720 min Winter	1.102	1.002	8.6	1136.5	O K
960 min Winter	1.104	1.004	8.6	1138.9	O K
1440 min Winter	1.076	0.976	8.6	1102.2	O K
2160 min Winter	1.025	0.925	8.6	1036.9	O K
2880 min Winter	0.971	0.871	8.6	967.9	O K
4320 min Winter	0.856	0.756	8.6	824.4	O K
5760 min Winter	0.730	0.630	8.6	672.8	O K
7200 min Winter	0.581	0.481	8.6	500.5	O K
8640 min Winter	0.459	0.359	8.6	366.4	O K
10080 min Winter	0.358	0.258	8.6	258.9	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	46.601	0.0	719.7	66
120 min Winter	29.372	0.0	907.2	124
180 min Winter	22.041	0.0	1021.3	182
240 min Winter	17.836	0.0	1102.0	240
360 min Winter	13.252	0.0	1228.4	358
480 min Winter	10.714	0.0	1324.0	474
600 min Winter	9.075	0.0	1375.0	588
720 min Winter	7.920	0.0	1376.6	700
960 min Winter	6.381	0.0	1365.6	922
1440 min Winter	4.695	0.0	1332.9	1328
2160 min Winter	3.446	0.0	1916.8	1664
2880 min Winter	2.762	0.0	2049.1	2132
4320 min Winter	2.018	0.0	2246.1	3032
5760 min Winter	1.617	0.0	2397.6	3976
7200 min Winter	1.362	0.0	2524.6	4680
8640 min Winter	1.184	0.0	2635.0	5360
10080 min Winter	1.052	0.0	2730.1	5952

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.200	Shortest Storm (mins)	15
Ratio R	0.315	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+20

Time Area Diagram

Total Area (ha) 1.840

Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)
0	4	1.000	4	8	0.840

Model Details

Storage is Online Cover Level (m) 1.400

Tank or Pond Structure

Invert Level (m) 0.100

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	960.0	1.300	1436.1

Hydro-Brake Optimum® Outflow Control

Unit Reference	MD-SHE-0134-8600-1100-8600
Design Head (m)	1.100
Design Flow (l/s)	8.6
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	134
Invert Level (m)	0.000
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.100	8.6
Flush-Flo™	0.327	8.6
Kick-Flo®	0.716	7.0
Mean Flow over Head Range	-	7.4

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.8	1.200	9.0	3.000	13.8	7.000	20.7
0.200	8.2	1.400	9.6	3.500	14.9	7.500	21.4
0.300	8.6	1.600	10.3	4.000	15.8	8.000	22.1
0.400	8.5	1.800	10.8	4.500	16.8	8.500	22.7
0.500	8.3	2.000	11.4	5.000	17.6	9.000	23.4
0.600	8.0	2.200	11.9	5.500	18.4	9.500	24.0
0.800	7.4	2.400	12.4	6.000	19.2		
1.000	8.2	2.600	12.9	6.500	20.0		

