

# THATCHAM STRATEGIC GROWTH STUDY

## **Addendum: Rainsford Farm**

Prepared on behalf of **West Berkshire District Council** by  
**David Lock Associates** and **Stantec**

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# 1.0 INTRODUCTION

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## BACKGROUND

- 1.1 West Berkshire District Council (WBDC) is currently undertaking a Local Plan Review, planning for development up to 2037 in the district. The Local Plan Review has been published for Regulation 18 consultation, and an updated draft will be published later in 2021.
- 1.2 David Lock Associates (DLA) and Stantec were commissioned by WBDC in 2018 to look at strategic growth options for the town of Thatcham, located to the east of Newbury. This was a study of all sites submitted for the Housing and Economic Land Availability Assessment (HELAA), and assessed their suitability for supporting planned strategic growth. The findings were published as the Thatcham Strategic Growth Study (TSGS) (2020), which forms part of the evidence base for the Regulation 18 Local Plan Review and is referred to in draft site allocation policy.
- 1.3 The TSGS recommended growth at a site known as North East Thatcham, suitable for development of up to 2,500 new homes with supporting social, mobility and green infrastructure.
- 1.4 Since the Regulation 18 publication, there has been some local interest and comment regarding proposals from a consortium of landowners for a site south of the railway line, known as Rainsford Farm. This site, assessed as THA1 in the HELAA, was assessed by WBDC as not being suitable for development due to its poor performance primarily on flooding (in the context of the sequential test) and transport issues. The TSGS similarly excluded it from further consideration.
- 1.5 The Regulation 18 submissions made by the promoters of Rainsford Farm indicate that as an essential part of delivering the site, the development would fund construction of a new bridge across the railway line, allowing the level crossing to close in line with Network Rail objectives. The level crossing, it is suggested, is a source of traffic congestion and inconvenience as the barriers can be closed for long periods to allow trains to pass.
- 1.6 As a result of this interest, and as part of the assessment of growth options for Thatcham, WBDC have asked DLA and Stantec to independently reassess the Rainsford Farm site for its suitability for development, and to assess whether WBDC has made the correct decision to exclude it from the Local Plan Review process.

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## STUDY OBJECTIVES

- 1.7 This study undertakes an independent review of the Rainsford Farm site, and whether it is a suitable site for taking forward as a draft allocation within the West Berkshire District Council Local Plan Review. It has been prepared as an addendum to the Thatcham Strategic Growth Study.
- 1.8 The study has the following objectives within this overall review:
- To establish whether West Berkshire District Council undertook an appropriate application of the Environment Agency (EA) Sequential Test for flooding during their HELAA review of sites submitted, which excluded the site
  - To establish whether West Berkshire District Council appropriately assessed transport impacts as part of the HELAA review, which also excluded the site
  - To undertake a due diligence analysis of the site from published data and submitted information, across issues such as drainage, access, utilities and others
  - To review key proposals such as the railway bridge and flood mitigation measures that delivery of the site relies upon
  - To assess the capacity of the site and infrastructure requirements through a comprehensive masterplanning process
  - To assess the viability of the site based on this information, following a consistent Local Plan Review methodology
  - To assess the overall suitability and deliverability of the site based on all of the above information

## METHODOLOGY

- 1.9 The study undertakes the following steps to assess the site for its suitability:
1. A review of WBDC's HELAA approach for flooding and transport, to determine if both were applied correctly when excluding Rainsford Farm
  2. Analysis of the site's key constraints, opportunities and design parameters to inform feasibility and a masterplanning exercise. This analysis reviews key mitigation measures that the site would rely on, specifically the railway bridge and the flood mitigation swale.
  3. A masterplanning exercise based on the site analysis to determine capacity and infrastructure requirements
  4. A viability assessment, using the Local Plan Review methodology, to determine whether the site could be viably delivered given its potential capacity and infrastructure costs
  5. A final conclusion, bringing together all evidence, on whether the Rainsford Farm site is suitable for development and if WBDC should re-examine its inclusion in the Local Plan Review.



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## EXISTING PROPOSALS

- 1.10 The Rainsford Farm consortium have set out proposals for development of the site to incorporate the following:
- Up to 950 new homes
  - A new primary school
  - A healthcare facility or GP surgery
  - Local retail space
  - A new bridge over the railway line to enable closure of the level crossing
  - A fluvial flood alleviation swale
- 1.11 The site is being promoted as Colthrop Village, Thatcham.
- 1.12 Proposals have been prepared by the promoters for the design of the bridge over the railway line, and the fluvial flood alleviation swale. Strategies or supporting statements have also been prepared for:
- Access and Movement
  - Surface Water Flooding
  - Heritage
  - Ecology
  - Financial Appraisal
  - Ground Conditions
- 1.13 Two illustrative masterplans have been previously been prepared to demonstrate the capacity of the site and how it could be developed.
- 1.14 West Berkshire's HELAA process assessed the site using a Pattern Book methodology, which assessed the site as having the capacity for up to 400 units. The Pattern Book methodology assesses potential site capacities by giving an estimated net developable area and appropriate development density based on a site's size and location. For example a large edge of town site will typically be developed at a lower density and with more need for non-developable land such as open space and other infrastructure than a small town centre site. This methodology is typically used to assess the capacity of sites during the HELAA process, and similar approaches are adopted by other local authorities in Berkshire.



Figure 1: Promoters' illustrative masterplans for the Rainsford Farm site





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# 2.0

## HELAA PROCESS REVIEW

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## OVERVIEW

- 2.1 This chapter draws on technical notes prepared by Stantec and Hydrologic, who independently assessed WBDC's application of key tests in the HELAA that excluded Rainsford Farm from further consideration.
- 2.2 It is noted that a joint methodology was agreed with four of the other Berkshire Authorities (Reading Borough Council, Royal Borough of Windsor and Maidenhead, Slough Borough Council and Wokingham Borough Council) to ensure a consistent approach was applied across the Western Berkshire Housing Area. Consultation was undertaken on the methodology to ensure that the views of stakeholders (which included development industry representatives and neighbouring authorities) were considered. The full joint methodology was presented in the Berkshire Housing and Economic Land Availability Assessment (HELAA), November 2016 forming the basis of the WBDC HELAA and which is the subject of this technical note.

## APPLICATION OF EA SEQUENTIAL TEST

- 2.3 Stantec (previously Peter Brett Associates) were previously engaged by the promotor of Rainsford Farm to prepare concept Flood and Surface water mitigation strategies in 2016. As such, Stantec has appointed Hydro-Logic Services to provide independent technical review and analysis of the proposals. The summary report prepared by Hydro-Logic is included as an Appendix to this report.
- 2.4 Representations were submitted to WBDC by JSA Consulting (JSA) on behalf of the promoters of the Rainsford Farm site, the Colthrop Village Consortium. The representations object to the development options in the Local Plan based on a number of criteria. One of these was flooding and in particular the assertion that the HELAA published by WBDC in 2020 states that considerable parts of the Rainsford Farm site are located in Flood Zones 2 and 3.
- 2.5 JSA opine that the proposed allocation of North East Thatcham does not compare favourably to Rainsford Farm and that concerns regarding the deliverability of other sites within the district lead to a conclusion that Rainsford Farm meets the sequential test in order for WBDC to achieve housing requirements.

## SEQUENTIAL TEST

- 2.6 Under guidance issued by DEFRA and the Environment Agency the purpose of the Sequential Test is to ensure that "...a sequential approach is followed to steer new development to areas with the lowest probability of flooding." The guidance continues to describe that where there are no reasonably available sites in Flood Zone 1, sites in Flood Zone 2 can then be considered.
- 2.7 With regards to sites in Flood Zone 3, the guidance states that these should only be considered "Only where there are no reasonably available sites in Flood Zone 1 or 2..."



- 2.8 The guidance for Local Planning Authorities provides the graphic shown in Figure 2 below to summarise the process of the sequential test in Local Plan making.
- 2.9 During the preparation of the HELAA, WBDC have applied a methodology which considered the Flood Zone(s) in which all the sites reviewed are located. From meeting with WBDC's officers and the publicly available information on the HELAA process, Stantec understands that a Sequential approach was adopted to reviewing the sites and this is evident in Stage 1b of the HELAA where a site has been excluded from further review due to the majority of the site being located within Flood Zone 3b.

- 2.10 As the review process in the HELAA proceeds, the constraints and opportunities in terms of flood zones are noted. Where sites do not site solely within Flood Zone 1, the proportions in other Flood Zones are stated in the Stage 2b assessment where a number of sites are removed from consideration as a result of various factors which can be solely flood risk related, or in the case of Rainsford Farm there were other contributing factors.
- 2.11 In line with the Sequential Test, the Officer's review has been based on each site in its unmitigated state. So, whilst it may be technically possible to deliver a solution on a site which would enable residential development, this is not explicitly considered and it is the existing, unmitigated, state of each site which is evaluated.

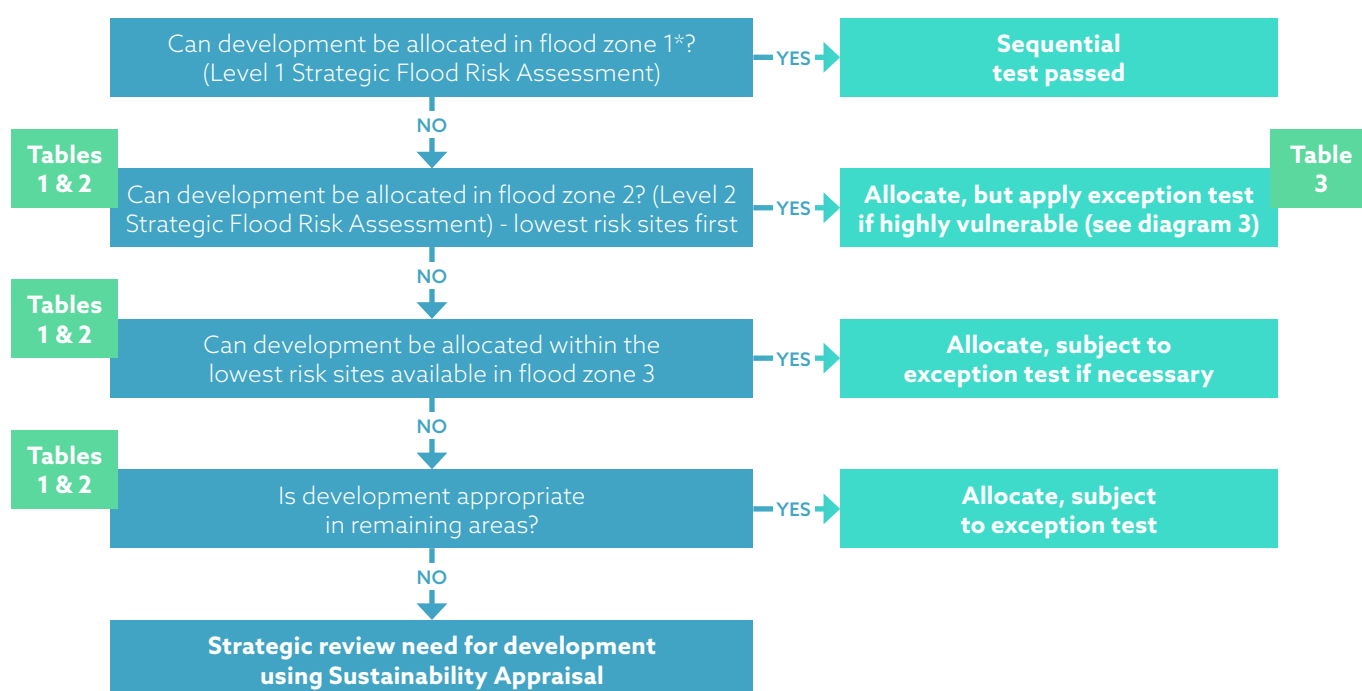


Figure 2: Process of applying Sequential Test in Local Plan making

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## RAINSFORD FARM HELAA ASSESSMENT

- 2.12 Section 2.3 of the Hydro-Logic review attached as an appendix sets out Hydro-Logic's consideration of WBDC's review of the Rainsford Farm site as part of the HELAA process. Hydro-Logic state that the WBDC drainage engineer considered the site to be partially suitable for development and that there were other contributing factors not relating to flooding which led to the site being deemed unsuitable in the HELAA assessment.
- 2.13 Hydro-Logic note that the apportionment of EA flood zones by WBDC appear appropriate and are also consistent with the modelling previously undertaken by the site promotor. WBDC subsequently estimate that the developable area of the site is 60% of the total area (as a result of the Pattern Book approach), the area allocated to residential is 20ha and that the area ultimately developable for residential development is 12ha.
- 2.14 Hydro-Logic identify that WBDC did not identify that the 20ha is on a drier area of the site, so potentially as much as 80% of the site is developable which would equate to 16ha. Despite this, Hydro-Logic consider it unlikely to be significant in the decision to classify the site as unsuitable.
- 2.15 Finally, Hydro-Logic note that none of the Rainsford Farm information available to them addresses WBDC's concerns regarding ponds and potential contamination of the old paper mill site.

## REVIEW OF RAINSFORD FARM INDICATIVE DRAINAGE STRATEGY

- 2.16 Hydro-Logic has considered the Flood Risk mitigation strategy prepared by Stantec (formerly PBA) prepared in 2016. The full review is in the Technical Note appended. Hydro-Logic confirm that the principle of the mitigation is reasonable but raise issues which would require addressing if the proposals were to be further developed, including buildings within an area at risk of flooding, although it is noted that this is on a concept layout which was produced following the development of the mitigation strategy and the layout has not been updated to account for this.
- 2.17 The Surface Water Concept report does not provide a detailed strategy but suggests high level concepts and principles which can be used in managing risk from Surface Water. Significantly, Hydro-Logic identify that the concepts and principles listed do not match with the concept layout as shown as the density of the layout does not appear to allow sufficient area for open storage features.

## CONCLUSION

- 2.18 This Technical Note has considered the response from JSA to the Reg.18 Draft Local Plan for West Berkshire relating to flood risk and drainage. From discussion with WBDC officers and review of the HELAA site selection process, it is considered that the officers have given due consideration to the principles of the Sequential Test in eliminating sites.
- 2.19 An independent review of the Flood Risk and Surface Water strategies prepared for Rainsford Farm has found them to have sound principles. However, the concept layouts prepared to date do not completely reflect the demands required to accommodate the strategies.

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## APPLICATION OF TRANSPORT ASSESSMENT

2.20 This section considers the way in which highways and transport circumstances were considered by WBDC in their assessment of sites evaluated in their HELAA of December 2020.

### STAGES OF METHODOLOGY

2.21 The HELAA follows five stages which are detailed below, providing a comprehensive review of all the sites.

- Stage 1: Site Identification
- Stage 2: Site and Broad Location Assessment
- Stage 3: Windfall Assessment
- Stage 4: Assessment Review
- Stage 5: Final Evidence Base

2.22 The primary filtering of the sites in respect of highways and transport occurs at Stage 2b, also classified as 'Suitability'.

### REVIEW OF STAGE 2B 'SUITABILITY'

2.23 For the version of the HELAA uploaded to WBDC's website, Stage 2b is included within Appendix 4 which is a spreadsheet presenting the analysis. At Stage 2b the suitability of 270 sites were evaluated.

2.24 Within the Stage 2b analysis the Highways review is broken down into three further criteria:

- Access: Consideration of how access can be gained to the site.
- Local Highway Capacity: A high level consideration of how development of the site would impact the local highway network.
- Strategic Road Network: Comment from Highways England on the potential impact of the site on the SRN.

### ACCESS

2.25 Stantec consider that the level of detail which the WBDC highways engineer has considered the access is appropriate for the HELAA exercise. The engineer appears to have evaluated the key considerations for access, such as ability to connect to the adopted highway, visibility requirements and potential to connect to neighbouring areas on foot and by cycle.

2.26 The comments offered by the highway officer are constructive and of a level suited to high level feasibility assessment of a site. The comments state technical and practical considerations for access to be delivered and where the officer feels unable to support a site the reason is clearly stated.

2.27 Where access strategies have been subject to previous planning applications and found suitable, they appear to have been given some weight in the officer's comments.

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## LOCAL HIGHWAY CAPACITY

- 2.28 The officer's consideration of impact appears to be largely based on knowledge of the highway network and the development potential which is suggested for the site. Stantec consider this to be reasonable for this stage of assessment as a more evidence-based evaluation would require a significant amount of traffic modelling analysis, which is not appropriate for the volume of sites which are still under consideration at Stage 2b.
- 2.29 In certain circumstances (typically related to development quantum) it is identified that a planning application for a development will require a Transport Assessment. The officer also states that in some cases it would be expected that proposals would be required to use WBDC's VISSIM model in order to assess their impact.
- 2.30 Where the officer identifies that there are potential issues relating to highway capacity, there is no presumption made as to how those issues should be addressed and therefore WBDC do not stray into looking at how deliverable the site would be with off-site mitigation provision. This ensures that sites are dealt with consistently.

## STRATEGIC ROAD NETWORK

- 2.31 It appears that all consideration of impact on the SRN has been made by Highways England, with comments fed back via WBDC. The majority of sites are simply stated to be unlikely to materially impact the SRN.
- 2.32 In instances where Highways England consider that there may be a material impact as a result of the proposals, they have that a planning application is accompanied by suitable assessments.

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# OVERALL CONCLUSIONS

## CONCLUSION

- 2.33 Stantec has considered the review of highways and access undertaken by WBDC when accessing sites as part of the HELAA process. From the information available to Stantec it appears that the highways officer has fairly reviewed each site based on the information submitted and utilising previous planning application information where available.
- 2.34 At the HELAA stage, it is not for WBDC to prejudge what measures may be possible and/or necessary to make a site acceptable from a highways perspective. From the information available to Stantec, WBDC appear to have adhered to this approach.
- 2.35 WBDC correctly assessed and excluded Rainsford Farm during the HELAA process, applying its methodology fairly and consistently. As such, Rainsford Farm is a less suitable site for development than others available to WBDC and should not be progressed within the Local Plan Review.
- 2.36 Notwithstanding this finding, this study will proceed to a site analysis, masterplanning and viability assessment exercise to assess in more detail if the site is suitable and viable for development.





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# 3.0 SITE ANALYSIS

## CONTEXT

- 3.1 The Rainsford Farm site is located to the south-east of Thatcham, approximately 1.5km from the town centre at its western end. The site stretches for approximately 1.1km east-west along the Kennet and Avon Canal, on the southern side of the railway tracks that currently form the southern boundary of the Colthrop Industrial Estate. For much of its length, the site is approximately 350m wide north-south, tapering to a point at its western end.
- 3.2 Thatcham railway station is located almost adjacent to the site at the north-western end. The Kennet & Avon Canal forms the northern boundary, and the River Kennet forms much of the southern boundary. The eastern boundary runs north-south approximately in line with Colthrop Lock and Mill.
- 3.3 The site is slightly distanced from the existing settlement boundary of Thatcham due to the railway tracks and Kennet & Avon Canal.
- 3.4 At a strategic level the site sits within the Kennet Valley, although within the flood plain, below the town's slightly raised position. Although it would continue the town's east-west growth, it would do so by crossing the canal and railway lines, an abrupt change in development pattern.
- 3.5 To the south of the site, across the flood plain, slopes rise towards Greenham Common.

