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Technical Note

Project:	P16-530 Land at Newark Road, Sutton-in-Ashfield		
Subject:	Technical Note – Flooding and Drainage		
Prepared by:	Matthew Leask – Associate	**Date:**	6 January 2025
Authorised by:	Kriston Harvey - Director	**Status:**	S2 - Information
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1 Introduction

1.1 Terms of Reference

This technical note has been commissioned by Hallam Land and relates to planning application reference V/2022/0629, for a residential development of up to 300 dwellings with associated infrastructure and landscaping.

This note has been prepared in response to a statement provided by Councillor Matthew Relf, which was issued to the appellant by email on 17th December 2024.

2 Councillor Statement

2.1 Overland flow path

Councillor Matthew Relf (referred to as "Cllr Relf") has provided a statement covering issues relating to public transport, flooding and drainage and wildlife and countryside. This technical note will address only comments relating to flooding and drainage.

Cllr Relf expresses concerns that the Site is impacted by surface water and ground water flooding and that the application does not adequately take this into account. The statement identifies an overland flow path that runs from the southern boundary to the apex of the inverted 'L' shape of the site (referred to as "the Site"). Cllr Relf attributes the flows to a watercourse that runs from the ditch immediately south of the Site, and then across the Site, that he says becomes overwhelmed during periods of heavy rain. The statement includes a photo of a channel within the Site, which is taken at a point adjacent the back gardens of properties on Searby Road in the approximate location of the

proposed SUDs basins. Cllr Relf raises concerns that the layout does not take into consideration this overland flow path.

2.2 Rodgers Leask response

The National Planning Practice Guidance (PPG) 'Flood Risk and Coastal Change' was published in March 2014 and last updated in August 2022. At paragraph 021, PPG refers to using flooding information within the Strategic Flood Risk Assessment (SFRA) for the area, and Environment Agency (EA) flood maps, when undertaking a site-specific flood risk assessment.

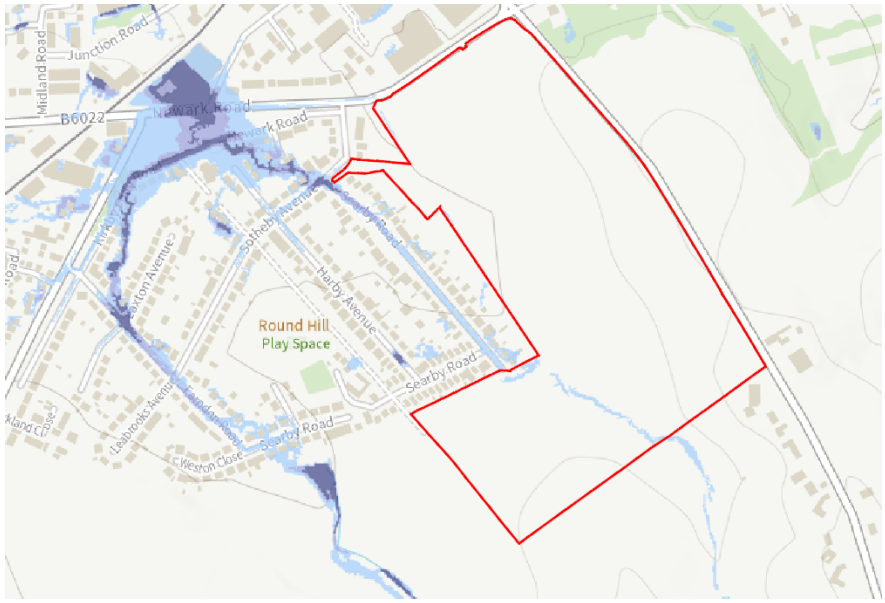

Figure 1: EA Surface Water Flood Extents

The EA online guidance entitled 'Flood risk assessments: applying for planning permission' contains advice for undertaking flood risk assessments. This recommends that EA flood mapping and the SFRA is referred to for extents of flooding from all sources.