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	0.498	0.398	8.6	408.9	O K
30 min Summer	0.630	0.530	8.6	556.9	O K
60 min Summer	0.771	0.671	8.6	720.6	O K
120 min Summer	0.908	0.808	8.6	888.4	O K
180 min Summer	0.980	0.880	8.6	978.3	O K
240 min Summer	1.023	0.923	8.6	1033.6	O K
360 min Summer	1.079	0.979	8.6	1107.1	O K
480 min Summer	1.111	1.011	8.6	1148.7	O K
600 min Summer	1.129	1.029	8.7	1172.0	O K
720 min Summer	1.137	1.037	8.7	1183.5	O K
960 min Summer	1.138	1.038	8.7	1184.1	O K
1440 min Summer	1.114	1.014	8.6	1153.1	O K
2160 min Summer	1.076	0.976	8.6	1102.4	O K
2880 min Summer	1.039	0.939	8.6	1054.2	O K
4320 min Summer	0.965	0.865	8.6	959.9	O K
5760 min Summer	0.894	0.794	8.6	870.3	O K
7200 min Summer	0.822	0.722	8.6	782.3	O K
8640 min Summer	0.747	0.647	8.6	692.2	O K
10080 min Summer	0.656	0.556	8.6	586.2	O K
15 min Winter	0.544	0.444	8.6	459.3	O K
30 min Winter	0.690	0.590	8.6	626.1	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
15 min Summer	121.508	0.0	418.6	23
30 min Summer	83.153	0.0	573.4	37
60 min Summer	54.368	0.0	749.9	68
120 min Summer	34.268	0.0	945.3	126
180 min Summer	25.715	0.0	1064.2	186
240 min Summer	20.808	0.0	1147.8	246
360 min Summer	15.461	0.0	1279.7	364
480 min Summer	12.499	0.0	1375.1	484
600 min Summer	10.588	0.0	1388.1	602
720 min Summer	9.240	0.0	1386.6	722
960 min Summer	7.445	0.0	1376.8	960
1440 min Summer	5.478	0.0	1349.2	1216
2160 min Summer	4.020	0.0	1997.1	1600
2880 min Summer	3.223	0.0	2133.8	2016
4320 min Summer	2.355	0.0	2339.6	2852
5760 min Summer	1.886	0.0	2498.5	3688
7200 min Summer	1.589	0.0	2629.6	4472
8640 min Summer	1.381	0.0	2743.6	5352
10080 min Summer	1.227	0.0	2843.2	6048
15 min Winter	121.508	0.0	469.1	22
30 min Winter	83.153	0.0	642.1	37

Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
60 min Winter	0.845	0.745	8.6	810.6	O K
120 min Winter	0.998	0.898	8.6	1002.0	O K
180 min Winter	1.079	0.979	8.6	1106.5	O K
240 min Winter	1.129	1.029	8.7	1171.9	O K
360 min Winter	1.195	1.095	8.9	1261.3	O K
480 min Winter	1.234	1.134	9.1	1314.9	Flood Risk
600 min Winter	1.259	1.159	9.2	1348.0	Flood Risk
720 min Winter	1.273	1.173	9.2	1367.8	Flood Risk
960 min Winter	1.283	1.183	9.2	1382.1	Flood Risk
1440 min Winter	1.265	1.165	9.2	1357.4	Flood Risk
2160 min Winter	1.216	1.116	9.0	1290.2	Flood Risk
2880 min Winter	1.167	1.067	8.8	1222.7	O K
4320 min Winter	1.059	0.959	8.6	1081.0	O K
5760 min Winter	0.952	0.852	8.6	943.3	O K
7200 min Winter	0.842	0.742	8.6	807.2	O K
8640 min Winter	0.717	0.617	8.6	657.3	O K
10080 min Winter	0.572	0.472	8.6	490.6	O K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)
60 min Winter	54.368	0.0	839.6	66
120 min Winter	34.268	0.0	1058.8	124
180 min Winter	25.715	0.0	1192.1	182
240 min Winter	20.808	0.0	1285.7	242
360 min Winter	15.461	0.0	1395.7	358
480 min Winter	12.499	0.0	1401.8	474
600 min Winter	10.588	0.0	1401.4	590
720 min Winter	9.240	0.0	1400.1	704
960 min Winter	7.445	0.0	1396.9	926
1440 min Winter	5.478	0.0	1392.6	1354
2160 min Winter	4.020	0.0	2237.5	1688
2880 min Winter	3.223	0.0	2391.0	2160
4320 min Winter	2.355	0.0	2494.6	3072
5760 min Winter	1.886	0.0	2799.0	3976
7200 min Winter	1.589	0.0	2946.2	4896
8640 min Winter	1.381	0.0	3072.5	5784
10080 min Winter	1.227	0.0	3185.9	6352