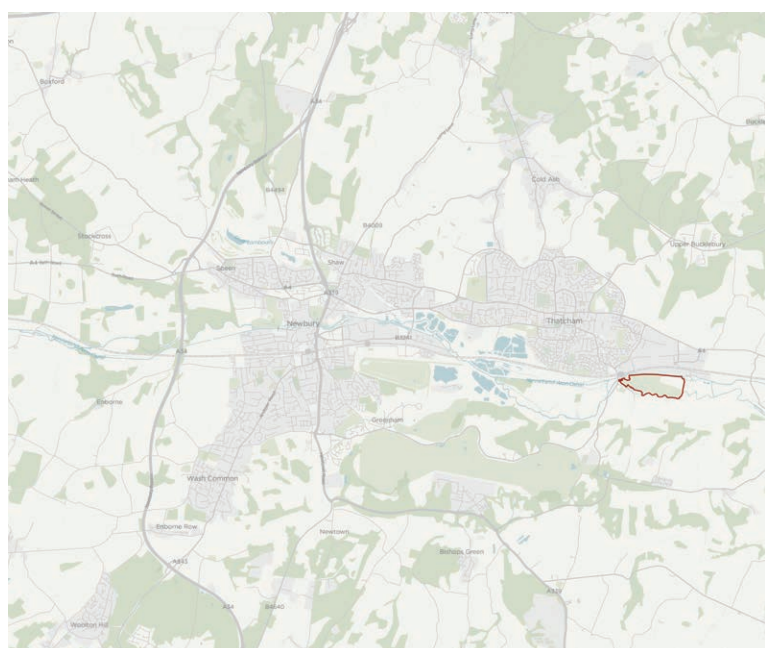


Figure 3: Site in the context of Newbury and Thatcham

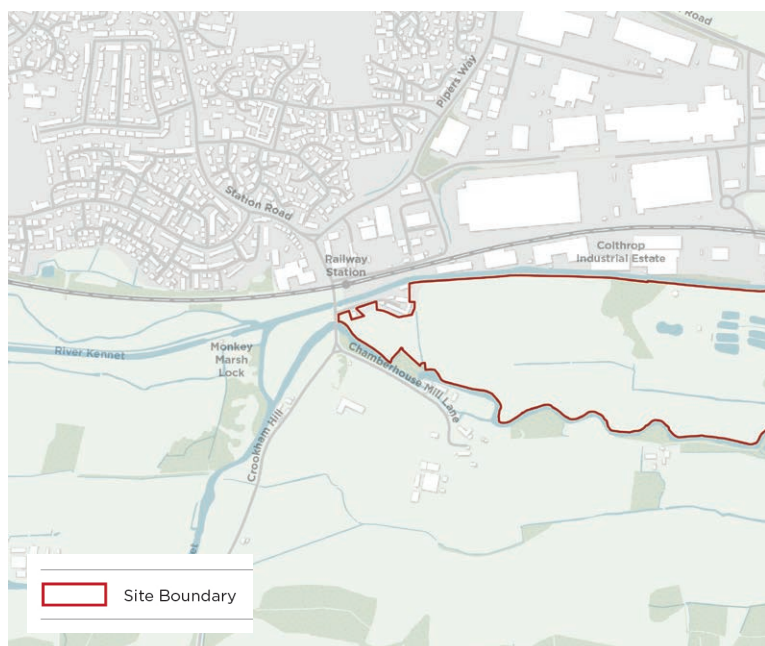


Figure 5: Site location plan





Figure 4: Site in relation to the town centre (centre) and railway station (SE)

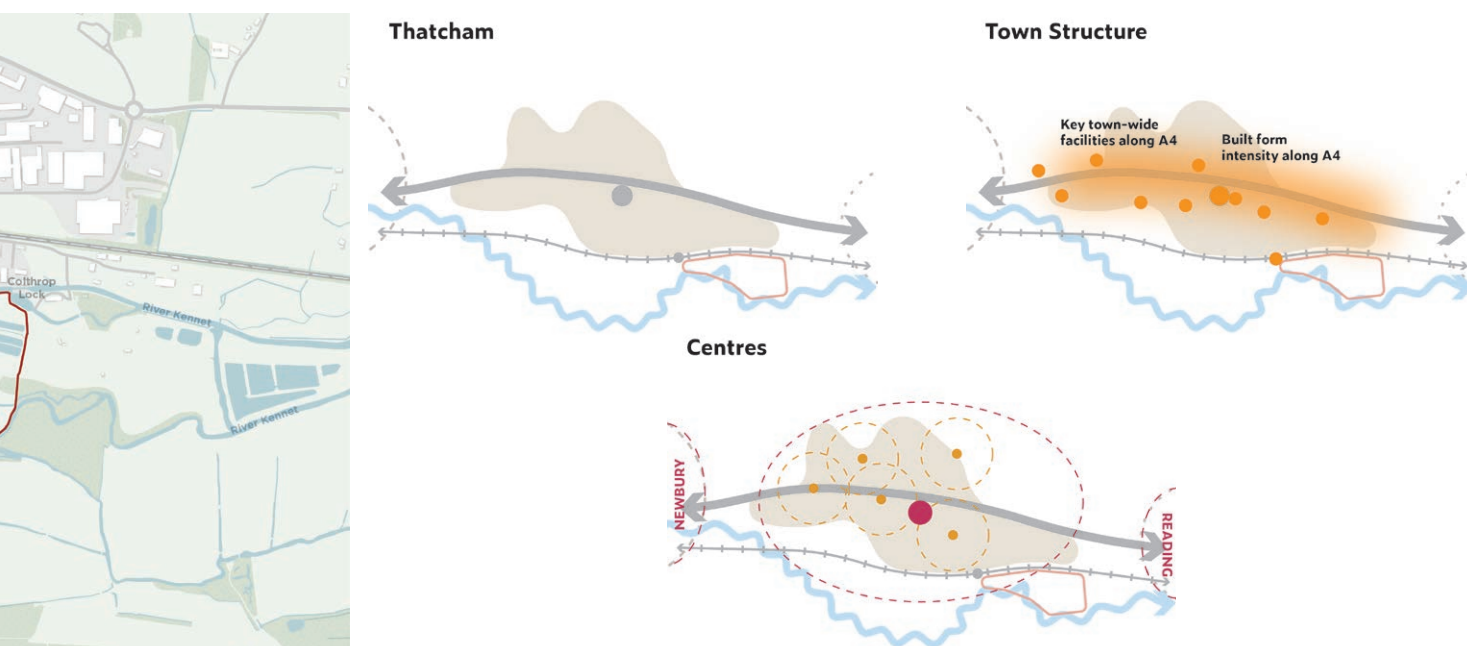


Figure 6: Diagrams showing development structure of Thatcham along river valley and to the north of the railway line

## LAND OWNERSHIP, LAND USE AND PLANNING

3.6 The site is being promoted jointly by a consortium of landowners, and has been promoted in the WBDC HELAA as site THA1. Figure 7 is a plan showing land ownership.

3.7 Figure 8 shows an extract of land ownership around the western end of the site, illustrating a patchwork of ownership that would need to be considered in order to deliver acceptable access arrangements and connections to the network including the proposed bridge over the railway line.

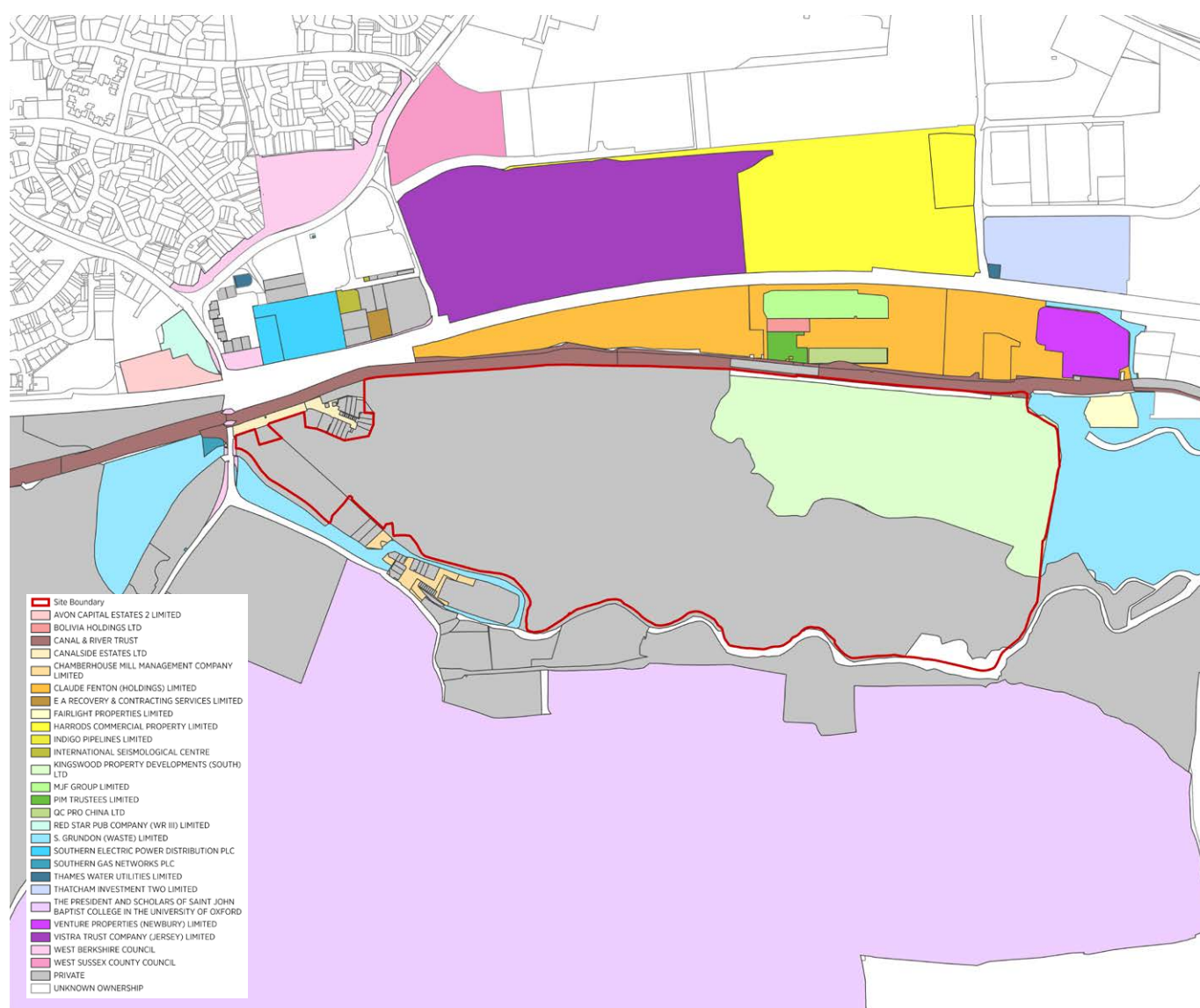


Figure 7: Land ownership of the site



- 3.8 To date, the site has not had planning applications for development other than for its use as a gravel extraction facility.
- 3.9 The entirety of the site is outside of the existing settlement boundary of Thatcham and is separated by the gap of land between the railway line and the Kennet and Avon Canal. It falls within the Thatcham Town Council parish area, and in the ward of Thatcham Colthrop & Cookham.

- 3.10 Former land uses on the site include extractive activities, and land associated with the former Paper Mill (closed since 1971). Some buildings and hardstanding remain from this period. The site is currently used for ad-hoc agriculture activities but is largely redundant.

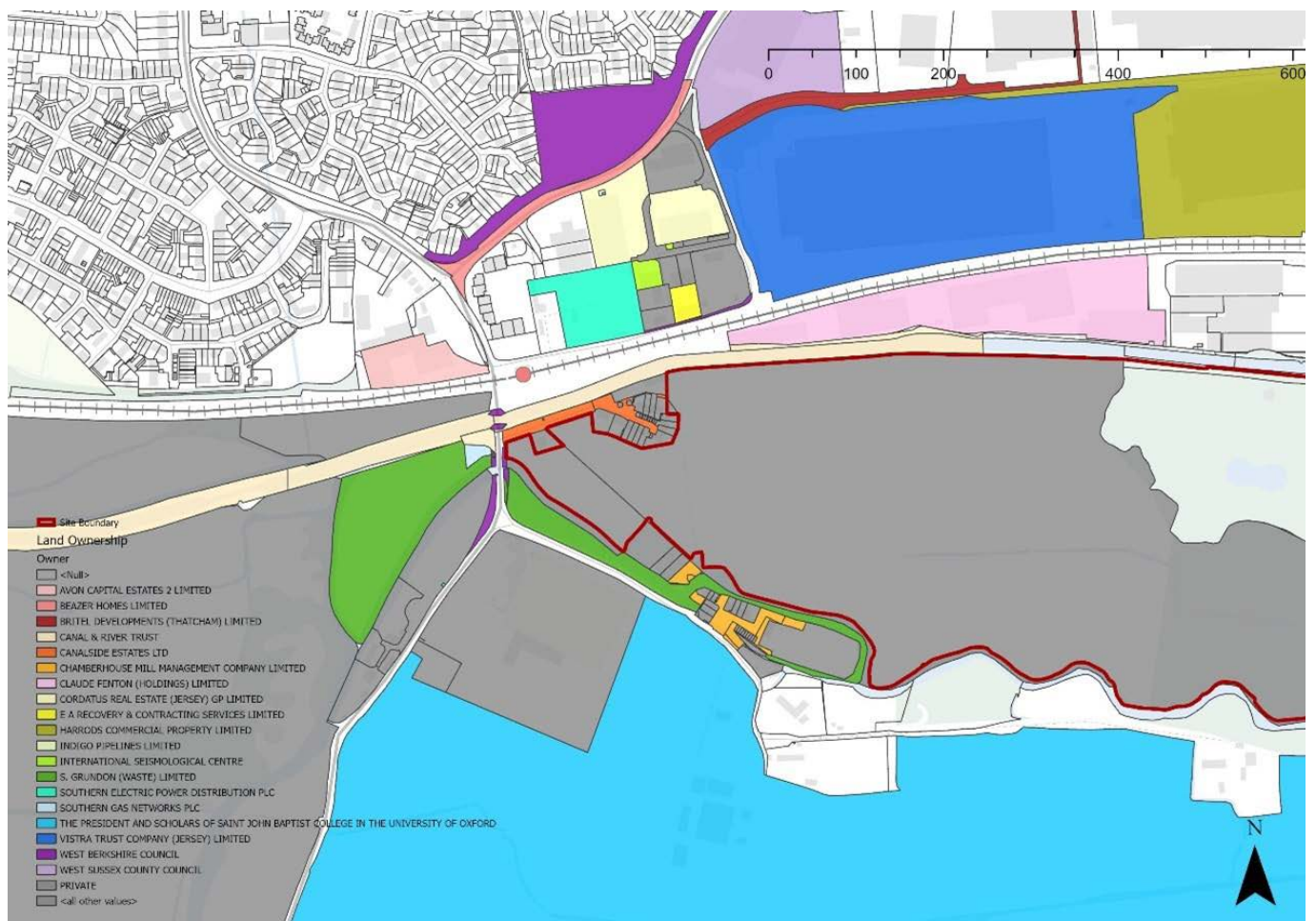


Figure 8: Land ownership detail for western end of site

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# ACCESS AND TRANSPORT

## SUSTAINABLE TRANSPORT

- 3.11 Almost adjacent to the north-eastern corner of the site is Thatcham railway station, which has regular services to Newbury, Reading and London. The line has recently been electrified which provides improved journey times, but requires any bridge crossings to clear the overhead line equipment (OLE) with sufficient clearance.
- 3.12 The northern boundary of the site forms part of the Sustrans National Cycle Network, although it is a largely unimproved towpath. A foot bridge runs over the railway line and connects to the far eastern end of the site via the Colthrop Lock, running into the Colthrop Industrial Estate. It is unlit and runs through service yards between the railway line and canal.
- 3.13 The Sustrans National Cycle Network route runs directly to the town centre along painted cycle lanes, providing a direct active travel route via the existing railway level crossing.
- 3.14 There are currently no frequent bus services near to the site.

## HIGHWAYS

- 3.15 The site as promoted is inaccessible from the existing highways network, and requires additional land to deliver access. This would likely be from the west with a bridge over the River Kennet (and SSSI) towards the junction between Crookham Hill and Chamberhouse Mill Lane. The land on the opposite bank that would be required has not been promoted as part of the HELAA process.
- 3.16 Part of the site does abut the existing highways network, but at less than 15m length and with the proximity of the existing Kennet Bridge, and a private drive access to the Rainsford Farm Mews development, it would not be feasible to deliver access through this point.
- 3.17 Given the potential scale of development, it would be necessary to deliver two accesses into the site to satisfy safety and emergency access requirements. Typically a second access is required when development of more than 300 homes is proposed.