The latest version (P03) of Rodgers Leask's Flood Risk Assessment (FRA) submitted with the outline application reviews flood risk within the Site. At Section 3.1.1 the FRA confirms that the Site is located wholly within Flood Zone 1. The EA 'Flood map for planning' online

flood maps have been reviewed on 3rd January 2025, and the Site is still located wholly within Flood Zone 1.

At section 3.1.3, the FRA confirms that, following a review of Environment Agency (EA) online flood mapping, there are areas within the Site shown to be at 'Low' risk of surface water flooding. This is shown to have a chance of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%). The EA Long Term Flood Risk Surface Water Flood maps were reviewed on 11th December 2024 and an extract of the map with the Site red line boundary added, is shown at Figure 1. Only Low risk surface water flooding is shown within the Site boundary. The map shows a thin sliver of Low risk surface water flooding within the area of the flow path identified by Cllr Relf.

The Ashfield District Council (ADC) SFRA has been reviewed but does not contain a surface water flood map. Nottinghamshire County Council's website contains documents relating to flooding and drainage, as part of its role as Lead Local Flood Authority (LLFA). The NCC Local Flood Risk Management Strategy (LFRMS) documents include a map at Figure A1 of Risk of Flooding from Surface Water in the region. Only Low (0.1% AEP) flood risk is shown within the Site.

The FRA discusses the presence of the ditch south of the Site's southern boundary as well as the presence of a buried pipe that runs approximately from the ditch and into the Site, which follows a similar route to the flow path route marked out on an image contained in Cllr Relf's statement.

The presence of a pipe was identified during a GPR survey undertaken in 2017, and also by trial pitting during site investigations undertaken by Eastwood Consulting Engineers (ECE) in 2022. A photograph of the exposed pipe is shown in Figure 2, taken from ECE report with reference 46924-002 Issue 2, dated May 2022.

Figure 2: Existing Buried Pipe

The pipe was found to be 150mm in diameter and silted, and so as Cllr Relf suggests, the pipe is unlikely to cater for significant flows of water. During site visits Rodgers Leask Engineers have not observed any deep channel features that Cllr Relf has described within the route of the flow path, however there was evidence of minor erosion to the surface in several locations where the topography is at its steepest. The photograph included in Cllr Relf's statement shows a deeper channel, that appears to be located outside of the proposed built development area, as it runs adjacent to the rear gardens close to the western boundary of the Site.

As a general means of mitigation across the proposed development, the FRA recommends at section 3.1.3, "*that a series of cut off drains or channels should be installed to direct overland flow away from proposed properties within the layout and directly to the existing ditch network, utilising a series of baffles to reduce the rate of flow and increase the time of entry.*"

At Appendix F, the FRA contains a drainage strategy drawing, with reference 16530-RLL-17-XX-DR-C-201 Revision E. The drainage strategy drawing clearly shows proposed land drainage features along the southern boundary of the Site, including pipes and swales (refer to Figure 3). These features have been proposed to intercept any potential overland flow, and convey these flows using a positive, controlled drainage system. With the new system in place, the existing buried pipe could be removed as it would become obsolete.

The swales will be planted and include baffles or check dams that will slow flows, which will increase the time of entry into the receiving drainage network. The downstream