Rainfall Details

Rainfall Model	FSR	Winter Storms	Yes
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.200	Shortest Storm (mins)	15
Ratio R	0.315	Longest Storm (mins)	10080
Summer Storms	Yes	Climate Change %	+40

Time Area Diagram

Total Area (ha) 1.840

Time (mins) From:	To:	Area (ha)	Time (mins) From:	To:	Area (ha)
0	4	1.000	4	8	0.840

Model Details

Storage is Online Cover Level (m) 1.400

Tank or Pond Structure

Invert Level (m) 0.100

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	960.0	1.300	1436.1

Hydro-Brake Optimum® Outflow Control

Unit Reference	MD-SHE-0134-8600-1100-8600
Design Head (m)	1.100
Design Flow (l/s)	8.6
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	134
Invert Level (m)	0.000
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.100	8.6
Flush-Flo™	0.327	8.6
Kick-Flo®	0.716	7.0
Mean Flow over Head Range	-	7.4

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	4.8	1.200	9.0	3.000	13.8	7.000	20.7
0.200	8.2	1.400	9.6	3.500	14.9	7.500	21.4
0.300	8.6	1.600	10.3	4.000	15.8	8.000	22.1
0.400	8.5	1.800	10.8	4.500	16.8	8.500	22.7
0.500	8.3	2.000	11.4	5.000	17.6	9.000	23.4
0.600	8.0	2.200	11.9	5.500	18.4	9.500	24.0
0.800	7.4	2.400	12.4	6.000	19.2		
1.000	8.2	2.600	12.9	6.500	20.0		

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LICHFIELDS

Appendix 3 Access Appraisal (March 2018)

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Project Name:	Land East of Langsett Road North, Oughtibridge
BGH Reference	15-215-008.02
Subject:	Access Appraisal
Date:	March 2018

1.0 INTRODUCTION

1.1 Oughtibridge is located on the northern outskirts of Sheffield approximately 5 miles from the city centre. The proposed site, which is expected to accommodate a development of circa 70-80 dwellings, is located to the east of A6102 Langsett Road North directly to the north of Oughtibridge.

1.2 Forge Lane, which currently serves a development of approximately 50 dwellings, is located to the south and east of the site. There is an existing unmade track which runs along the majority of the extent of the eastern boundary of the site that provides access to the sports fields and pavilion to the north and east. To the north the site is bounded by the River Don and a wooded area.

1.3 A6102 Langsett Road North is a local distributor route which runs along the western boundary of the site between Sheffield to the south and Stocksbridge to the north. In the vicinity of the site the A6102 Langsett Road North is a two-way, single carriageway road with street lighting and footways on both sides of the carriageway. The road is subject to a 50mph speed limit along the majority of the site frontage, this changes to 30mph towards the south of the site, as it approaches Oughtibridge.

1.4 It is envisaged that the primary access to the site would be via a priority T-junction directly from Langsett Road North. There are opportunities for pedestrian/cycle and emergency access routes through the existing Forge Lane development and the existing unmade track which runs along the eastern boundary of the site.

2.0 Sustainability

2.1 Facilities in Oughtibridge include Oughtibridge Primary School, a number of restaurants/public houses, a pharmacy, a doctor's surgery, a post office, a barber's and hair salon, a convenience store and a number of other small businesses. All of which are within reasonable walking distance from the site.

2.2 There are pedestrian footways throughout the existing Forge Lane development and on both sides of A6102 Langsett Road North which provide routes to Oughtibridge Village. Once in the centre of Oughtibridge there are a number of pedestrian crossing facilities, including a zebra crossing on the A6102 Low Road to the south of the A6102 Orchard St/Station Lane/Bridge Hill priority junction, to assist pedestrian access to the local facilities.