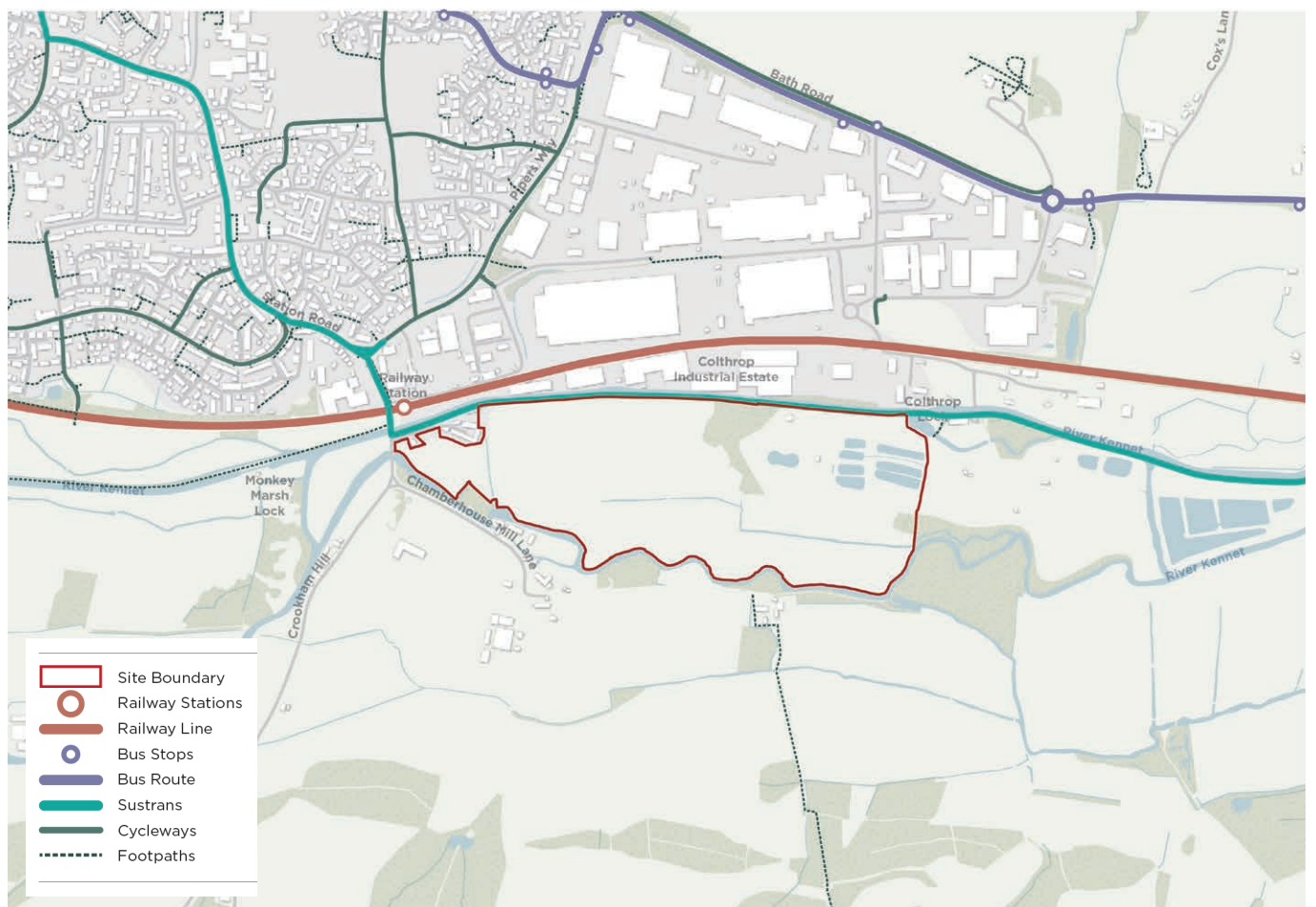


Figure 9: Sustainable modes of transport near the site

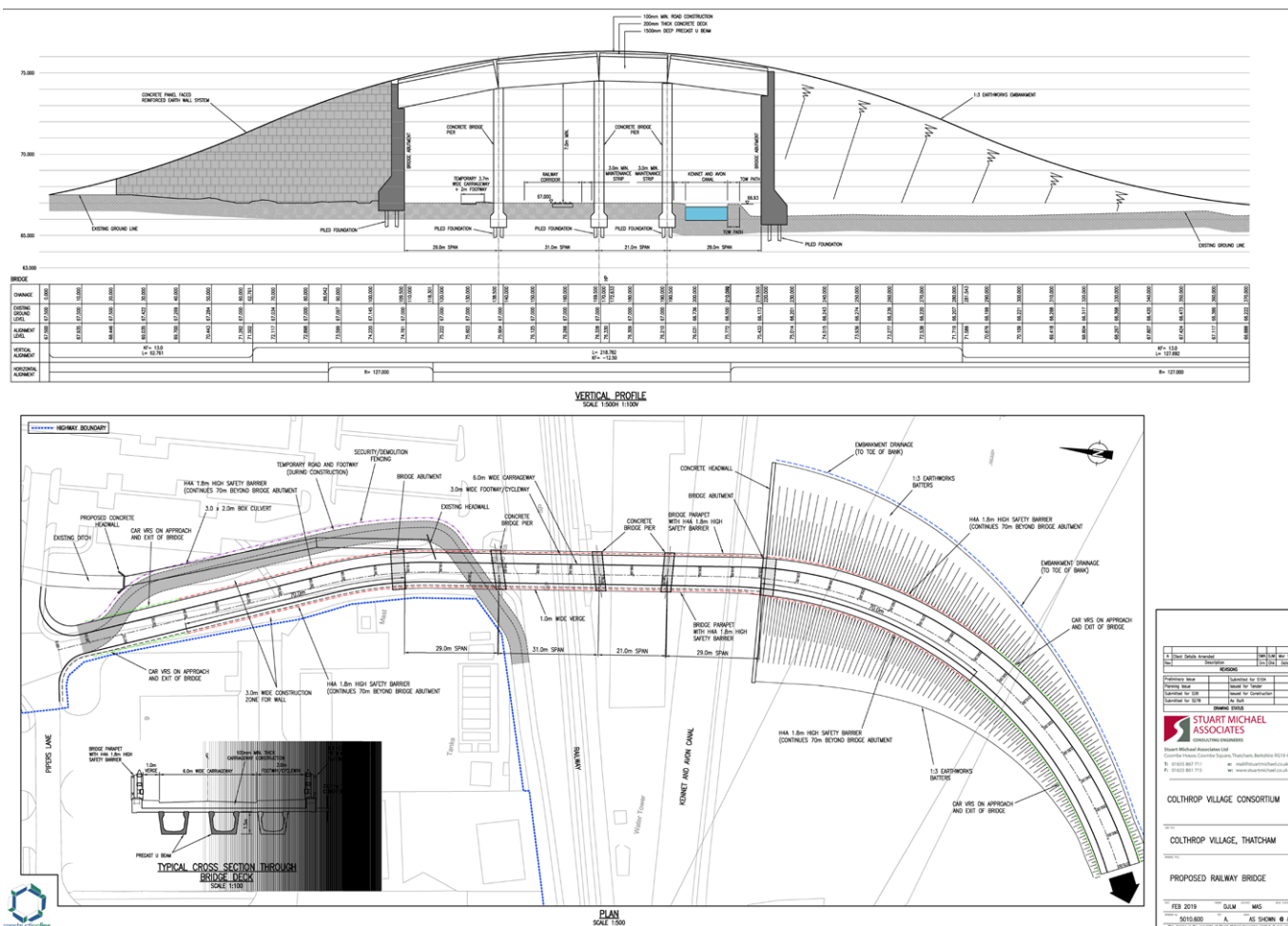


Figure 10: Railway Bridge Section and Plan

## RAILWAY BRIDGE PROPOSALS

- 3.18 The site promoter has put together proposals for a bridge across the railway line, from Piper's Lane crossing the railway and canal, landing in the site, and then providing onward access to the junction with Crookham Hill and Chamberhouse Mill Lane. A single point of access into the body of the site is then proposed.
- 3.19 The bridge is considered an essential part of the proposals to enable development to the south of the existing level crossing, which it is claimed causes significant inconvenience and delay in Thatcham due to the length of time it is closed, especially during peak periods. Development to the south of the level crossing without the bridge would exacerbate the issues, and as such delivery of the bridge is crucial to development at Rainsford Farm.

3.20 The current plans, drawn up in 2016, require land from a number of landowners to the north of the railway line, and between the railway line and the canal. It would also require negotiation with Network Rail to secure permission for closures to the line to enable construction work, as well as an easement to cross. Although Network Rail are as a matter of policy keen to remove level crossings from across their network, Thatcham has not been identified as a priority crossing to remove from a safety point of view. It is not known what stage negotiations between the promoters and Network Rail have reached.

3.21 When access across Network Rail land is required to deliver new housing development proposals, it is typical for Network Rail to seek to agree a percentage of the land value uplift created by this arrangement, with a starting position of 50% of the value uplift.



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3.22 Closure of the level crossing would also remove accessible level access between platforms at Thatcham Railway Station. There is a footbridge, but it does not have a lift in place to provide access for those with limited mobility. Replacement of this facility would be required to comply with equal access legislation, most likely via new lifts on the railway platforms. Alternatively pedestrian and cycling access could remain at the level crossing, but this would not fulfil the safety objectives of a level crossing closure.

3.23 A new bridge also raises questions about the wider impact on the highways network, with a concern that opening a less restricted link across the railway would increase traffic loading and induce new traffic on the rural lane up Crookham Hill towards the south of Newbury and the business parks near Greenham Common. Further traffic modelling would be needed to confirm this, as it could present a highways safety issue as well as undermine sustainable development goals.

3.24 A detailed technical appraisal of the bridge proposals is appended to this document as a technical note. In summary, the 2016 proposal has the following issues which would need addressing and re-costing to provide a scheme that is compliant with modern design standards:

- The proposed carriageway width of 6.0m would have to be a minimum of 6.5m to accommodate buses, potentially up to 7.3m.
- The proposed footway width of 1.0m would need to be widened to a 2.0m wide footway to provide pedestrian amenity.
- The proposed gradient of 1 in 11.5 is not accessible for pedestrians and cyclists and may not be acceptable under the Equality Act. A maximum gradient of 1 in 20 would be preferable.
- The proposed bridge design appears to be very close to or overlapping with an existing OLE mast.

- No alterations for Pipers Lane have been proposed, but the existing road does not appear suitable for use as an upgraded vehicle route without improvements.
- Access arrangements for the unit currently occupied by the Thatcham Motor Company appear unresolved, with this unit losing direct access to the highway.
- It is also noted that the proposed swale conflicts with the proposed railway bridge abutments, requiring either a redesign of the swale or an increased span on the railway bridge.

3.25 The proposal's technical reports suggest a construction cost of £12m, however this does not include the following potential additional costs that bring the total to £20m:

- Professional fees at 15% of constructed cost: £1.8m
- Highway authority inspection fees at 8%: £1m
- Highway authority commuted sum at 35%: £4.2m
- Network Rail incurred costs (estimate): £1m

3.26 Additional costs that could be incurred but have not been costed are:

- OLE changes to accommodate bridge alignment
- Network Rail Property shared value for agreeing land access over the railway
- Utility diversions due to stopping up
- Other land costs
- Costs associated with floodplain compensation – the southern embankment has a significant footprint within the floodplain. Consideration may be required for an additional southern span on the viaduct to avoid this.
- Costs associated with providing a bridge that has a more accessible approach gradients than the proposed 1 in 11.5.

## RECREATIONAL ACCESS

- 3.27 The Kennet and Avon Canal towpath is a public right of way, running east-west, and connecting the site to the nature reserve to the west. To the south of the site on the opposite side of the Kennet two footpaths run up the slopes towards the south, but they are inaccessible from the site. No public rights of way penetrate the site.

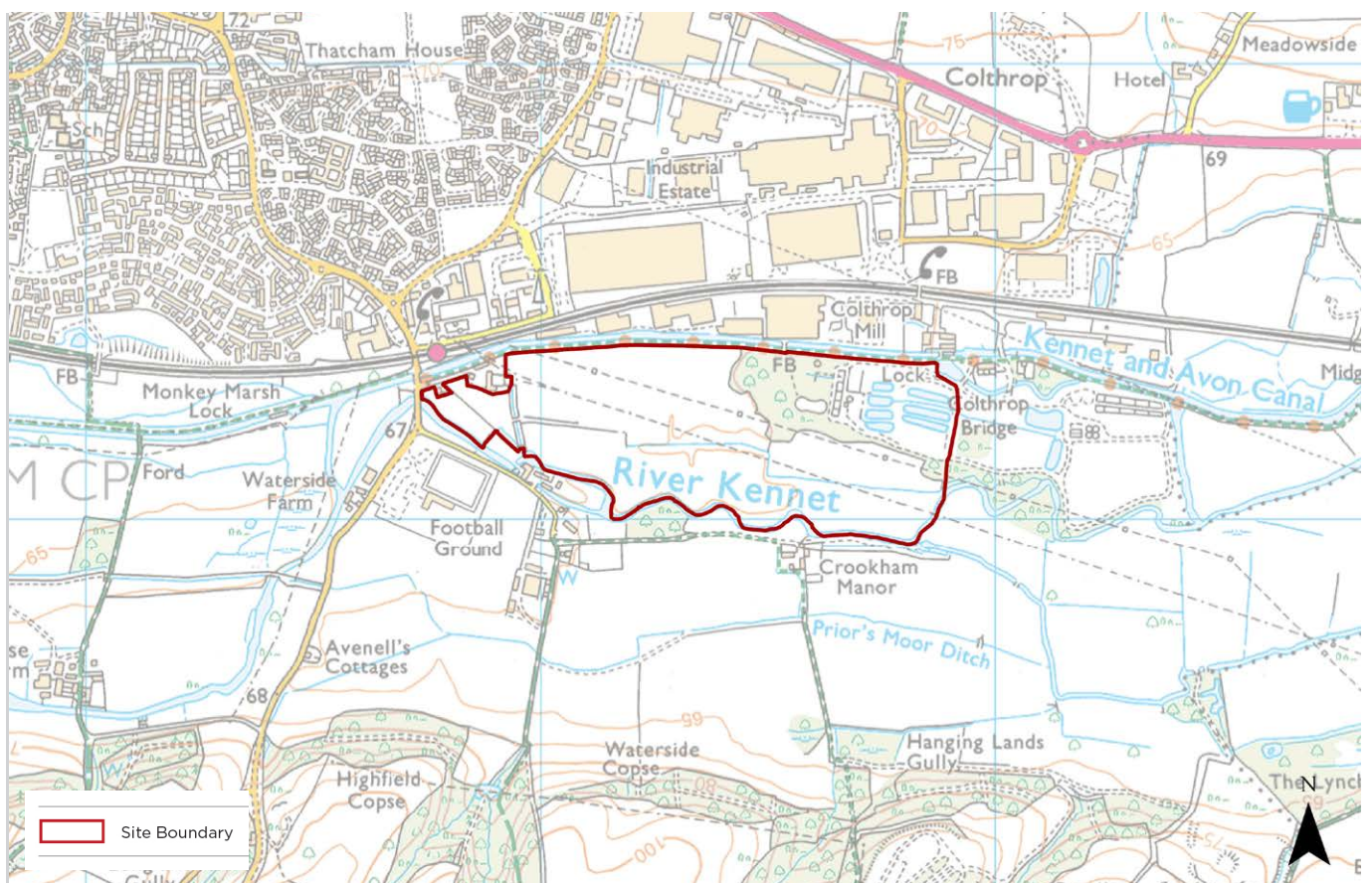


Figure 11: Ordnance Survey map showing public rights of way

## ACCESSIBILITY

3.28 The site has the potential for good accessibility to the town centre and railway station by walking and cycling, as shown on the accessibility isochrone maps below in Figures 12 and 13. These plans are based on the existing network and do not account for additional accessibility that would occur with development within the site.

3.29 These accessibility analyses do not account for the quality of the connection between site and destination, so gaps in provision of cycling or walking facilities must still be considered.

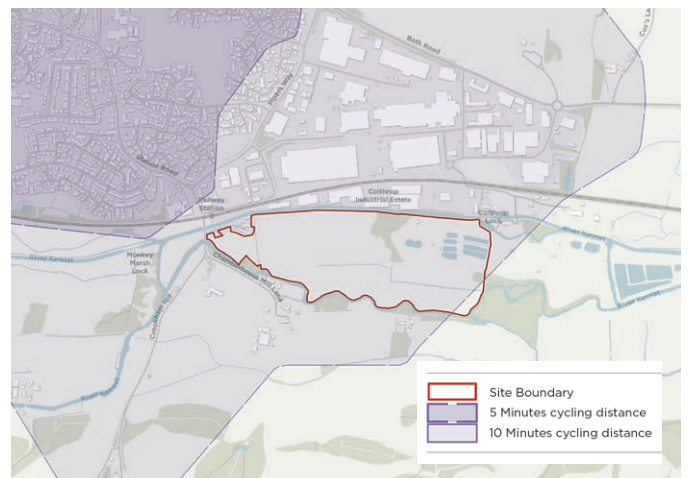
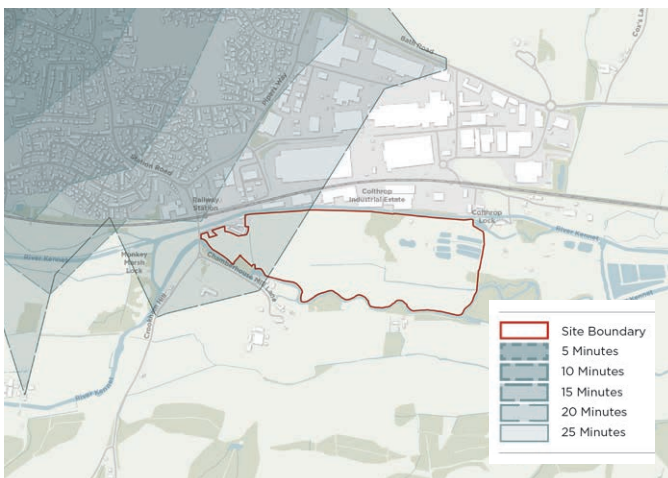


Figure 12: Accessibility of the site from the town centre by walking (left) and cycling (right)

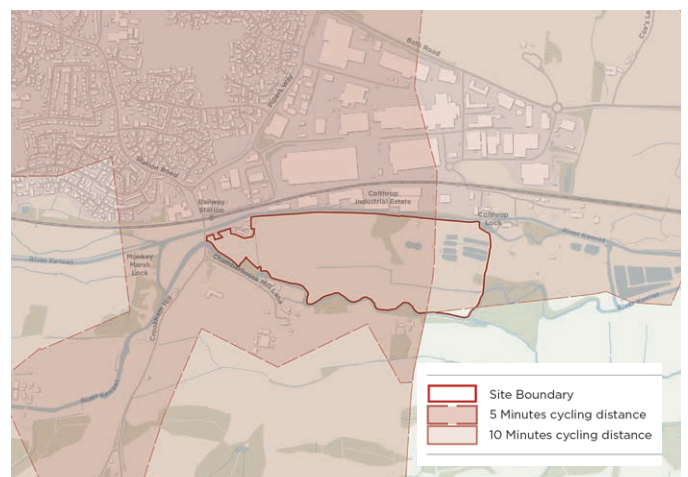
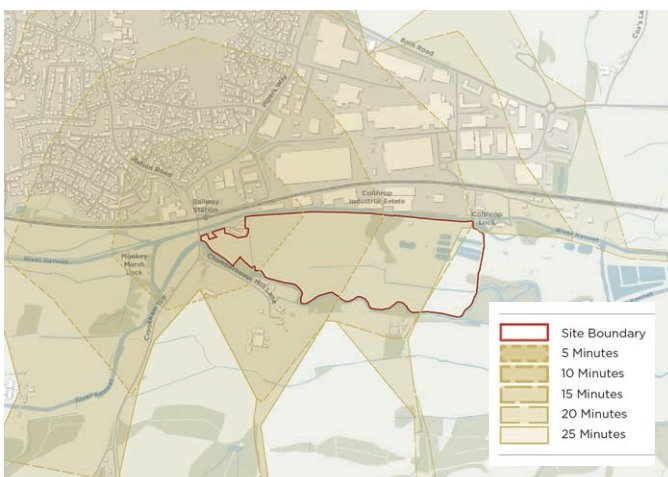


Figure 13: Accessibility of the site from the rail station by walking (left) and cycling (right)



## TOPOGRAPHY, LANDSCAPE AND VIEWS

3.30 The site is flat and sat within the wide valley bottom of the Kennet Valley. There are views into the site from Crookham Hill and the main road near the level crossing. Other views from the immediate south are limited by existing vegetation, and from the north by vegetation and existing buildings.

3.31 This area is not within a protected landscape designation, is not visible from and does not form part of the North Wessex Downs AONB setting.

3.32 The landscape is open and flat, with long views up and down the valley, overlooked by the slopes of Crookham Hill to the south, which lead up towards Greenham Common.

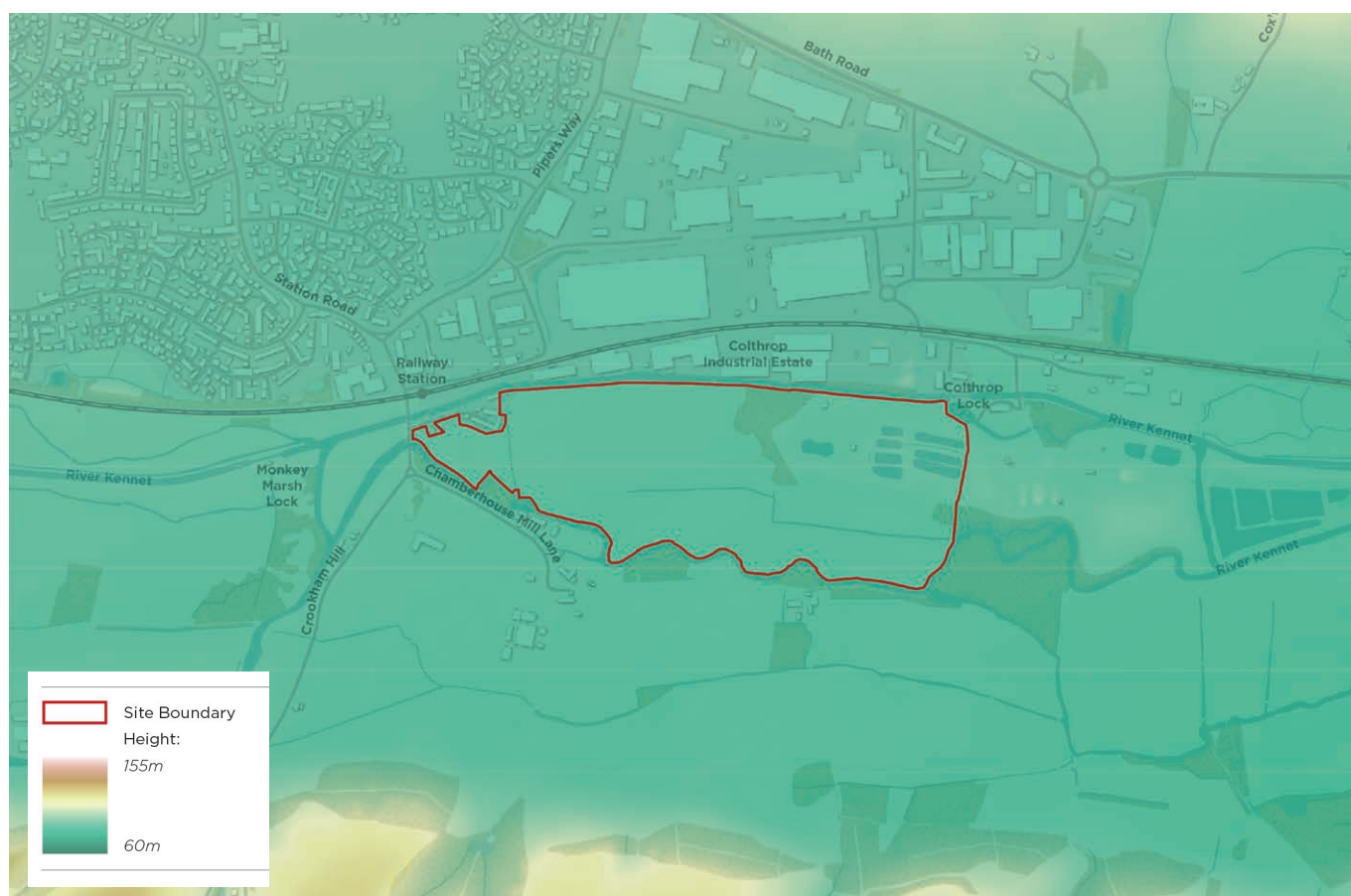


Figure 14: Site topography

# FLOODING AND DRAINAGE

## FLUVIAL FLOOD RISK

- 3.33 Much of the site is covered by Environment Agency (EA) Flood Zones 2 or 3, indicating a 1 in 1000 annual flood risk or 1 in 100 respectively. The site sits within the flood plain of the River Kennet.
- 3.34 Although EA modelling is national and high-level, more detailed modelling indicates that the site is still at high risk of flooding without mitigation measures.

3.35 Flooding events are likely to increase in frequency and severity due to the effects of climate change. The Environment Agency has recently published updated guidance advising assessments based on a +70% uplift in flood event severity, a rise from the previous +35%.

3.36 As noted in the introduction section of this report, the site has been excluded from the Local Plan allocation process by correct and appropriate use of the EA's Sequential Test for locating development outside of areas liable to flood. The site fails as there are suitable alternatives elsewhere in the district that can be developed without mitigation measures being required.