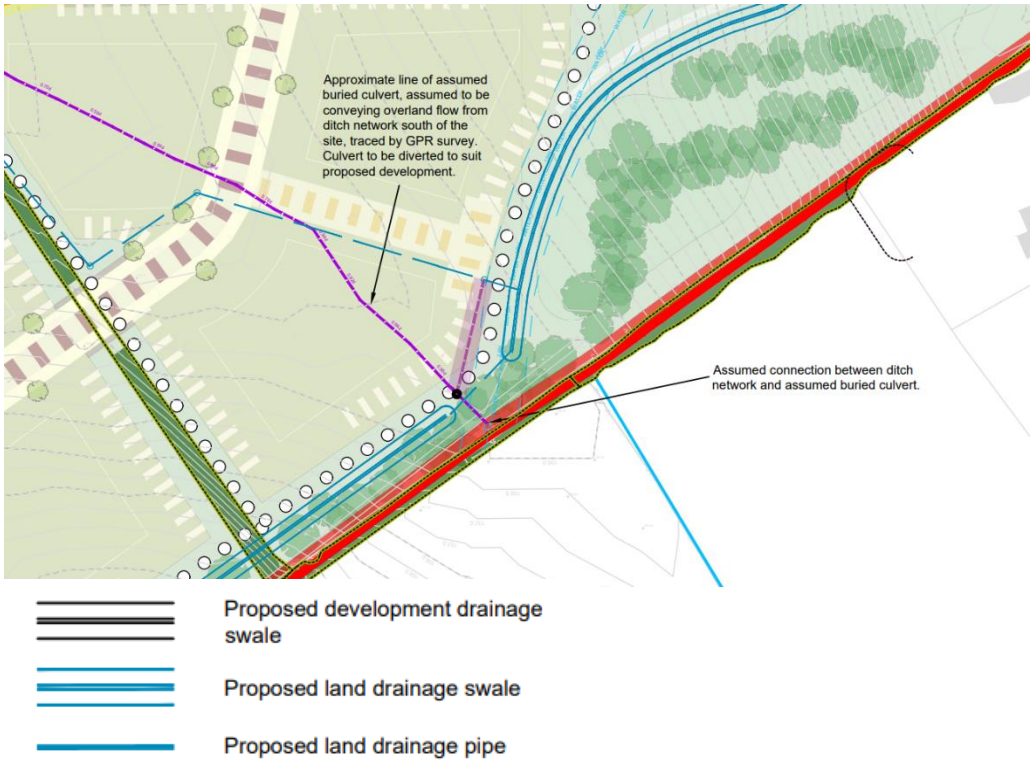

Figure 3: Proposed Land Drainage (FRA)

pipework will convey flows away from the proposed housing, through the illustrative layout and towards the existing ditch that runs along the western edge of the Site.

Replacing the existing 150mm diameter pipe with a network of appropriately sized SuDS swales and pipework, will provide significant betterment to the existing situation. This will address the low level flood risk, on-site and off-site.

In summary there is now a silted up land drain that isn't effective and will be replaced by a positively planned SUDs network that will convey any water across the site to address any low level flood risk and improve the position for existing homes in the process.

Cllr Relf has also raised concerns about groundwater flooding within the Site. Evidence of springs was not encountered during site investigations and no shallow groundwater body has been identified across 6 months of monitoring.

2.3 Sutton Junction Estate Flooding

Cllr Relf's statement discusses historic flooding issues within the locality, of which flows from the Site are said to contribute to. Cllr Relf expresses concerns that the developer is not taking measures to protect the new development (the Site) from flooding nor is the development being used as an opportunity to provide measures to alleviate flooding issues in the area.

The statement includes several photographs taken around Newark Road and Searby road, during February 2020 and October 2023. The statement goes on to summarise historic issues associated with overloaded sewers and drains within Searby Road, Newark Road and Cardinal Court, that occurs during rainfall events.

2.4 Rodgers Leask Response

The Site currently drains by a combination of overland flow, with some limited infiltration. The Site typically falls from east to west and south to north, towards Searby Road. There is a ditch that runs along the western boundary of the Site that collects and conveys flows towards the north until the ditch overtops into two gullies within the Site, that were shown, by a drainage survey, to be connected to the public surface water sewer in Searby Road.

At section 3.3.3 the FRA states the existing flow rate from the Site to be 247.1 l/s during the 100 year storm event, which was calculated using the ICP SUDS method, using MicroDrainage software. The proposed drainage system however will restrict flows generated by the 100 year, plus an allowance of 40% for climate change, storm event, to 58.2 l/s. Refer to Rodgers Leask Drainage Evidence Statement and also Drainage Strategy Technical Note 16530-RLL-24-XX-TN-S-0001 revision P02, contained within Appendix G of the Land Contamination Proof of Evidence (CD16.6).

Flows will be stored (attenuated) within SuDS basins, that will also provide a level of water treatment as well as providing amenity and biodiversity value. The drainage network will also include swales with check dams that will slow and attenuate flows.

Paragraph 181 of the National Planning Policy Framework (NPPF) states that when, "*determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere."* The proposed drainage system, incorporating SuDS, will provide a significant reduction in the rate of runoff leaving the site during higher category storms events, and is in accordance with the requirements of NPPF.