2.3 There are bus stops located on Langsett Road North which would be readily accessible from the site on foot. The SL1 and SL1A bus route, which runs from Middlewood Park & Ride site to Stocksbridge, operates 5 buses an hour and provides good access to the surrounding area. This route also provides an opportunity for onwards journeys into Sheffield via the Supertram. The 57 bus route also stops at these bus stops and provides an hourly service between Sheffield Interchange and Stocksbridge. In addition to these public services there is also a school service to Bradfield School which stops in this location.

3.0 Access

3.1 Vehicular access into the site can be taken from A6102 Langsett Road North, approximately 125m north of Cockshutts Lane, an indicative layout of the access is attached at **Enclosure 1** on BGH drawing 15/215/TR/034. It is considered that A6102 Langsett Road North can serve a development of the size proposed via a simple priority T-junction.

3.2 The indicative access layout is in the form of a simple priority T-junction with a carriageway width of 5.5m and 2.0m footways to both sides, in accordance with The South Yorkshire Residential Design Guide. This junction would provide vehicular access to the entire site which is expected to comprise 70-80 dwellings, although it may be possible to secure alternative emergency access via Forge Lane.

3.3 The visibility from this location has been assessed using the results of a speed survey undertaken on Langsett Road North in the 50mph section of the road which indicated that the 85th percentile wet-weather speed was 39.5mph westbound and 37.5mph eastbound, therefore visibility splays of 2.4 x 120m have been adopted in accordance with Design Manual for Roads and Bridges, as shown on the enclosed plan.

3.4 There may be an opportunity to extend the 30mph zone from its current location to the south of the proposed access location to a point north of the proposed access on the A6102 Langsett Road North. This would encompass the extension to the residential area and possibly further reduce speeds on the approach to Oughtibridge.

3.5 As indicated earlier Forge Lane currently provides access to a small housing development (approx. 50 dwellings) to the south east of the proposed site via a junction with A6102 Orchard Street. In addition to the access from Langsett Road North, Forge Lane may therefore offer an additional point of access for pedestrians, cyclists and emergency vehicles.

3.6 Adjacent to Forge Lane there is an unmade access track, which runs along the eastern extent of the site forming an existing pedestrian and vehicular route to the sports pitches and playing fields located to the north east of the site. As part of any

development appropriate access to the playing fields will be maintained and this will result in improved pedestrian and vehicular routes to this local facility.

3.7 In addition to improvements along the unmade access track there may be opportunity to provide a pedestrian/ cycle route between the recently consented Oughtibridge Mill site and this site via a link adjacent to the River Don, facilitated by a new pedestrian / cycle bridge over the river.