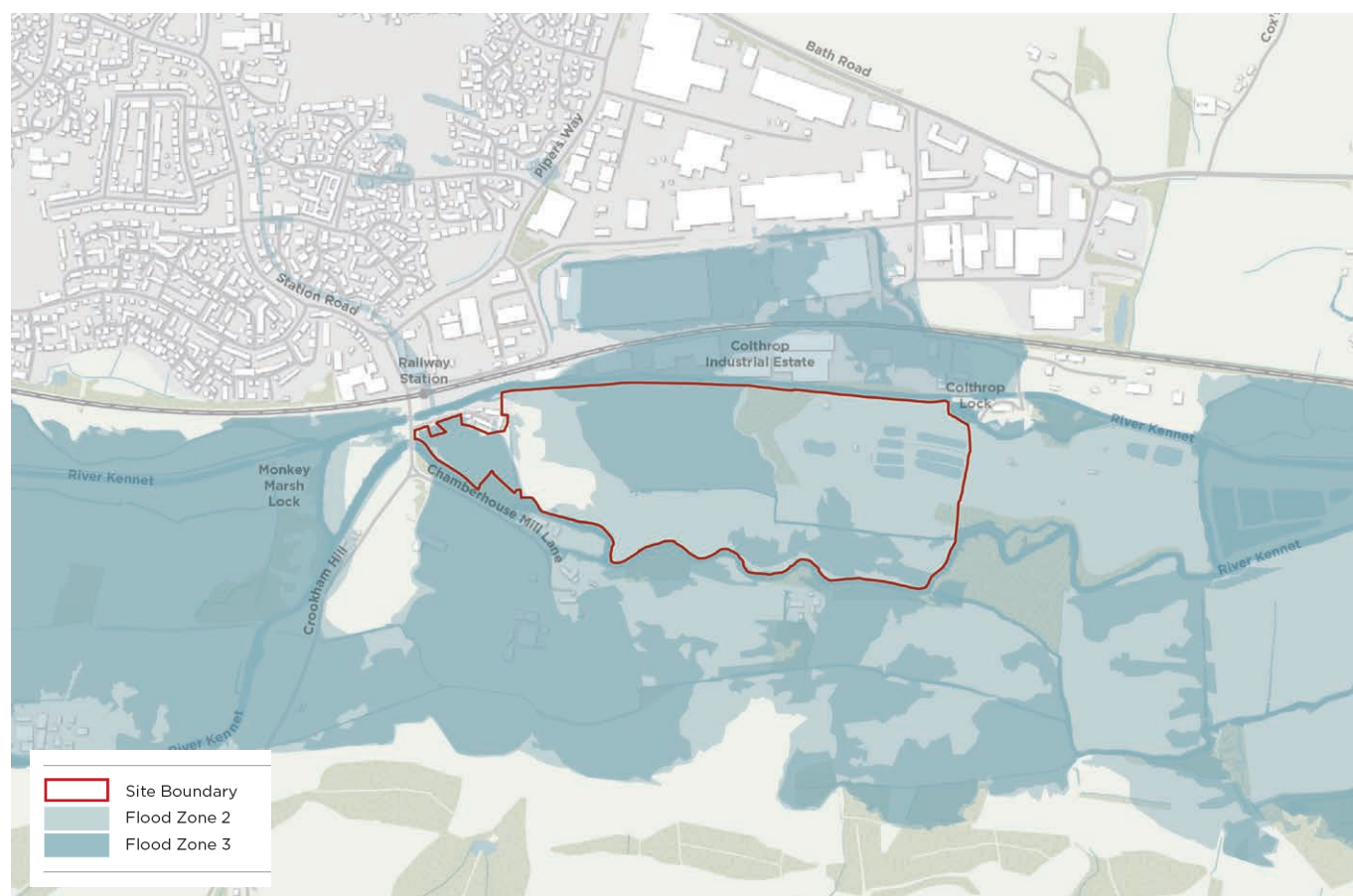


Figure 15: Fluvial flood risk (EA data)

## PROPOSED MITIGATION

- 3.37 Proposals for the site have incorporated an engineered scheme to alleviate the flood risk and modify the Flood Zone 3 area. This consists of a shallow swale dug through the area of highest risk, deep enough to accommodate floodwater volumes for 1 in 100 +35% events. This area could be used for open space when not flooded.
- 3.38 Following an independent review by Hydro-Logic, this proposal is broadly considered sound as an approach to altering the Flood Zone 3 area to enable development on the site, and should be considered an essential part of delivering the site.
- 3.39 An assessment of the proposal suggests the following considerations when masterplanning the site:
- Higher EA assessment requirements would mean that the plans would have to be revisited prior to a planning application
  - Increasing the standoff between the projected Flood Zone 3 area and potential development would be necessary to incorporate surface water flooding mitigation measures (noted below).
  - Increasing the standoff between the projected Flood Zone 3 area and potential development would provide additional guarantees given the increased climate change uplifts, as well as reduce concerns about overtopping in the downstream part of the scheme that are present in the model.
- 3.40 The flooding swale scheme has not been assessed for its potential impact on the nearby SSSI on the River Kennet.
- 3.41 It is also noted that the proposed swale conflicts with the proposed railway bridge abutments, requiring either a redesign of the swale or an increased span on the railway bridge.



Figure 16: Proposed fluvial flood mitigation strategy with modified 1 in 100 flooding event area



## SURFACE WATER

3.42 The site is at low risk from surface water flooding on its own, and attenuation drainage measures along with modern Sustainable Drainage Systems (SuDS) would be likely to enable it to meet greenfield runoff rates. Attenuation would be required rather than infiltration due to the high groundwater levels across the site, and this would have a land take implications, reducing residential densities and land available for development.

3.43 There is also concern associated with the existing Thames Water surface water drainage channel. The proposal is to reroute this water into and through the swale to the river. The channel carries surface water runoff from the urban area of Thatcham and the flow was not fully assessed as part of the flood risk management plan. If the swale is being used for floodplain flow and storage it will not be available for surface water conveyance. Surface water management should be placed outside of the modified Flood Zone 3 (the swale) as surface water and fluvial flooding events are likely to occur at the same time. The existing proposals do not account for this, and the proposed concept plan does not appear to locate surface water management features.



Figure 17: Surface water flood risk (EA data)

## BIODIVERSITY AND GREEN INFRASTRUCTURE

3.44 To the immediate south of the site is the River Kennet, a designated Site of Special Scientific Interest. This is a national designation of the highest importance. Along with the River Lambourn which flows into the Kennet upstream from Newbury, both rivers are classed as JNCC type III (base rich, low energy lowland rivers), and noted for their high quality and diverse habitats, supporting a range of aquatic vegetation, aquatic invertebrates, bird and fish species. The River Lambourn is also designated as a European Special Area of Conservation (SAC).

3.45 Natural England (NE) maintain a series of Impact Risk Zones around SSSIs and other designated natural assets, within which certain types of planning application and development NE is a statutory consultee. For this site, a 50m standoff from the SSSI is present and should be considered highly sensitive. Although the designation is for the river itself, issues of runoff water quality, bank erosion and other contamination suggest a 50m buffer is sensible and compatible with Natural England's river restoration plan.

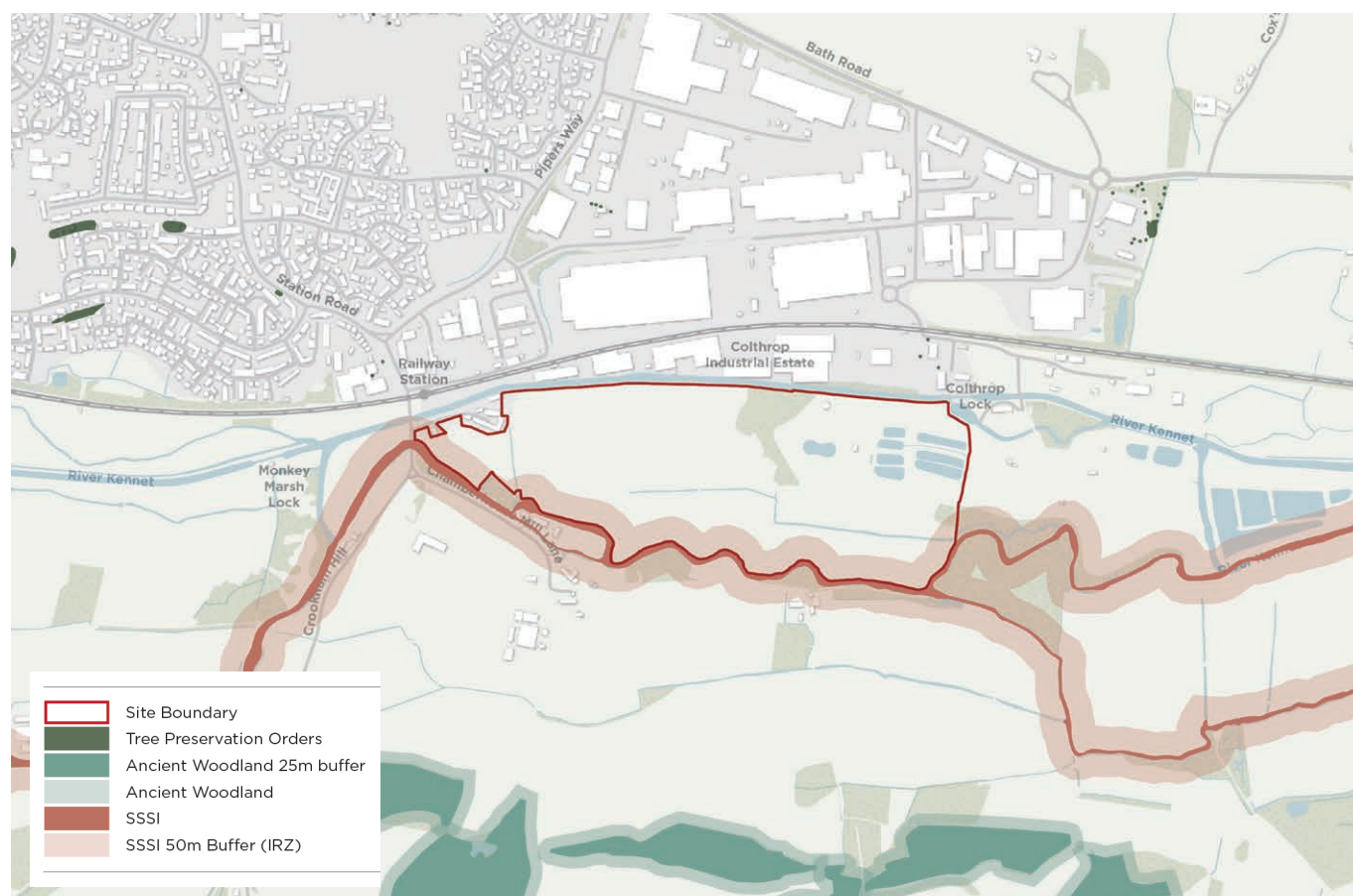


Figure 18: Biodiversity, protected sites and other green infrastructure assets plan



3.46 The proposed access into the site from the east would require a new bridge over the SSSI, with potential impacts on the bank and river.

3.47 The site is wholly within a Biodiversity Opportunity Area for the Kennet Valley, aiming to improve connectivity between habitats, as well as increase the variety and provision of natural habitats within the area.

3.48 There are no Tree Preservation Orders on the site. The slopes to the south host a number of Ancient Woodlands but these are at some distance.

3.49 On site there is a range of existing green infrastructure, including some tree lines, existing hedgerows and increasing tree and plant cover towards the east, connecting to a larger wooded area around the extractive activities further east.



Figure 19: Aerial photo showing on-site green infrastructure

## HISTORIC ENVIRONMENT

- 3.50 There are no listed buildings or other designated heritage assets on the site.
- 3.51 The nearest Scheduled Ancient Monument is Monkey Marsh Lock, to the west.
- 3.52 There are no Historic Landfill sites recorded on the site, however, there is a history of industrial use within the site associated with the former Paper Mill, and a number of buildings remain. A number of former ponds associated with extractive activities are present at the eastern end of the site.

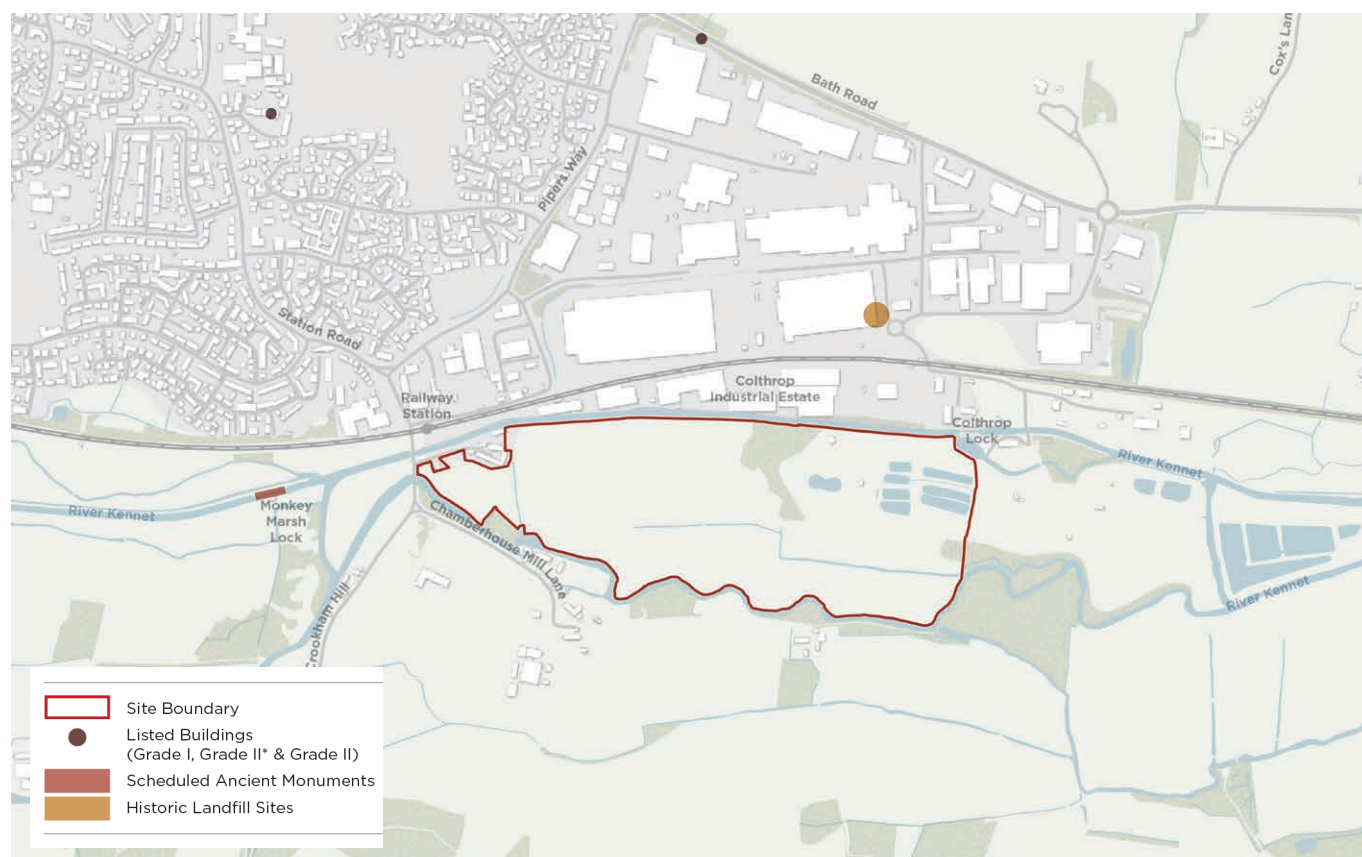


Figure 20: Historic assets and land use near the site



## FACILITIES AND SOCIAL INFRASTRUCTURE

- 3.53 The nearest primary school to the site is located around 1km to the northwest of the western edge of the site, and the nearest secondary school (Thatcham's only secondary school), is located a similar distance to the north.
- 3.54 A small parade of shops, including a GP's surgery, pharmacist and local supermarket, is approximately 600m NW of the western edge of the site.
- 3.55 Access to all facilities in Thatcham requires traversing the level crossing or alternative infrastructure that would be put in place by the development. If the level crossing were closed an alternative route have to be provided, although this may increase the walking distance, especially if it were to be over the proposed bridge.
- 3.56 The promoter's proposals include space for a new primary school, small local centre and GP surgery, although this is predicated on the provision of 950 homes on site to support them. If this capacity fell significantly such services would not be viably supported on site, and all service provision would be located off-site across the railway lines in the existing town. This would increase the level of journeys outside of the site (reduced internalisation), potentially leading to increases in vehicle traffic if not all of these journeys were undertaken by active means (the only feasible sustainable mode for such journeys from this location).

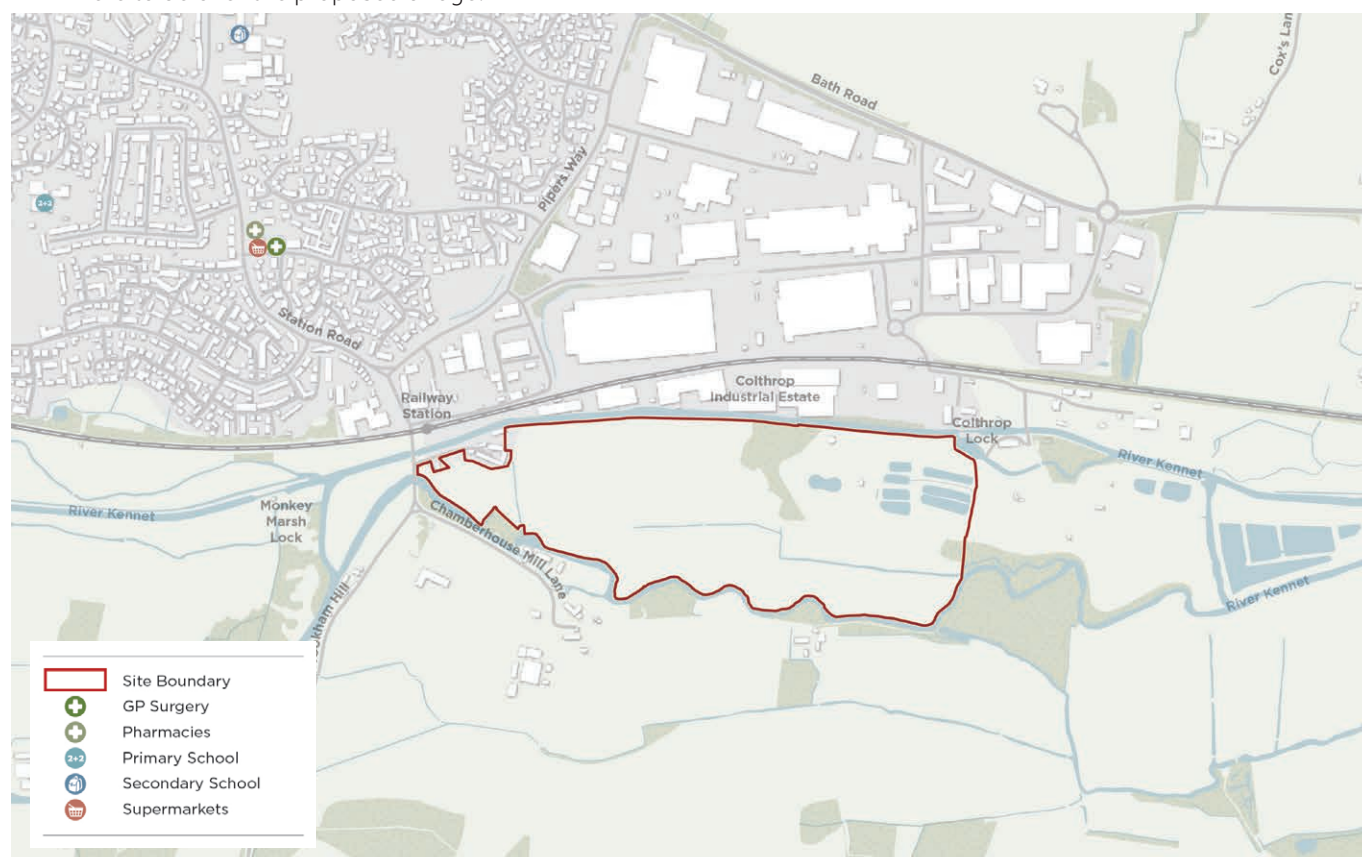


Figure 21: Nearby facilities and social infrastructure

## UTILITIES, AIR QUALITY AND NOISE

3.57 Much of the site is free from noise issues, as the railway line is broadly screened from the site by existing buildings and the distance across the canal.