The photographs within the statement appear to have been taken during or after recent storm events, which suggests that the local drainage system becomes overwhelmed by surface water flows. It is worth noting that most of the photographs were taken during October 2023, which is when Storm Babet occurred. Storm Babet was a significant storm event, which caused flooding in Sutton in Ashfield, resulting in a Section 19 (Flood and Water Management Act 2010) report being undertaken by Nottinghamshire County Council.

The Section 19 report investigates the flood event, covering areas affected, as well as the likely causes of flooding. At section 9, the report states that during, "*Storm Babet most highway drainage assets were unable to cope with discharging the amount of water that fell within the small time period. This led to various instance of highway flooding which subsequently flooded properties due to a combination of run off and bow waves from vehicles driving through the flood water*." At section 10, the report goes on to say that in, "*some locations across Sutton in Ashfield these issues were also exacerbated by additional surface water flows from adjacent fields, farmland and green spaces."*

The Site itself is not confirmed to have flooded during this event, and the principal cause of flooding within the road network was due to highway drains becoming overwhelmed.

The new development will generate foul flows, that will outfall into the existing public foul sewers in Searby Road. The foul sewers join combined sewers further downstream, within Searby Road. As combined sewers drain surface water flows they are particularly sensitive to storm events, such events may have contributed to the flooding events described in Cllr Relf's statement, but these surface water flows will not be made worse by this development, as described above.

Severn Trent Water Ltd (STW) are the incumbent water authority and sewerage undertaker within Sutton in Ashfield, and as the July 2024 Committee Report records, STW have no objection to the planning application, subject to a condition and informative (refer to CD2.29A) attached to any permission granted.

There is a draft planning condition included within the Committee Report that is worded as follows:

The development hereby permitted shall not commence until drainage details for the disposal of surface water and foul sewage have been submitted to and approved in writing by the Local Planning Authority. These details shall include the following agreed requirements:-

1. *The onsite sewers will be adopted pursuant to a S104 Agreement (Water Industry Act).*
2. *A s106 (Water Industry Act) connection application has been approved by Severn Trent for a point of connection on the existing public system.*

The drainage scheme shall be implemented in accordance with the approved details before first occupation.

This condition will ensure that the on-site drainage network is adequately designed, and maintained over the life of the development. It will also ensure that the incumbent water authority is in agreement to the proposed foul and surface water outfalls and discharge rates.

3 Conclusions

3.1 Conclusions

Cllr Relf has produced a statement that expresses concerns that the Site is impacted by surface water and ground water, and that the application does not adequately take this into account. The Site is located wholly within Flood Zone 1 and no shallow groundwater body has been observed during site investigation and subsequent monitoring. There are localised areas within the Site that are at a Low risk of surface water flooding, which is confirmed by EA mapping. Cllr Relf's statement includes photographs taken during flood events, within the Sutton Junction Estate, however the flooding is understood to have occurred outside of the Site.

The statement identifies a potential overland flow path that crosses the Site, from the southern boundary and towards the rear gardens of properties along Searby Road, along the Site's western boundary. EA surface water flood mapping shows a sliver of Low risk surface water flood extents within this area.

The proposed drainage strategy addresses overland flow routes through the provision of land drainage swales and drainage pipes. The proposed system will provide betterment to the existing situation whereby surface water could potentially run overland through the Site.

Surface water runoff from the Site currently drains into the public surface water sewers in Searby Road, directly or indirectly. Cllr Relf is concerned that this contributes to flooding in the locality. The proposed drainage system will include SuDS that will significantly reduce the rate of runoff from the Site during higher category storm events.

The current application is at outline stage, and the draft conditions contained within the committee report, will ensure that the site proposals include a robust drainage strategy that is maintained throughout the lifetime of the development. In accordance with the NPPF, flood risk on and off site will not increase as a result of the development. The proposed drainage system has been designed in accordance with national and local planning policy and guidance.

The EA, LLFA and STW have raised no objections to the development proposals. Flood risk and drainage were not putative reasons for refusal in the Council's Statement of Case (SoC).