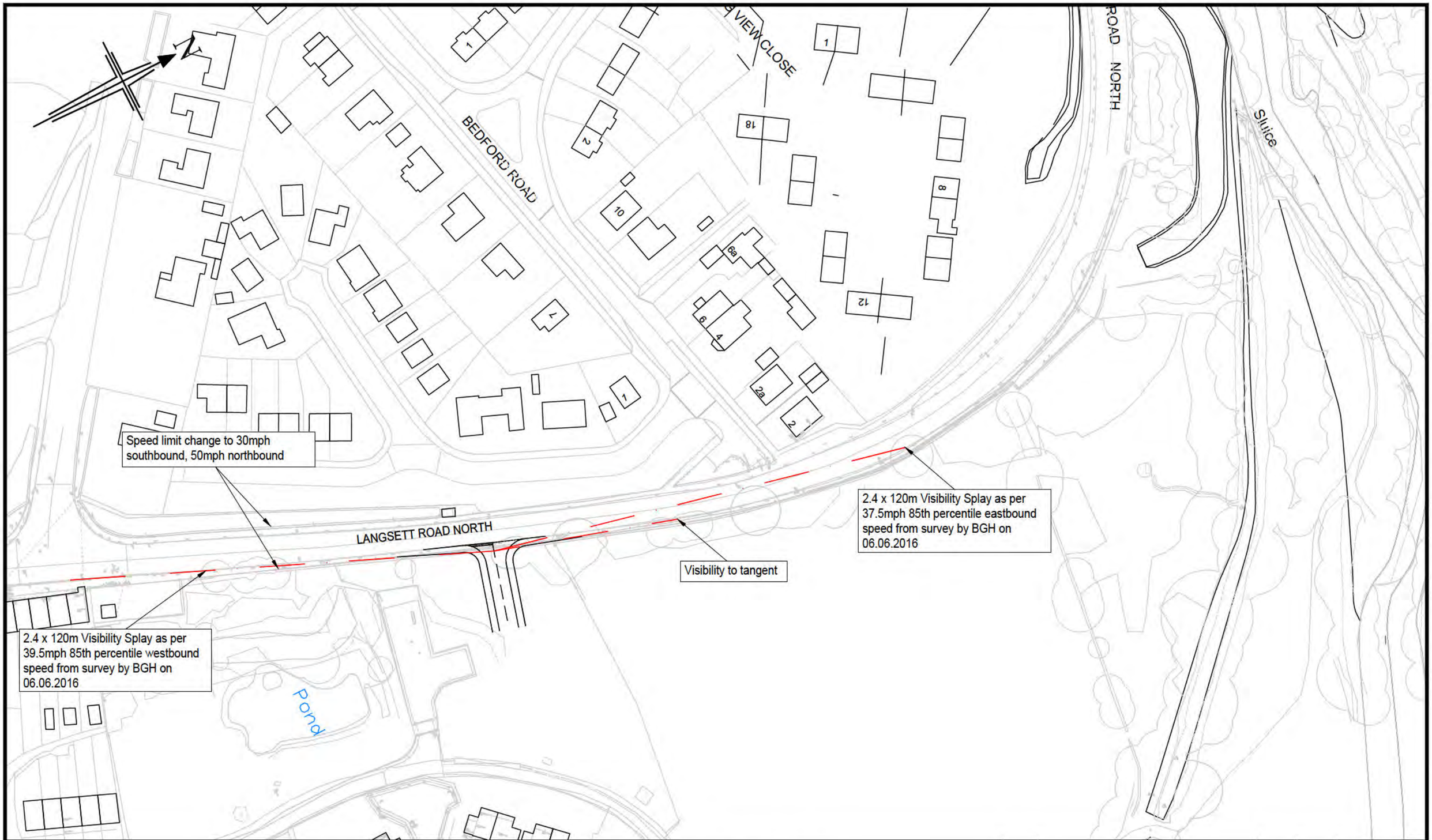
4.0 Summary

4.1 Oughtibridge is located approximately 5 miles outside of Sheffield. The village has good public transport access providing regular services to Stocksbridge and Sheffield.

4.2 Facilities in Oughtibridge include Oughtibridge Primary School, a number of restaurants/public houses, a pharmacy, a doctor's surgery, a post office, a barber's and hair salon, a convenience store and a number of other small businesses. All of which are within reasonable walking distance from the site.

4.3 Appropriate access to the site can be achieved from A6102 Langsett Road North in the form of a simple priority T-junction where appropriate visibility can be achieved. In addition to this new vehicular access, there is the potential to have an additional pedestrian, cycle and emergency access to the site via Forge Lane, as well as enhanced pedestrian and cycle access routes to the existing playing fields to the east of the site and possibly through to Oughtibridge Mill.

Appendix 4 Access Option 1 Visibility Splay - Drawing No. 15/215/TR/034 Rev A (March 2018)



Client: CEG

Project: OUGHTIBRIDGE

Rev:	Amendment:	Drn:	Chk:	Date:
A	REVISED JUNCTION LOCATION	AB	AC	23.03.18

Title: PLOT 8C ACCESS OPTION 1 VISIBILITY SPLAY

Job No: 15-215 Drawn: MHT Checked: AB Date: 16.03.18

Scale: 1:1000 A3 - 420 x 297 Drawing No: 15/215/TR/034 Revision: A

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