3.58 Thatcham has an air quality management area (AQMA) on the A4 near the town centre. It is not anticipated that development to the east of this would cause significant issues.

3.59 The site is crossed by a 132kV electricity overhead wire, and a 33kV wire, leading to a substation adjacent to the railway station. Both of these cross the core of developable land, and it would be reasonable to expect that they are placed underground between the substation and the furthest east supporting pylon, or the eastern edge of the site. The site promoter has indicated in their promotion documentation that this would be at cost to the landowner.

3.60 Detailed investigation into provision of utilities to the site has not been made, however it is assumed that there would be capacity on the local networks subject to standard upgrades being undertaken.

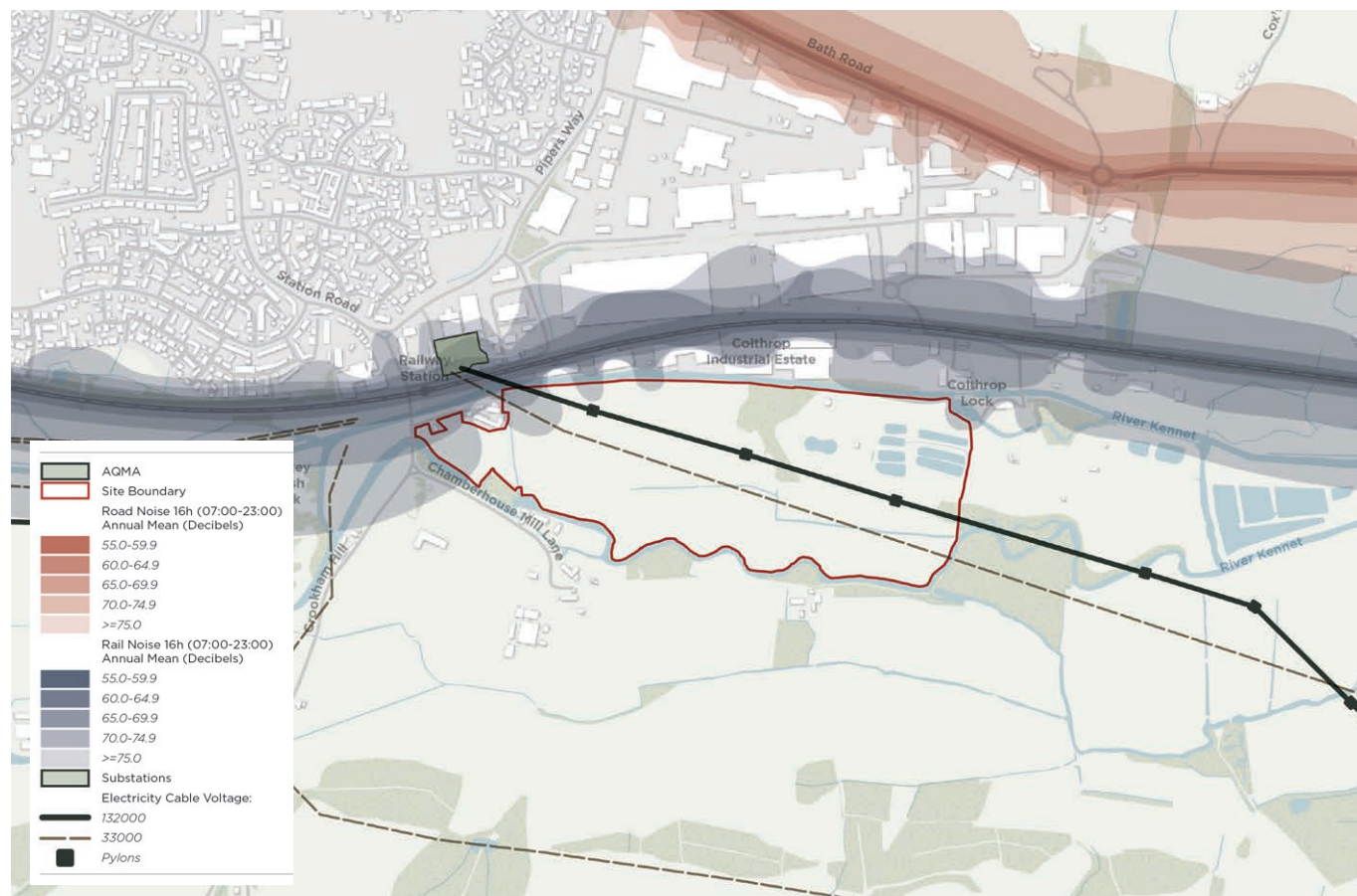


Figure 22: Utilities, air quality and noise plan

## SUMMARY AND DESIGN PARAMETERS

3.61 Rainsford Farm is a highly constrained site, with the following key issues making development difficult or undesirable:

- Fluvial flood management within Flood Zone 3, and provision of surface water management. The site fails the EA Sequential Test applied correctly and appropriately as part of the plan-making process. Increases in EA climate change uplifts require a more generous flood alleviation scheme.
- Access from the highways network, with the development only having a single point of access from a new link road between the proposed bridge and a new junction with the existing highway. Typically this would limit development to less than 300 homes.
- Requirements for third-party land to deliver access and the proposed bridge, as well as external highways improvements.

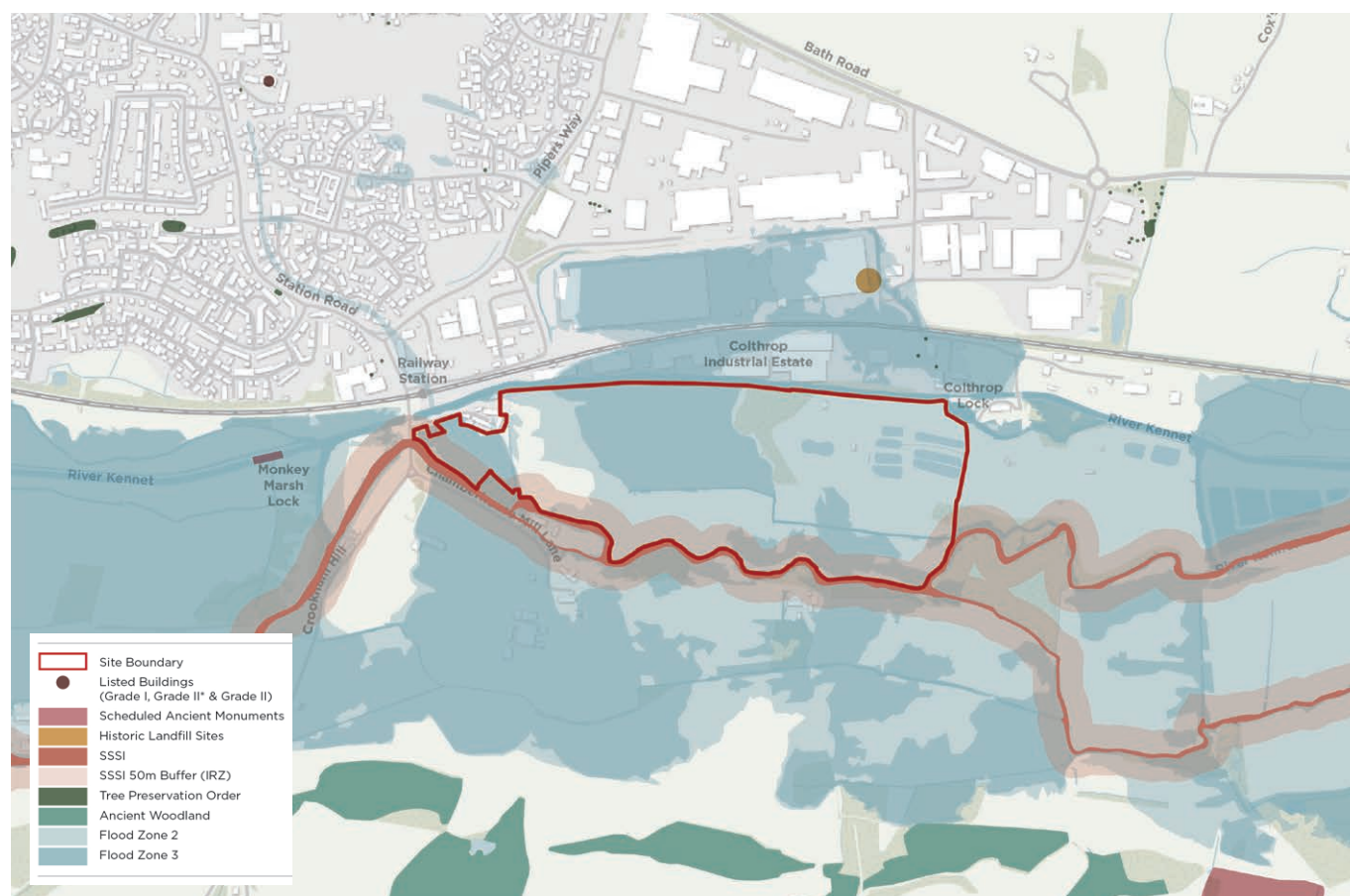


Figure 23: Combined constraints plan



- 
- The proposed bridge has significant issues as proposed, with associated cost increases, for it to be able to provide bus, walking and cycling access to the development. Without these changes this development would be cut off by those modes and would rely on cars.
  - The adjacency of a nationally-protected SSSI further limits development and requires sensitive consideration.
  - Any reduction in site capacity may threaten the provision of on-site services and facilities, making it further reliant on cars.

3.62 A combined constraints plan is included in Figure 23 on the previous page.

3.63 The site offers the following positive considerations for development:

- Adjacency of one end of the site to the railway station, potentially making journeys to Reading, Newbury and London more sustainable.
- Adjacency (via footpath in need of improvement) to the Colthrop Industrial Estate.
- Potential alleviation of congestion and safety issues at the level crossing if the bridge can be feasibly and viably delivered, and if this is a policy priority. It should be noted that in the Local Plan Review, WBDC have removed their previous road scheme for a bridge across the railway (along with all previously proposed road schemes). This will be revisited as part of the update to the Local Transport Plan.

## DESIGN PARAMETERS

3.64 The following schemes designed by the site promoters are considered essential to the delivery of the site and should form a fixed requirement of any masterplan design work:

- Flood alleviation swale
- Railway and canal bridge

3.65 Given the scope of this study, it is not feasible to revisit the detailed technical design of these items and so they are treated as-is, despite reservations and issues noted in previous sections.

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### 3.66 Additional parameters for masterplanning the site are as follows:

- Making best use of the adjacency of the railway station for increased density of dwellings, within the character of the existing town, in order to promote the use of sustainable transport choices particularly for those who travel to work in Newbury and Reading
- Maintaining a minimum of 50m standoff from the SSSI for development, with the exception of the necessary bridge to access the site in order to mitigate the impacts of construction, surface water runoff and recreational access to this sensitive natural site and aid its recovery
- Increasing the standoff from the flood alleviation swale to account for increased climate change uplift figures
- Using the 'urbanised' northern edge of the site adjacent to the canal and existing buildings to deliver higher densities and deliver a more efficient use of land
- Maximising views of the landscape to the south from public realm and private residences to make the best use of this distinctive asset
- Making use of existing green infrastructure on site and maximising connections to the countryside for recreation
- Creating a connection to the canal and Colthrop Lock to enable onward connections to Colthrop Industrial Estate and provide recreational access to an attractive location on the canal
- Providing for good active travel connections within the site and towards the railway station and town centre to encourage sustainable travel choices



The background of the entire page is an aerial photograph of a landscape, likely a rural or semi-rural area, showing fields, roads, and some buildings. A solid blue rectangular overlay covers the top half of the image. The text '4.0' is positioned on the left side of the lower half, overlapping the blue area and the map.

# 4.0

## ILLUSTRATIVE MASTERPLAN



## CONCEPT AND DESIGN PRINCIPLES

- 4.1 To provide a realistic understanding of the site's potential for development, an illustrative masterplan has been produced drawing on good urban design and placemaking principles in order to understand the best possible potential of the site. The masterplanning process has been used to inform an understanding of development capacity, as well as abnormal development costs that would be incurred and the nature of any required infrastructure. This analysis has fed into the viability assessment in the following chapter.
- 4.2 Key features of the master plan are:
- Establishing the northern half of the site, adjacent to the canal, as suitable for higher density development with a more urban grain, with permeable connections through to the canal towpath
  - Opening views to the south across the flood mitigation swale, with a varied edge 'flowing' around the newly established flood mitigation area
  - Changing the character from west to east. Starting from a higher density urban grain closer to the station, dropping to a lower density village-like character, with increasing amounts of incidental and natural green space between development parcels
  - Using development to screen the bridge embankment and help establish a gateway green open space
  - Creating an opportunity for a local centre or focal space where the primary street crosses the swale
  - A series of increasingly green nodes when moving from west to east through the site, as the primary street intersects green corridors running from north to south
  - Clear connections through to Colthrop Lock, with development creating an attractive setting for the lock
- 4.3 These design principles are illustrated on the concept diagram in Figure 24 below.
- 4.4 From the site analysis and background context information, it is not considered that there are issues which would need resolving through the preparation of masterplan options. Key elements of the design concept (flood mitigation, railway bridge) which might otherwise require options analysis are fixed. As the purpose of the masterplan is to explore site capacity and the potential cost requirements, a single plan has been prepared.

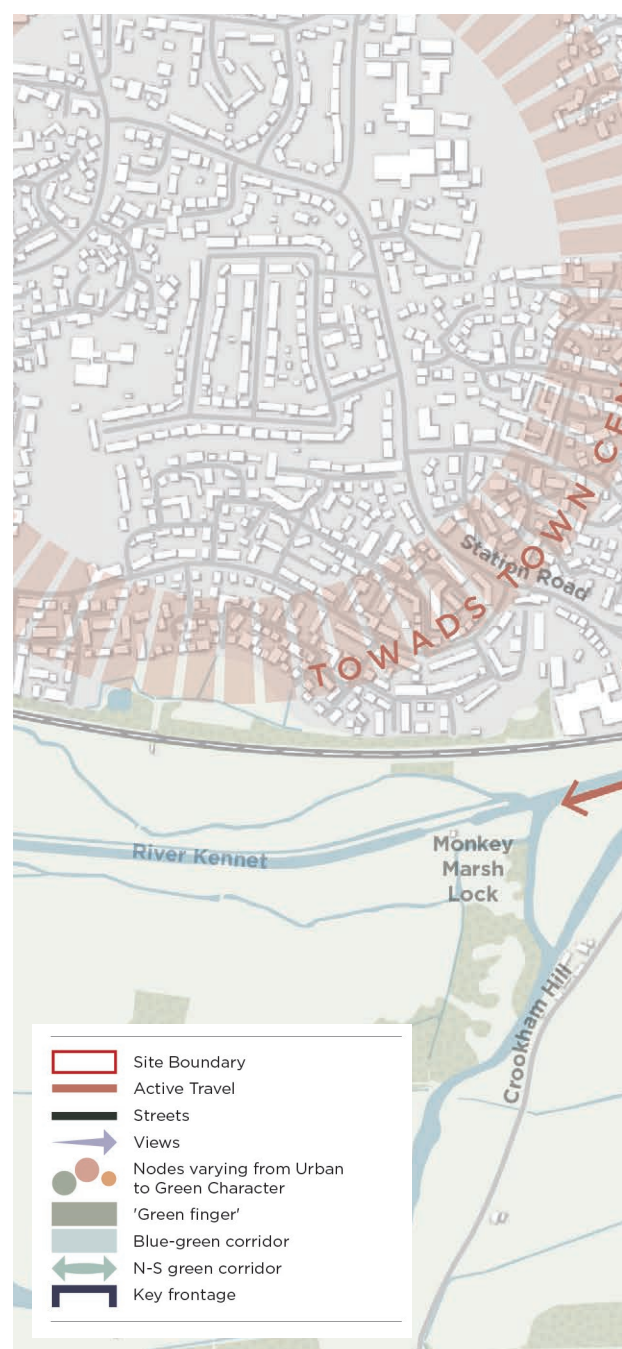


Figure 24: Design concept for Rainsford Farm site





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## MASTERPLAN

- 4.5 The concept masterplan shows how development could be undertaken on the site (notwithstanding deliverability issues detailed at the end of this chapter), applying the design principles and concept from above.
- 4.6 Primary movement is west to east, along a main street, travelling through a series traffic-calming nodes as it reaches eastern edge of the site. Access is obtained through a roundabout at the western end of the site.
- 4.7 Due to flooding constraints (Flood Zone 2), a buffer to the SSSI and the land requirements for the bridge embankment, little development can occur at the far western extent of the site.
- 4.8 Development to the south of the swale is limited, to provide an undisturbed buffer to the SSSI and limit infrastructure costs in crossing the swale over a raised causeway. This arrangement also maximises views to the south, providing a distinctive and attractive southern edge to the development.
- 4.9 Development along the swale is brought back away from the projected new Flood Zone extents to ensure additional buffer for new climate change uplift figures, as well as ensure space for surface water drainage features can be incorporated outside of Flood Zone 3.
- 4.10 Amenity open space is distributed across the site in usable amounts, with space for a large sports pitch in the east as well as smaller sports facilities or formal open space within the green network.
- 4.11 Active travel routes run throughout the site providing connectivity to the lock and to the railway station and town centre to the east. However, connections across the railway line are uncertain and could be compromised by needing to go over a bridge at the station should the level crossing be closed. This limits the connectivity of the site to the existing town.



Figure 25: Illustrative concept masterplan for site capacity





## CAPACITY AND LAND USE

4.12 The total site area is approximately 36ha, although is heavily constrained. Within this the masterplan identifies land suitable for residential development of 10.21ha. The site has a physical capacity of up to 400 units, as detailed in Table 1 below.

*Parcels run clockwise from railway bridge*

| RESIDENTIAL PARCEL | AREA (HA)    | DENSITY (DPH)   | DWELLINGS  |
|--------------------|--------------|-----------------|------------|
| 1                  | 0.34         | 60              | 20         |
| 2                  | 0.65         | 60              | 39         |
| 3                  | 0.73         | 50              | 36         |
| 4                  | 0.72         | 40              | 29         |
| 5                  | 0.98         | 35              | 34         |
| 6                  | 0.52         | 30              | 16         |
| 7                  | 0.53         | 30              | 16         |
| 8                  | 0.83         | 30              | 25         |
| 9                  | 1.36         | 30              | 41         |
| 10                 | 1.06         | 35              | 37         |
| 11                 | 1.72         | 40              | 69         |
| 12                 | 0.79         | 40              | 32         |
| <b>TOTAL</b>       | <b>10.21</b> | <b>39 (AVG)</b> | <b>393</b> |

Table 1: Residential development land use budget

4.13 However, the site is constrained in terms of access, having only one feasible access point for the new development, and this would ordinarily restrict its deliverable capacity to 300 to satisfy highways requirements for new developments.

4.14 Densities have been selected to be appropriate to sustainable development in that location and respond to the concept plan and design principles. Parcels to the west and north are higher density, with those around the focal point space and gateway green primarily apartments with some houses, giving higher densities. Moving east, more typical family homes would deliver densities of 30-40dph. Overall the site's developable area would be developed at an average of 39dph, slightly higher than typical new developments but reflecting the site's proximity to the railway station.

4.15 This capacity figure is very similar to the Pattern Book assessment undertaken in the HELAA.

4.16 These densities are considered appropriate and deliverable based on the analysis work contained in West Berkshire's Density Pattern Book (2019).

4.17 As the site's capacity is considerably lower than that promoted by the landowning consortium, it would not support the provision of a new primary school on site. Instead, contributions towards new school places elsewhere would be collected through Community Infrastructure Levy (CIL) contributions.



## DELIVERABILITY ISSUES

- 4.18 It is also unlikely that a development of 400 homes, near to an existing row of shops to the NW of the railway station, would support a new retail facility, however passive provision has been made on the focal space to the north of the swale and primary street intersection. This would likely be a ground floor retail unit underneath apartments.
- 4.19 Open space within the site is dominated by natural or semi-natural open space, primarily in the form of the flood mitigation swale, but also to the south of the swale as a buffer to the River Kennet SSSI. Table 2 below compares the open space typologies with WBDC policy requirements, and Fields in Trust "Beyond the Six Acre Standard" requirements.

| OPEN SPACE         | AREA (HA) | WBDC REQUIREMENT | FIT REQUIREMENT |
|--------------------|-----------|------------------|-----------------|
| Sports Pitches     | 1.14      | 1.13             | 1.13            |
| Amenity Open Space | 2.65      | 1.51             | 1.32            |
| Natural Open Space | 11.52     | -                | 1.70            |

Table 2: Open space typologies land use table

- 4.20 Within the site, space is earmarked for up to two Locally Equipped Areas of Play (LEAPs).

- 4.21 Notwithstanding the above discussion, there would remain fundamental issues with the deliverability of this site:
- 4.22 Access arrangements require all 400 homes to be accessed through a single point, before being able to travel north or south. This is above the typical threshold of 300 homes needing two independent accesses
- 4.23 The reduction in capacity from the landowners' proposals to this more realistic figure of 400 homes will place significant pressure on viability, assessed in the next chapter
- 4.24 The scheme must still deliver the new railway bridge, which requires third-party land and a redesign of the bridge to achieve modern standards
- 4.25 The site would still fail the EA Sequential Test that is applied at plan-making stage, which would make its allocation and subsequent development extremely difficult with the potential for a sustained challenge from the EA.
- 4.26 The realistic capacity of the site suggests that it would not be viable to accommodate a new primary school, local centre or GP surgery on site. This would further increase car dependence of what could become a cut-off housing development, especially if measures to improve active travel connectivity across the railway line are not delivered.



The background of the page is an aerial photograph of a landscape, likely a rural or semi-rural area, showing fields, roads, and some buildings. The entire image is overlaid with a semi-transparent blue filter. The text is white, providing a strong contrast against the blue background.

# 5.0

## INFRASTRUCTURE AND VIABILITY

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## SITE CAPACITY SCENARIOS

- 5.1 Through the masterplanning process, it has been determined that the site has a physical capacity of 400 units. However, due to access constraints, in practice this would be limited to 300 units which can be considered the realistic potential of the site.
- 5.2 Notwithstanding these technical constraints, we have assessed the site's viability for a best-case scenario of 400 units, with required infrastructure to match.

## INFRASTRUCTURE PROVISION

- 5.3 Infrastructure and abnormal development costs that would be required to develop Rainsford Farm successfully have been identified. This falls into two broad categories: on-site and off-site.
- 5.4 A schedule of indicative infrastructure requirements has been prepared and shown in Table 3. This also indicates the position regarding CIL receipts versus S106 obligations, in accordance with the Planning Obligations SPD 2014.
- 5.5 As the site is limited in scale and could be built out rapidly, much of the infrastructure would be required up-front, except for per-unit charges such as personal travel planning or primary healthcare contributions.
- 5.6 Infrastructure falls into the broad categories of Transport and Access, Drainage, Utilities, Education and Community. This schedule has not considered costs such as:
  - Third party land costs
  - Costs associated with closure of the Thatcham Station level crossing
  - Off-site junction improvements other than outlined above
  - Off-site pedestrian/cycle improvements
  - Public Transport Improvements
  - Potential Network Rail land value uplift demands
- 5.7 As such the table lists essentials and has tried to be consistent as much as possible with the approach taken at NE Thatcham and elsewhere in the Local Plan Review to ensure comparability.
- 5.8 Costs for key items such as the bridge have been assessed independently by Stantec, based on the information provided.



| NO                          | INFRASTRUCTURE ITEM                                       | SOURCE OF FUNDING | ON-SITE / OFF-SITE |
|-----------------------------|---|-------------------|--------------------|
| <b>TRANSPORT AND ACCESS</b> |   |                   |                    |
| 1                           | Primary Link Road - Approx 150m                           | Abnormal Dev Cost | On-Site            |
| 2                           | Secondary Internal Access Road - Approx 800m              | Abnormal Dev Cost | On-Site            |
| 3                           | Bridge over Kennet to new junction on Cookham Hill        | Abnormal Dev Cost | Off-Site           |
| 4                           | Internal roundabout                                       | Abnormal Dev Cost | On-Site            |
| 5                           | Allowance for Cycle/Ped/Green Ways - approx 500m          | S106              | On-Site            |
| 6                           | New roundabout on Cookham Hill                            | S278              | Off-Site           |
| 7                           | Bridge over railway and K&A Canal                         | Abnormal Dev Cost | Off-Site           |
| 8                           | Carriageway/footway/cycleway works on Pipers Lane (130m)  | S106              | Off-Site           |
| 9                           | New roundabout at Pipers Way / Pipers Lane junction       | S278              | Off-Site           |
| 10                          | Additional Cycle Parking at railway Station               | CIL               | Off-Site           |
| 11                          | Personal Travel Planning                                  | CIL               | Off-Site           |
| <b>DRAINAGE</b>             |   |                   |                    |
| 12                          | Swale   | Abnormal Dev Cost | On-Site            |
| 13                          | SuDS Attenuation or Drainage Ponds                        | Abnormal Dev Cost | On-Site            |
| <b>UTILITIES</b>            |   |                   |                    |
| 14                          | Undergrounding of 132kV cables within site - approx 1130m | Abnormal Dev Cost | On-Site            |
| 15                          | Undergrounding of 33kV cables within site - approx 1000m  | Abnormal Dev Cost | On-Site            |
| 16                          | New utility provision                                     | Abnormal Dev Cost | On-Site            |
| <b>EDUCATION</b>            |   |                   |                    |
| 17                          | Primary School Contributions                              | CIL               | Off-Site           |
| 18                          | Secondary School Contributions                            | CIL               | Off-Site           |
| <b>COMMUNITY</b>            |   |                   |                    |
| 19                          | Sports pitch/open space commuted sum provision            | CIL               | On-Site            |
| 20                          | Primary healthcare contribution                           | CIL               | Off-Site           |

Table 3: Infrastructure provision schedule

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## VIABILITY SUMMARY

- 5.9 The Local Plan Review must be supported by evidence which demonstrates the viability of development and infrastructure provision; unless schemes are deemed to be affordable, capable of delivering policy compliant measures including affordable housing, and generating an acceptable level of developer profit (without which there is no incentive to build), it would not be appropriate to pursue their allocation.
- 5.10 A high level viability appraisal has been carried out for Rainsford Farm, including the identified infrastructure items required to support and enable development. A Residual Land Value is derived from the appraisal process.

## ASSUMPTIONS

- 5.11 Assumptions for viability analysis are as follows:
- A site capacity of 400 dwellings, with a mix as per the most recent Berkshire HMA assessment (2016)
  - Affordable housing level of 40% (70% social/affordable rent at 50% market value, 30% discounted market sales at 65% market value)
  - Build out over 5 years:
    - Year 1 for site preparation
    - Year 2: 50 units
    - Year 3: 100 units
    - Year 4: 150 units
    - Year 5: 100 units
  - Community Infrastructure Levy of £97.56 per m<sup>2</sup> for private units
  - A blended rate of return of 14.05% on GDV per phase (Representing a blend of circa 17.5% on private and circa 6% on affordable, allowing 17.5% for First Homes)
- 5.12 A full note on the viability assumptions is set out in an appendix. This approach has been cross-checked with Dixon Searle, who are undertaking the wider Local Plan Review viability assessment.

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## RESULTS

- 5.13 The scheme has been tested to establish whether it is capable of generating the outcomes that are policy compliant and sufficiently profitable. This is measured against the following criteria:

*Does the scheme generate the required level of developer's profit whereby the profit level adopted reflects the levels being assumed for testing local plan viability, and is assumed as a cost in the development appraisal?*

The overall profit level is at the lower end of the spectrum that a Developer might seek.

*Does the scheme generate the required level of CIL – the CIL costs identified in the infrastructure schedule for Rainsford Farm amount to just under £750,000?*

The total amount of CIL collected amounts to some £2.242 million, so will easily cover the Council's obligations and provides for other costs that may come out of CIL not identified in the schedule.

*Can the required level and mix of affordable housing be delivered?*

The appraisal tests the policy compliant mix off affordable housing, allowing for the impact of the requirement to incorporate First Homes.

*Does the scheme achieve a land value which exceeds existing use value and benchmark land value and is therefore viable based on the assumptions set out above?*

The appraisal indicates a negative land value of just under **£15,000,000**. The required minimum land value for the scheme to be viable, based on a gross site area of 36 ha and a Benchmark Land Value of £250,000 (reflecting existing use and size of site) would be £9,000,000. **The indicative scheme therefore fails the viability test by almost £24 million pounds** (with a gross development value estimated at £117m) in terms of land value generated, and is clearly not viable.







# 6.0 CONCLUSIONS

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## CONCLUSIONS

- 6.1 This study has undertaken an independent review of the Rainsford Farm site, to assess whether WBDC were correct in excluding it from the Local Plan Review process, and what the potential for development on site would be.
- 6.2 This study has found the following:
- WBDC were correct in excluding the site during the HELAA on flooding and highways grounds, with the methodology being applied consistently across all sites
  - The site has a number of deliverability concerns relating to the design of the railway bridge, flood mitigation scheme details, access arrangements and third party land requirements
  - The site's realistic capacity is around 400 units, far below the promoters' claims of 950 units
  - At this capacity, the site cannot support a new primary school, and is unlikely to be able to support a new GP surgery
  - The site would be largely cut off from Thatcham, with concerns about active travel access across the railway not able to be resolved at this stage of design
  - The site cannot be viably developed in anything approaching a policy-compliant manner, with very high infrastructure costs to provide access, as well as the site's constraints limiting capacity and potential development value
- There are a number of unknowns that have not been explored, but should they be required would further cause the scheme to become unviable. These include:
    - Requirements for Network Rail to take a percentage of land value uplift through providing access across the railway, as is their policy
    - Third party land costs for the bridge
    - Additional costs in closing the level crossing should a new pedestrian crossing be required to comply with the Equality Act
    - Off-site highway improvements and active travel improvements that may be required, such as improvements to Crookham Hill should additional traffic use the route, or improvements to cycling links towards the town centre to close gaps in existing provision
- 6.3 As a result of this assessment, this study concludes that the site was correctly excluded from the Local Plan Review, and cannot viably be developed. It cannot provide a realistic option for planned growth of Thatcham.

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**A.A**

# TN001 TRANSPORT REVIEW

## TECHNICAL NOTE

**Job Name:** Rainsford Farm, Thatcham  
**Job No:** 332110569  
**Note No:** TN001  
**Date:** July 2021  
**Prepared By:** Ellen Few  
**Subject:** Addendum to TSGS – Colthrop Village Review of Reg. 18 Reps

---

### 1. Introduction

- 1.1. Stantec and David Lock Associates (DLA) have been commissioned by West Berkshire Council (WBC) to prepare an addendum to the Thatcham Strategic Growth Study (TSGS) 2020.
- 1.2. This report sets out responses to key observations from the technical note prepared by Stuart Michael Associates (SMA) as part of the Regulation 18 representations made on behalf of the Colthrop Village Consortium in respect of the Draft Local Plan consultation for West Berkshire.
- 1.3. The SMA note considers the transport merits of the Rainsford Farm site against other sites identified by West Berkshire Council (WBC) in the HELAA, particularly the North East Thatcham strategic site promoted for allocation.

### 2. Accessibility by Foot

- 2.1. Paragraph 30 of the SMA Technical Note (TN) states *“Colthrop Village offers significant advantages in terms of providing convenient access on foot to local facilities compared with the northern and eastern parts of North East Thatcham site”*.
- 2.2. With the exception of the eastern part of the site the majority of North East Thatcham is within 2km of the town centre, a similar distance to that of western part of Colthrop Village when considering the direct walking route. However, the concept masterplan prepared by JSA on behalf of the Colthrop Village Consortium shows a substantial proportion of the residential development will be located on the eastern side of the site, approximately 2.5km from the town centre.
- 2.3. North East Thatcham can provide multiple points of access and improve walking and cycling infrastructure between the site and the town centre and railway station providing genuine opportunities for future residents to access the services and deliver improvements for the wider community of Thatcham. In their comparison note SMA have provided limited information on the quality of existing pedestrian infrastructure in the vicinity of Colthrop Village. Based on an initial review it is considered that some of the junctions along Station Road could benefit from improved crossing provisions to make the route accessible for all users.
- 2.4. The railway line and Kennet and Avon Canal restricts the pedestrian and cycle connectivity of Colthrop Village. Pedestrians and cyclists travelling to the town centre will have to cross the canal via the proposed new bridge.
- 2.5. North East Thatcham will create a walkable neighbourhood with local centres and primary schools within 500m of residential properties. The facilities on site will also include a secondary school and employment ensuring there are opportunities for residents to access facilities on foot within a reasonable walking distance.

## TECHNICAL NOTE

- 2.6. Based on the concept masterplan for Colthrop Village, those proposal are seeking to provide a primary school and local centre on site. On this basis it is considered that there will be a level of internal trips with both sites, but North East Thatcham will be able to support more of its future residents with the provision of a wider range of facilities on site.

### 3. Accessibility by Cycle

- 3.1. The second theme raised considers the accessibility of the site to nearby facilities by cycle including connections to the NCN Route 4.
- 3.2. Paragraph 39 states “*North East Thatcham does not have direct access to the high quality NCN Route 4.*” Although North East Thatcham does not sit directly adjacent to the route, improvements from the site along Pipers Way will offer an opportunity for cyclists to access the NCN 4 within approximately 1.5km from the centre of the site. Alternatively, the route can be joined via Thatcham town centre approximately 2km to the west of the centre of the site. For Colthrop Village the NCN 4 route runs along the northern boundary of the site providing direct access to the route. However, cyclists travelling west towards Thatcham and Newbury will still be required to cross the railway line and canal, with no other alternative points of access to join the route.
- 3.3. There is currently a missing section of off carriageway cycleway on the NCN 4 route between Pipers Way / Station Road Roundabout and Station. The TSGS has identified this as an area of improvement to provide an off-carriageway cycleway to provide a near continuous off road cycle route between Reading and Newbury.
- 3.4. Paragraph 40 states “*North East Thatcham is less attractive for cycling since it largely occupies the relatively steep valley side. Figure 2 shows the parts of the North East Thatcham that are at a height of 95m or more. The centre of Thatcham lies around 75m so the areas shown require a cyclist to negotiate a difference in levels of 20m or more. The highest parts of the site (North East Thatcham) are at a height of 125m, around 50m above the main facilities within Thatcham and Newbury.*”
- 3.5. The indicative layout for North East Thatcham was designed to utilise the topography of the site. It is not considered that the topography of the land would provide a barrier to cycling as the cycle infrastructure would be delivered appropriately taking into account the gradients of the landscape. The areas to the north edge have steep gradients which would be more involving to develop and have not been considered within the masterplan as part of the TSGS.
- 3.6. Paragraph 41 states: “*North East Thatcham site offers a significant lower level of cycle accessibility than the Colthrop site.*”
- 3.7. As illustrated on page 27 of TSGS, the majority of North East Thatcham is within a 5–10-minute cycle of the town centre and railway station. Therefore, it is not considered that the site has a significant lower level of cycle accessibility that Colthrop Village, which itself is restricted by the railway and canal, limiting its connectivity to Thatcham and Newbury.
- 3.8. North East Thatcham also benefits from its proximity to the A4 where there are signed off carriageway cycleways along sections of the A4. In addition, there are short sections of on carriageway cycleways on Chapel Street and east of Floral Way. Within the town centre there are a number of on and off carriageway cycle routes.
- 3.9. It is noted in the TSGS that there are several gaps in cycle provision between North East Thatcham and the town centre and railway station. Given the scale of the development it is considered that these improvements could be delivered with funding from the development. This could provide a direct connection to the NCN4 north of the railway station and bring betterment to new and existing residents of Thatcham.

## TECHNICAL NOTE

### 4. Accessibility by Bus

- 4.1. The technical note by SMA has also considered the site accessibility by bus.
- 4.2. The Colthrop Village site currently lies approximately 1km from the nearest bus stops served by service 1a/ 1c offering an hourly service between Thatcham and Newbury. It has been stated that an “extension of the existing services into the site” would improve the accessibility of Colthrop Village. However, discussions would be required with the local bus companies and WBC to understand if this bus access strategy is achievable.
- 4.3. In relation to this, paragraph 44 states: *“To establish an acceptable level of bus service for the North East Thatcham development it would be necessary to either provide an entirely new service: a strategy that is unlikely to be viable in the longer term since the service would both undermine and be undermined by the existing services to the east or the existing services would need to be diverted, in which case it is likely that levels of existing bus accessibility in areas of north Thatcham would be reduced.”*
- 4.4. Moreover, SMA’s design for the bridge over the railway and canal shows only a 6m wide carriageway. Whilst this is sited in Manual for Streets as acceptable for buses, it is more recently accepted that a carriageway width of a minimum of 6.5m is more appropriate.
- 4.5. The A4 corridor provides a high frequency service, the 1 Jetblack service between Newbury and Reading. Residents on the eastern section of North East Thatcham would benefit from this service being within close proximity to the A4 corridor. At present it is considered that a “Buzz” bus style service might be appropriate to serve the development. This would provide regular services through the site and the adjacent residential areas, calling at Thatcham town centre and the railway station.

### 5. Accessibility by Rail

- 5.1. Paragraph 50 states: “The North East Thatcham site lies between 1.2km and 3.0km from the station. The potential to use the train is therefore low and significantly lower than for Colthrop Village site.”
- 5.2. The Colthrop Village site is located within a closer proximity to the railway station than North East Thatcham. However, there will still be genuine opportunities for future residents to access the station from the North East Thatcham. As stated in the TSGS, North East Thatcham could deliver improvements to active travel and public transport which could include a shuttle bus service direct to the railway station.

### 6. Highway Impact

- 6.1. In relation to highway impact the technical note prepared by SMA states:
- 6.2. *“Previous strategic modelling, as reported in SMA’s Access Strategy and Bridge Proposals” report (June 2019) indicates that a new bridge to replace the existing level crossing would lead to minimal increase in southbound traffic crossing the railway on Crookham Hill but would lead to some increase in northbound traffic”.* This suggests the bridge will lead to an increase in traffic but no consideration of the environmental impact this will have on the conservation areas to the south and traffic rerouting from the A339.
- 6.3. SMA also state *“it has been agreed with WBC that the earlier strategic modelling would be updated using the most recent relevant model to reassess the potential effects of the new infrastructure and latest site masterplan”.* The report does not however, mention whether any of the modelling results presented to date have been formally discussed and agreed with WBC.



## TECHNICAL NOTE

- 6.4. North East Thatcham formed part of the sites that were assessed as part of the Local Plan Review Transport Assessment Report Phase 1 (WBC, Dec 2020). Paragraph 58 of the SMA technical note states that there are “...*significant concerns over highway impact of North East Thatcham and no substantial evidence of viable and deliverable highway mitigation schemes. There is particular concern over the impact of the development on the A4 and its junctions through Thatcham*”. No further evidence is provided to support this in the technical note.
- 6.5. Within the TSGS it is noted that highway mitigation along the A4 including the Floral Way roundabout could be delivered to offer capacity improvements along the corridor.

## 7. Conclusion

- 7.1. This Technical Note has set out the key observations from the “WBC Local Plan Reg. 18 Representations” technical note prepared by SMA on behalf of the Colthrop Village.
- 7.2. With the exception of the eastern part the majority of North East Thatcham is located with 2km of the town centre. This is a similar distance to the western part of Colthrop Village however a substantial proportion of the residential development will be located on the eastern side approximately 2.5km from the town centre with access limited by the railway line and canal. North East Thatcham could deliver significant provision for active travel onsite and off-site to ensure there are genuine opportunities to access the town centre. The indicative masterplans of both sites show the provision of on-site primary schools and local centres however North East Thatcham will also provide a secondary school and employment which will be able to support more of its future residents with the provision of a wider range of facilities on site.
- 7.3. Opportunities for bus travel for Colthrop Village are limited with the existing service being approximately 1km from the centre of the site. It has been suggested by SMA that there are opportunities to extend the existing bus service into the site however discussions with local bus companies would be required to understand if this would be viable. North East Thatcham could deliver bus services to serve the development which could be in the form of Buzz style buses offering shuttle services between the key destinations and the site, although this would also be subject to discussion with operators.
- 7.4. In regard to the highway impact, strategic modelling has been undertaken by SMA and it has been suggested that this work will be updated with the new infrastructure and site masterplan. However, SMA do not clarify whether the results of the modelling have been formally discussed and agreed with WBC.
- 7.5. In conclusion, it is not considered that SMA’s technical note demonstrates that the accessibility of Colthrop Village is significantly better than North East Thatcham. North East Thatcham can provide genuine opportunities to access the town centre and deliver infrastructure to provide betterment for both future and existing residents of Thatcham, within the viability of the development.

## DOCUMENT ISSUE RECORD

| Technical Note No | Rev | Date     | Prepared | Checked | Reviewed<br>(Discipline Lead) | Approved<br>(Project Director) |
|-------------------|-----|----------|----------|---------|-------------------------------|--------------------------------|
| 332110569/TN001   | -   | 01/07/21 | EF       | BT      | BT                            | PB                             |
|                   |     |          |          |         |                               |                                |

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The background of the page is an aerial photograph of a landscape, likely a rural or semi-rural area, showing fields, roads, and some buildings. A semi-transparent blue overlay covers the entire image, creating a monochromatic effect. The text is white, providing high contrast against the blue background.

**A.B**

# TN002 FLOODING & SURFACE WATER

## TECHNICAL NOTE

**Job Name:** Rainsford Farm, Thatcham  
**Job No:** 332110569  
**Note No:** TN002  
**Date:** 6 July 2021  
**Prepared By:** Ben Taylor  
**Subject:** **Rainsford Farm - Flood Risk and Drainage Representations**

---

### 1. Introduction

- 1.1. Stantec and David Lock Associates (DLA) have been commissioned by West Berkshire Council (WBC) to prepare an addendum to the Thatcham Strategic Growth Study (TSGS) 2020.
- 1.2. This technical note seeks to comment on responses to WBC's Regulation 18 (Reg. 18) Draft Local plan consultation made by the promoters of the Rainsford Farm site regarding the suitability of the site from a flood risk and drainage perspective.
- 1.3. Stantec (previously Peter Brett Associates) were previously engaged by the promotor of Rainsford Farm to prepare concept Flood and Surface water mitigation strategies in 2016. As such, Stantec has appointed Hydro-Logic Services to provide independent technical review and analysis of the proposals. The summary report prepared by Hydro-Logic is included as **Appendix A** of this Technical Note.

### 2. Regulation 18 Draft Local Plan Consultation

- 2.1. The TSGS formed part of the evidence base for WBC's Regulation 18 (Reg. 18) Draft Local Plan consultation which was undertaken over the period 11 December 2020 to 5 February 2021.
- 2.2. The Draft Local Plan document sets out the areas which WBC would seek to allocate for residential and mixed-use development in the district over the period to 2037. Within Thatcham the primary strategic allocation is for land at North East Thatcham. As Policy SP17 in the Draft Local Plan, WBC is seeking to allocate the site for residential development of approximately 2,500 dwellings plus schools and local centre.
- 2.3. The Rainsford Farm site is not included in Local Plan allocations, and from discussions with WBC officers it is understood that the site was ruled out for strategic development at an earlier stage for a number of reasons. One of the reasons for exclusion was the sequential test.

### 3. Rainsford Farm Promotor Response to Reg.18 Consultation

- 3.1. Representations were submitted to WBC by JSA Consulting (JSA) on behalf of the promoters of the Rainsford Farm site, the Colthrop Village Consortium. The representations object to the development options in the Local Plan based on a number of criteria. One of these was flooding and in particular the assertion that the HELAA published by WBC in 2020 states that considerable parts of the Rainsford Farm site are located in Flood Zones 2 and 3.
- 3.2. JSA opine that the proposed allocation of North East Thatcham does not compare favourably to Rainsford Farm and that concerns regarding the deliverability of other sites within the district lead to a conclusion that Rainsford Farm meets the sequential test in order for WBC to achieve housing requirements.

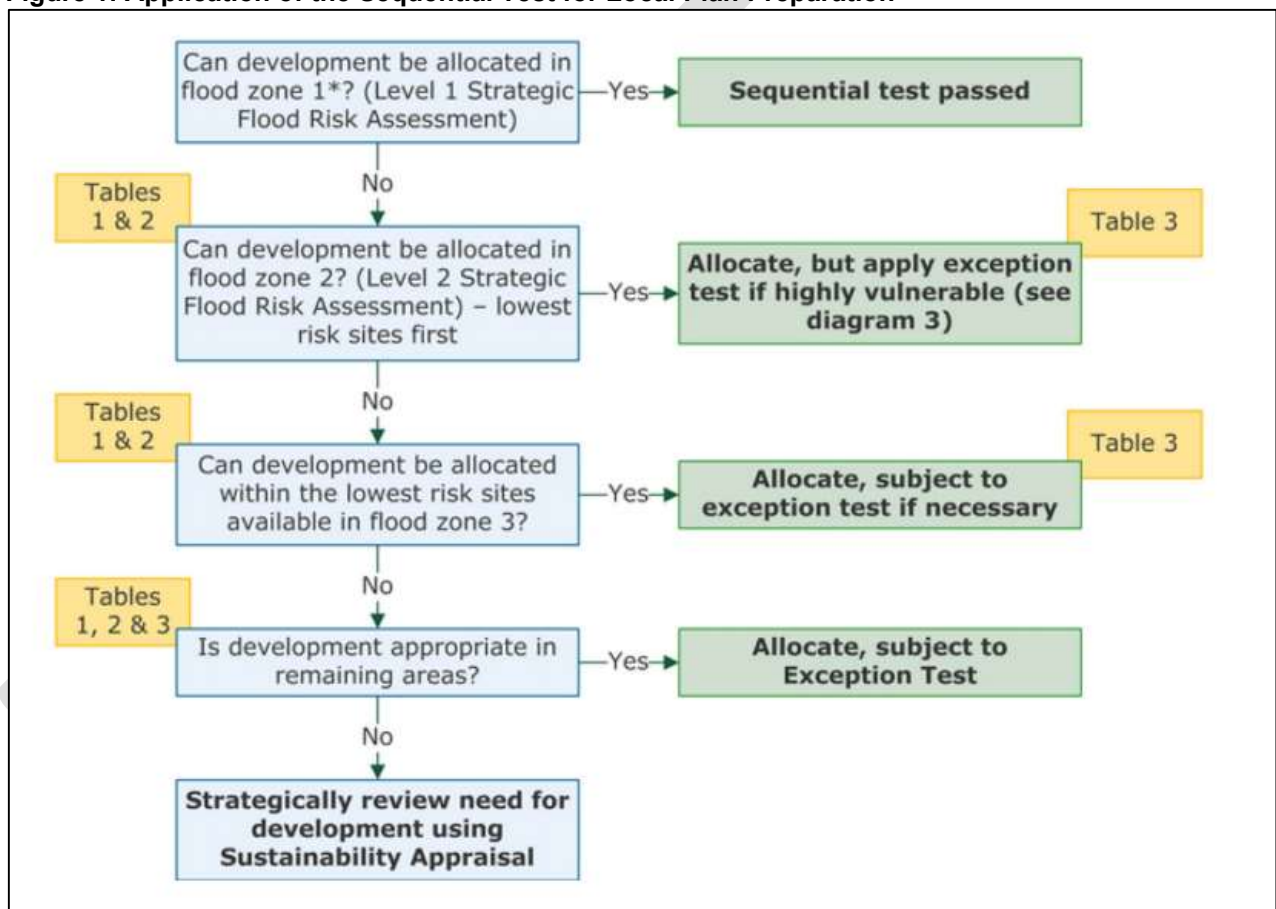


## TECHNICAL NOTE

### 4. Sequential Test

- 4.1. The guidance on [Gov.uk](https://www.gov.uk) states that the purpose of the Sequential Test is to ensure that "...a sequential approach is followed to steer new development to areas with the lowest probability of flooding." The guidance continues to describe that where there are no reasonably available sites in Flood Zone 1, sites in Flood Zone 2 can then be considered.
- 4.2. With regards to sites in Flood Zone 3, the guidance states that these should only be considered "Only where there are no reasonably available sites in Flood Zone 1 or 2..."
- 4.3. The guidance for Local Planning Authorities provides the graphic shown in Figure 1 below to summarise the process of the sequential test in Local Plan making.

**Figure 1: Application of the Sequential Test for Local Plan Preparation**



Source: Gov.uk – Flood Risk and Coastal Change. June 2021

- 4.4. It is therefore reasonable to expect that WBC have followed the above process in their HELAA assessment to comply with national guidance.

### 5. Application of Sequential Test during HELAA Process

- 5.1. During the preparation of the HELAA, WBC have applied a methodology which considered the Flood Zone(s) in which all the sites reviewed are located. From meeting with WBC's officers and the publicly available information on the HELAA process, Stantec understands that a Sequential approach was adopted to reviewing the sites and this is evident in Stage 1b of the HELAA where a site has been excluded from further review due to the majority of the site being located within Flood Zone 3b.

## TECHNICAL NOTE

- 5.2. As the review process in the HELAA proceeds, the constraints and opportunities in terms of flood zones are noted. Where sites do not sit solely within Flood Zone 1, the proportions in other Flood Zones are stated in the stage Stage 2b assessment where a number of sites are removed from consideration as a result of various factors which can be solely flood risk related, or in the case of Rainsford Farm there were other contributing factors.
- 5.3. In line with the Sequential Test, the Officer's review has been based on each site in its unmitigated state. So, whilst it may be technically possible to deliver a solution on a site which would enable residential development, this is not explicitly considered and it is the existing, unmitigated, state of each site which is evaluated.

### 6. Rainsford Farm HELAA Assessment

- 6.1. Section 2.3 of the Hydro-Logic review attached at **Appendix A** sets out Hydro-Logic's consideration of WBC's review of the Rainsford Farm site as part of the HELAA process. Hydro-Logic state that the WBC drainage engineer considered the site to be partially suitable for development and that there were other contributing factors not relating to flooding which led to the site being deemed unsuitable in the HELAA assessment.
- 6.2. Hydro-Logic note that the apportionment of EA flood zones by WBC appear appropriate and are also consistent with the modelling previously undertaken by the site promotor. WBC subsequently estimate that the developable area of the site is 60% of the total area, the area allocated to residential is 20ha and that the area ultimately developable for residential development is 12ha.
- 6.3. Hydro-Logic identify that WBC did not identify that the 20ha is on a drier area of the site, so potentially as much as 80% of the site is developable which would equate to 16ha. Despite this, Hydro-Logic consider it unlikely to be significant in the decision to classify the site as unsuitable.
- 6.4. Finally, Hydro-Logic note that none of the Rainsford Farm information available to them addresses WBC's concerns regarding ponds and potential contamination of the old paper mill site.

### 7. Review of Rainsford Farm Indicative Drainage Strategy

- 7.1. Hydro-Logic has considered the Flood Risk mitigation strategy prepared by Stantec (formerly PBA) prepared in 2016. The full review is in the Technical Note included in **Appendix A**. Hydro-Logic confirm that the principle of the mitigation is reasonable but raise issues which would require addressing if the proposals were to be further developed, including buildings within an area at risk of flooding, although it is noted that this is on a concept layout which was produced following the development of the mitigation strategy and the strategy has not been updated to account for this.
- 7.2. The Surface Water Concept report does not provide a detailed strategy but suggests high level concepts and principles which can be used in managing risk from Surface Water. Significantly, Hydro-Logic identify that the concepts and principles listed do not match with the concept layout as shown as the density of the layout does not appear to allow sufficient area for open storage features.

### 8. Conclusion

- 8.1. This Technical Note has considered the response from JSA to the Reg.18 Draft Local Plan for West Berkshire relating to flood risk and drainage. From discussion with WBC officers and review of the HELAA site selection process, it is considered that the officers have given due consideration to the principles of the Sequential Test whilst eliminating sites.
- 8.2. An independent review of the Flood Risk and Surface Water strategies prepared for Rainsford Farm has found them to have sound principles. However, the concept layouts prepared to date do not completely reflect the demands required to accommodate the strategies.

DRAFT

**DOCUMENT ISSUE RECORD**

| Technical Note No  | Rev | Date   | Prepared | Checked | Reviewed<br>(Discipline Lead) | Approved<br>(Project Director) |
|--------------------|-----|--------|----------|---------|-------------------------------|--------------------------------|
| Job No/Brief/TN001 | -   | 6/7/21 | BT       | PB      | PB                            | PB                             |
|                    |     |        |          |         |                               |                                |

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## Appendix A

## Hydro-Logic Technical Note

DRAFT





|   |                          |
|---|--------------------------|
| <b>Project Title:</b> Thatcham Development Sites                                      | <b>Job Number:</b> K0996 |
|   | <b>Date:</b> 18/6/2021   |
| <b>Client:</b> West Berkshire Council with Stantec                                    |                          |
| <b>Subject:</b> Review of the Planning Appraisal Undertaken in Relation to Flood Risk |                          |

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## 1. INTRODUCTION

Hydro-Logic Services have been employed to undertake an assessment of all possible development sites within the Thatcham area, as covered by the SHLAA 2013 and HELAA, in respect of flood risk issues to determine how these have been undertaken. In particular, to determine if all sites have been reviewed under the same criteria and following the same approach for fluvial and other sources of flood risk.

## 2. HELAA REVIEW

### 2.1. General

The HELAA review is an assessment of proposed development sites in a step by step process including:

- Development potential
- Suitability
- Availability
- Achievability
- Deliverability

The HELAA review considers all planning related issues including but not limited to flood risk, ecology, conservation infrastructure, sustainability. The Rainsford Farm site (THA1) has been identified as unsuitable for development.

## 2.2. Comments on HELAA Assessment of Sites

The HELAA site assessment spreadsheet includes all the potential development sites within West Berkshire. This spreadsheet has been reviewed with particular reference to flood risk.

- 270 sites were reviewed at the suitability stage of the process.
- 110 were passed to the next stage of assessment, this included sites “suitability unknown”, “potentially suitable”, “partially suitable” and “suitable”.
- 23 of these sites had flooding issues, 14 at a lower risk than the Rainsford Farm site, 2 a similar level of risk with 7 at higher risk. These 9 sites were all identified as “suitability unknown”, requiring further information before a decision is made. These sites are considered further in the table below. Rainsford Farm (THA1) has been included for comparison.

The drainage officer's comments seem fair and consistent across all of the sites referenced. They are thorough, include multiple sources of flooding and consider what mitigation and SUDS might be suitable. When flooding is considered separately Rainsford Farm is identified as “partially suitable”, several of the other sites are identified as “challenging” while one (THA5) is identified as “unsuitable” – this site only passes to the next stage because this has an extant planning permission for 2 dwellings, development beyond this has been ruled out.

Only one site (THE4) is deemed “suitable” because it is promoted as an employment and retail site, which has a lower vulnerability classification. A third site (HUN10) considered “partially suitable” is promoted as a water compatible development, which is permitted on a site at risk of flooding.

*Table 1 Sites Considered for promotion with Flood Risk similar or worse than Rainsford Farm*

| HELAA REF<br>Site  | Flood Risk (Fluvial, Surface Water, Groundwater, Comments from Council's Drainage Officer)   | Overall Suitability Assessment | Comments (Including issues additional to flood risk)  |
|--|--|--------------------------------|---|
| <b>Sites with worse flood risk than Rainsford farm</b>   |  |                                |   |
| ALD5<br>Basingstoke Road/Fallows Road, Aldermaston Wharf | Flood Zone 3b: 51.1% of site.<br>Flood Zone 3a: 3.5% of site.<br>Flood Zone 2: 3.1% of site.<br>Flood Zone 1: 42.3% of the site.<br>Surface water flood risk: High risk pooling in the northwest corner of the site. Flood risk covers ≈2% of site.<br><b>Challenging.</b> Southern half of site is in an Environment Agency Flood Alert area; a smaller part of site in the south is recorded as having historical flooding. Only north half of site suitable for development." | Suitability unknown            | Further information is required for a decision. Development would not be allowed in flood zone 3b. Other issues include highway and ecology.<br><br>Drainage officer considers this a challenging site, which is worse than the “partially suitable” given to Rainsford Farm. |
| NEW1<br>London Road Industrial Estate, Newbury           | Flood Zone 3b: 1%.<br>Flood Zone 3a: 65%.<br>Flood Zone 2: 20%.<br>Flood zone 1: 14%.<br>Surface Water Flood Risk: Generally low<br>Groundwater flood risk: High ground water 0-0.25m below surface with a chance of emergence at significant rates over most of site; over remainder of site - approx. 15% - ground water is 0.25-0.5m below surface. This will prevent use of infiltration   | Suitability unknown            | Further information is required for a decision. Other issues include heritage, highway and ecology.<br><br>Drainage officer gives this the same “partially suitable” as Rainsford Farm.   |

| HELAA REF<br>Site | Flood Risk (Fluvial, Surface Water, Groundwater, Comments from Council's Drainage Officer)   | Overall Suitability Assessment | Comments (Including issues additional to flood risk) |
|-------------------|--|--------------------------------|--|
|                   | for Sustainable Drainage Systems (Sustainable Drainage Systems).<br><br><b>Partially developable</b> but due to very high ground water levels over whole site and the risk of some surface water flood flow paths, infiltration Sustainable Drainage Systems and below ground attenuation storage will not be acceptable. Therefore, significant space will be needed for at-ground level Sustainable Drainage Systems. Green Sustainable Drainage Systems would be most appropriate." |                                |  |

## 2.3. Comments on Rainsford Farm HELAA assessment as related to flood risk

It should be noted that Rainsford Farm and Former Paper Mill has not been identified as unsuitable solely on the basis of flood risk. The West Berkshire Council drainage engineer considered the site **partially suitable** based on flood risk. It was a combination of factors that contributed to the unsuitable classification including access, land contamination and overhead high voltage power lines.

The Rainsford Farm site assessment form has been reviewed. The document apportions the areas within each EA flood zone as:

- 3b – 4.5%
- 3a – 33.2%
- 2 - 31.4%
- 1 – 31%

These estimates would seem reasonable considering the current Environment Agency flood zone map. They are also in line with the flood modelling carried out by the developer when designing flood mitigation.

In section (C) *Suitability Considerations & Estimated Development Potential*, of the HELAA document the reviewer reasonably estimates the developable area of the site, taking into account the site constraints, to be 60% of the total area. Then estimates the area allocated to residential (based on the site promotion document Masterplan) as 20ha, thus concluding the developable area suitable for residential development is 60%x20ha=12ha.

The reviewer fails to take into account that, in accordance with the sequential approach, this 20 ha is on a drier area of the site so is more than 60% developable, possibly as much as 80% (80%x20ha=16ha). This is unlikely to have been significant in the decision to identify the site as unsuitable.

The reviewer also notes the site is in a location within the West Berkshire Density Pattern Book with a housing density of 20 per hectare. The current proposal has a minimum density of 26.24 per hectare if spread over the whole site. This will not be the case as land is required for flood mitigation, the new bridge, school, leisure and retail areas. Within the 20 ha residential area the density would be 47.5 per hectare while within the 16 hectare developable area the density would be 59.38 per hectare.

The fluvial flood zones are not the only issue identified by the drainage officer. The ponds and potential contamination on the old paper mill site are identified as issues within the Suitability Considerations table section 4. *Flooding*. Use of sustainable drainage systems is expected. None of these issues are

addressed in the proposed site plan or associated documents that include a Flood Risk Mitigation report and a Surface Water Concept Report.

## 3. APPLICANT'S SITE ASSESSMENT

### 3.1. Flood Risk Mitigation

A flood risk mitigation strategy has been developed for the site, Colthrop Village, Thatcham Flood Risk Mitigation Strategy, PBA. This has been reviewed.

The FRM seems to be a reasonable idea, provided level for level flood plain compensation can be waived, but as the issue is flood flow rather than flood storage this should be acceptable. The current wider site flooding issue can be contained by the construction of a swale between the canal and the river. One concern is the lack of freeboard and indeed overtopping, in the downstream half of the swale (Figure 1) as there is always a degree of uncertainty in model results. This is a particular issue as the site plan shows buildings right up to the edge of the swale (Figure 2). These buildings will be in the area at risk of flooding. The swale may need to be enlarged or modified, potentially the development footprint needs to be reduced, or other mitigation needs to be put in place.

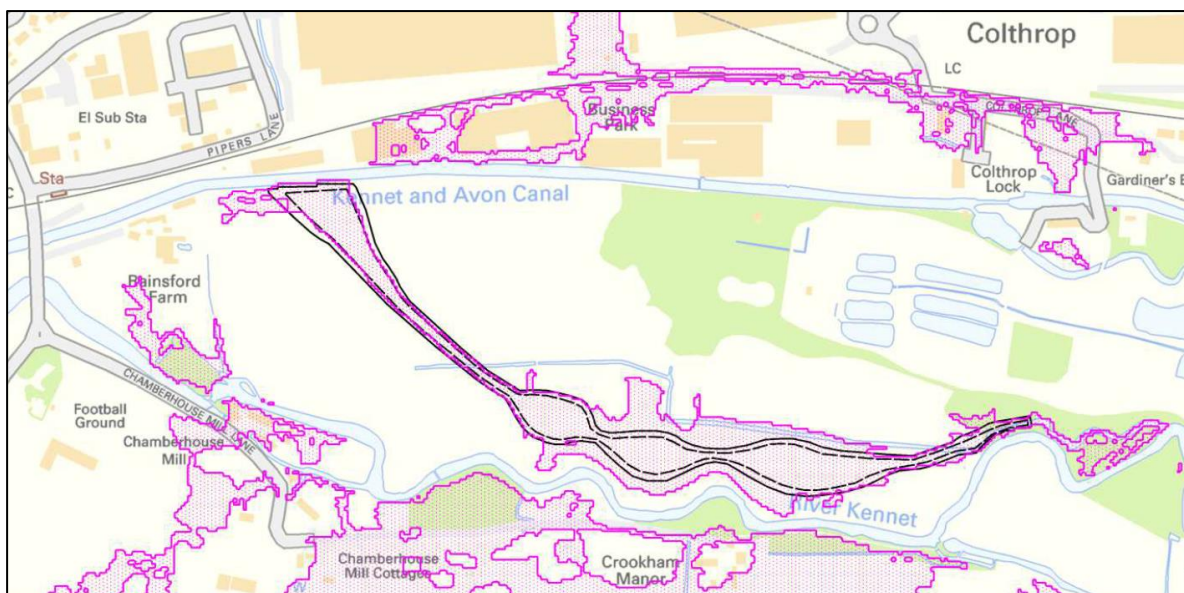


Figure 1: Proposed Swale (black line) and 100 yr+CC Flood Outline (pink shading) (Source: Colthrop Village Flood Mitigation Report)





*Figure 2: Proposed Development Plan (Source: Colthrop Village Flood Mitigation Report)*

There is also concern associated with the existing Thames Water surface water drainage channel (Figure 3). The proposal is to reroute this water into and through the swale to the river. The channel carries surface water runoff from the urban area of Thatcham and the flow was not fully assessed as part of the FRM. If the swale is being used for floodplain flow and storage it will not be available for surface water conveyance. These are likely to happen at the same time. The FRM report itself states that the two mitigations should be separate and surface water mitigation should not be in flood zone 3. Thus, the Thames Water drain should have its own channel outside Flood Zone 3 or designed as additional volume accounted for as a permanent channel within the swale design.



*Figure 3: Existing Thames Water Drainage Channel (Source: Colthrop Village Surface Water Concept Report)*

## 3.2. Surface Water Management Plan

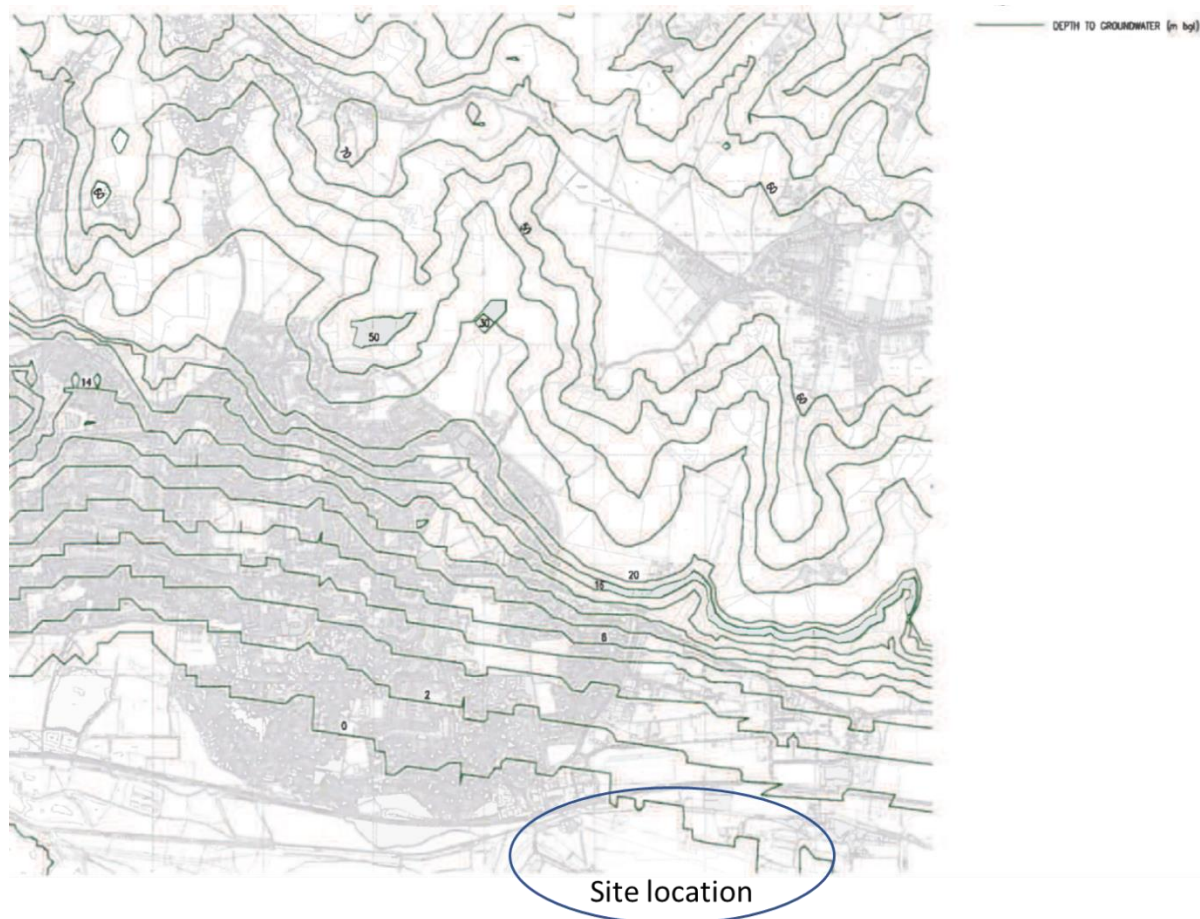
The Colthrop Village Surface Water Concept Report, PBA has been reviewed. The document outlines the issues and calculates greenfield runoff and potential storage requirements but there is no Surface Water Management plan, not even at outline level.

The report suggests that surface water may need to be managed via attenuation rather than infiltration. This is reasonable due to high groundwater throughout the site (Figure 4) and potential contamination in the old paper mill area. Potential storage requirements have been calculated based on the proposed site layout assuming runoff is discharged at Qbar (4.6 l/s/ha) and assuming 40% climate change. The report estimates 660-930m<sup>3</sup> storage will be required per hectare of impermeable area. The impermeable area of the site is estimated to be 15.4 ha, thus between 10,000 m<sup>3</sup> and 15,000 m<sup>3</sup> storage will be required.

The report suggests the attenuation storage volume would be provided within open features and permeable paving. It is difficult to see where these open storage features would fit on the current plan. Most of the public open space is within flood zone 3 (the swale) so cannot be used for SuDS. Although there is sufficient space around the school for runoff from the school building, the housing is very dense with no intervening space available. The plaza could be used for the retail area, either installing geocellular storage beneath it, reducing the ground level so the plaza itself acts as surface storage, or both. The centre of the roundabouts in the road layout could be used similarly but this would be insufficient for the whole of the housing area.

It seems inevitable that there will need to be a lot of buried storage under the developed areas – such as large diameter pipes under roads, geocellular storage, etc. If roads were to be adopted, it may not be possible to include geocellular storage under the road surface.





*Figure 4: Groundwater Contours (Source: Colthrop Village Surface Water Concept Report)*

The overall assessment is that the site does not have an excess of space to add in the SuDS – the swale takes up all/nearly all of the green public open space. The surface water concept report does not detail where the storage might be achieved.

An outline SWMP needs to identify locations for SuDS features and the surfaces they are draining as this drives the design calculations. This would be typical of the early preliminary work done on the SWMP whilst the Masterplan was still developing.

## 4. CONCLUSIONS

1. The Council Drainage Officers comments within the HELAA review were thorough, fair and consistent across all sites analysed.
2. 270 sites were assessed.
3. One site that flooded was identified as suitable and promoted further – it was an employment and retail site which consequently has a lower vulnerability than the residential site at Rainsford Farm.
4. Eight other sites at similar or worse flood risk to Rainsford Farm are awaiting further information before a firm decision is made.
  - Two sites have extant planning permission, one of which is a very low density development with plenty of space for mitigation,
  - One of the sites is water compatible,
  - One of the sites is partially water compatible and partially within the settlement boundary.
5. It is likely the decision to identify Rainsford Farm as unsuitable is also based on other issues (highways, housing density, site contamination, high voltage power lines) not just flood risk.
6. The fluvial flood risk mitigation for the site would seem to be a reasonable strategy but may be undersized.
7. The Surface Water Concept report for the site is little more than a statement of the issues. A more detailed surface water management plan is required to see the effect on the provision of the required storage on the Masterplan.
8. The high density of the proposed development does not allow very much space for surface water management features, and these spaces will have to be supplemented by a large amount of buried storage.

**Prepared By:**

Alison Clare-Dalglish  
Principal Hydrologist

**Approved By:**

Alan Corner  
Head of Flood Risk and Engineering







An aerial photograph of a rural landscape, showing a network of roads, fields, and some buildings. The image is overlaid with a semi-transparent blue layer. The text 'A.C.' is prominently displayed in white on the left side of the lower half of the image.

A.C.

# TN003 HELAA HIGHWAYS REVIEW

## TECHNICAL NOTE

**Job Name:** Rainsford Farm, Thatcham

**Job No:** 332110569

**Note No:** TN003

**Date:** 13 July 2021

**Prepared By:** Ben Taylor

**Subject:** Review of WBDC HELAA Assessment of Highways/Transport

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### 1. Introduction

- 1.1. Stantec and David Lock Associates (DLA) have been commissioned by West Berkshire Council (WBC) to prepare an addendum to the Thatcham Strategic Growth Study (TSGS) 2020.
- 1.2. This Technical Note (TN) has been prepared by Stantec and considers the way in which highways and transport circumstances were considered by WBC in their assessment of sites evaluated in their Housing Economic Land Availability Assessment (HELAA) of December 2020. The assessment provides a review of potential sites for residential and economic development across West Berkshire District and is a key evidence document which informs the West Berkshire Local Plan Review to 2036. This assessment does not allocate sites but seeks to inform the plan making process to determine suitable sites for development.
- 1.3. It is noted that a joint methodology was agreed with four of the other Berkshire Authorities (Reading Borough Council, Royal Borough of Windsor and Maidenhead, Slough Borough Council and Wokingham Borough Council) to ensure a consistent approach was applied across the Western Berkshire Housing Area. Consultation was undertaken on the methodology to ensure that the views of stakeholders (which included development industry representatives and neighbouring authorities) were considered. The full joint methodology was presented in the Berkshire Housing and Economic Land Availability Assessment (HELAA), November 2016<sup>1</sup> forming the basis of the WBDC HELAA and which is the subject of this technical note.

### 2. Stages of Methodology

- 2.1. The HELAA follows five stages which are detailed below, providing a comprehensive review of all the sites.
  - Stage 1: Site Identification
  - Stage 2: Site and Broad Location Assessment
  - Stage 3: Windfall Assessment
  - Stage 4: Assessment Review
  - Stage 5: Final Evidence Base
- 2.2. The primary filtering of the sites in respect of highways and transport occurs at Stage 2b, also classified as 'Suitability'.

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<sup>1</sup> Berkshire Housing Economic Land Availability Assessment Methodology (November 2016)  
<https://info.westberks.gov.uk/CHttpHandler.ashx?id=43267&p=0>



## TECHNICAL NOTE

### 3. Review Stage 2b 'Suitability'

- 3.1. For the version of the HELAA uploaded to WBC's website, Stage 2b is included within Appendix 4 which is a spreadsheet presenting the analysis. At Stage 2b the suitability of 270 sites were evaluated and the relevant criteria to this TN was 'Highways and Access'.
- 3.2. Within the Stage 2b analysis the Highways review is broken down into three further criteria:
- **Access:** Consideration of how access can be gained to the site.
  - **Local Highway Capacity:** A high level consideration of how development of the site would impact the local highway network.
  - **Strategic Road Network:** Comment from Highways England on the potential impact of the site on the SRN.
- Access**
- 3.3. Stantec consider that the level of detail which the WBC highways engineer has considered the access is appropriate for the HELAA exercise. The engineer appears to have evaluated the key considerations for access, such as ability to connect to the adopted highway, visibility requirements and potential to connect to neighbouring areas on foot and by cycle.
- 3.4. The comments offered by the highway officer are constructive and of a level suited to high level feasibility assessment of a site. The comments state technical and practical considerations for access to be delivered and where the officer feels unable to support a site the reason is clearly stated.
- 3.5. Where access strategies have been subject to previous planning applications and found suitable, they appear to have been given some weight in the officer's comments.
- Local Highway Capacity**
- 3.6. The officer's consideration of impact appears to be largely based on knowledge of the highway network and the development potential which is suggested for the site. Stantec consider this to be reasonable for this stage of assessment as a more evidence-based evaluation would require a significant amount of traffic modelling analysis, which is not appropriate for the volume of sites which are still under consideration at Stage 2b.
- 3.7. In certain circumstances (typically related to development quantum) it is identified that a planning application for a development will require a Transport Assessment. The officer also states that in some cases it would be expected that proposals would be required to use WBC's VISSIM model in order to assess their impact.
- 3.8. Where the officer identifies that there are potential issues relating to highway capacity, there is no presumption made as to how those issues should be addressed and therefore WBC do not stray into looking at how deliverable the site would be with off-site mitigation provision. This ensures that sites are dealt with consistently.
- Strategic Road Network**
- 3.9. It appears that all consideration of impact on the SRN has been made by Highways England, with comments fed back via WBC. The majority of sites are simply stated to be unlikely to materially impact the SRN.
- 3.10. In instances where Highways England consider that there may be a material impact as a result of the proposals, they have that a planning application is accompanied by suitable assessments.

## TECHNICAL NOTE

### 4. Conclusion

- 4.1. Stantec has considered the review of highways and access undertaken by WBC when accessing sites as part of the HELAA process. From the information available to Stantec it appears that the highways officer has fairly reviewed each site based on the information submitted and utilising previous planning application information where available.
- 4.2. At the HELAA stage, it is not for WBC to prejudge what measures may be possible and/or necessary to make a site acceptable from a highways perspective. From the information available to Stantec, WBC appear to have adhered to this approach.

### DOCUMENT ISSUE RECORD

| Technical Note No | Rev | Date     | Prepared | Checked | Reviewed<br>(Discipline Lead) | Approved<br>(Project Director) |
|-------------------|-----|----------|----------|---------|-------------------------------|--------------------------------|
| 332110569/TN003   | -   | 13/07/21 | BT       | PB      | PB                            | PB                             |
|                   |     |          |          |         |                               |                                |

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**A.D**

# TN004 THATCHAM BRIDGE REVIEW

## TECHNICAL NOTE

**Job Name:** Rainsford Farm Review  
**Job No:** 332110569  
**Note No:** TN004  
**Date:** 16 June 2021  
**Prepared By:** Stephen Wren  
**Subject:** Rail Overbridge, Colthrop Village, Thatcham

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### 1. Introduction

- 1.1. Stantec have been requested to review drawing 5010.600 Rev A by Stuart Michael Associates, depicting a multiple span highway bridge over the railway and canal. This technical note has been prepared by Stantec's Bridge and Rail team and covers the finding of that review.

### 2. Highway Related Comments

- 2.1. Comments below are based on the bridge team's experience of interfacing with highway designs, rather than a specialist highway engineer.

#### Bridge Width

- 2.2. For this type of project the bridge would typically be wider to ensure a certain amount of future proofing. For example
- 7.3m rather than 6.0m carriageway, or at minimum 6.5m in order to accommodate buses; and
  - 2.0m wide footway rather than 1.0m wide verge on the western side to provide suitable pedestrian amenity.

#### Highway Impact

- 2.3. The design appears to be based on the permanent closing of the one-way section of Piper Lane covering the majority of the existing public highway denoted as Pipers Lane (private industrial estate roads unaffected). The proposed permanent closure extends from south of the existing junction with a private industrial estate to the west and the Kuehne and Nagel property to the east. It is assumed that the section of Piper's Lane west of the electricity sub-station will remain open and be changed into two way traffic to maintain access to the station and the SSE substation. This has the following impacts/potential impacts:
- The unit currently occupied by Thatcham Motor Company will no longer have direct access to public highway; whilst a fence line is adjacent to a private estate road – it is unknown what rights they may have to use it.
  - Existing utilities in Pipers Lane are unknown.
- 2.4. It is assumed that there would be highway improvement works north of the tie-in to the existing Pipers Lane, as at high level this does not appear suitable for the proposed change of use of Pipers Lane.

## TECHNICAL NOTE

### Gradients

- 2.5. The change in levels on both the north and south approaches to the bridge imply **vertical gradients up to approximately 1 in 11.5**. This is **not accessible for pedestrians and cyclists and may therefore be unacceptable under the Equality Act**. A maximum approach gradient of 1 in 20 is the preferred gradient to provide an accessible route. A slacker gradient can be achieved through a tighter crest curve and tying-in the ends of the approach embankments further to the north and south – it would therefore appear be possible to provide a gentler gradient than that proposed.
- 2.6. Whilst reference may be made to Newbury Racecourse overbridge which has steep approach gradients, that scheme was originally developed prior to current standards and legislation. That scheme is more constrained at the ends of the embankments, nevertheless significant effort was expended to mitigate the gradients as far as reasonably possible including:
- Raising ground levels at the tie-ins, by approximately 1m on the junction with Hambridge Road – which for this scheme is equivalent to extending the embankment north to Pipers Way and raising that highway by 1m; and
  - Within the adjacent constraints achieving gradients 1 in 13 on the north side and 1 in 17.5 on the south side

### Horizontal Alignment

- 2.7. Horizontal alignment is straight over the majority of the bridge but curves at the ends. This would likely result in widening the entire bridge to create a bridge of constant width to avoid unnecessary design and construction difficulties. It is recommended that the horizontal alignment is kept straight over the entire bridge length.

### Carriageway Thickness

- 2.8. Minimum carriageway thickness should be 120mm at the channel line, rather than the 100mm quoted.

## 3. Rail Related Issues

- 3.1. Effects on the Overhead Line Equipment (OLE) could have significant cost and programme implications. The bridge design should be developed on the basis on minimising these, although some aspects such as earthing and bonding will be unavoidable.
- 3.2. Neither OLE records nor discussion with Network Rail have been provided. The existing OLE conductor wire height will be at a high level to give safe clearance to vehicles using the nearby existing level crossing. The OLE itself has a system depth that is live and on top of that there is a need for electrical clearance to the 25,000V potential. In the absence of OLE information, the proposed clearance of 7.0m sounds reasonable.
- Clearance above track level needs to be agreed with NR, there is a risk that this may be required to be greater than 7.0m
  - Source of track level on SMA drawing unknown, risk of actual track level being higher than this.
- 3.3. **The proposed bridge alignment appears to clash or be close to an existing OLE mast** visible on publicly available satellite imagery (such as Google Maps). **This is a significant issue with the proposed design.**

## TECHNICAL NOTE

- Modifications to the OLE to enable the bridge may affect numerous OLE masts and require noisy night-time working to install new OLE foundations and affect train services during construction.
- Trackside topographical survey of the track, OLE wires and masts, OLE records from Network Rail, together with OLE engineer design input is required. This would enable to review the interface of the existing OLE and/or an outline design of modifications to the OLE systems.

3.4. The existing level crossing will not be able to be fully closed following the bridge construction as:

- The level crossing provides step-free access for passengers between the platforms at Thatcham Station (installation of lifts to the existing station footbridge if there is passive provision within the existing structure would cost around £1m)
- The level crossing provides a crossing for pedestrians at a gradient compliant with the Equality Act.
- The level crossing provides a crossing for cyclists at a gradient compliant with cycleway design standards.
- It is unknown if there is a need to provide for any abnormal vehicular load movements that nearby organisations may require that might not be accommodated over the proposed proposed bridge due to horizontal alignment issues.

### 4. Structural Issues

- 4.1. The proposed abutments and piers have been set at different orientations, it is strongly recommended that these are placed parallel to one another at the same orientation to avoid unnecessary design and construction difficulties with the bridge.
- 4.2. The SMA drawing appears to be a highway drawing rather than a bridge drawing, as such structural details such as structural continuity over the piers and abutments, and the piled foundations do not represent likely bridge engineering details. Detailed comments the bridge details are therefore not offered.
- 4.3. Adequacy of the existing culvert to support the proposed temporary road is unknown.
- 4.4. Interface of northern abutment foundations with the existing culvert is unknown, with a consequent risk of a clash or damage to the culvert.

### 5. Approximate Costing

- 5.1. Highway over rail bridges construction costs include a lot of abnormal costs, as a result significant costs can be omitted when using a bottom-up costing methodology. Therefore, the cost estimate in this note is based on a top-down costing methodology, by comparison with similar highway over rail bridges installed to support housing developments.
- 5.2. Two schemes with comparable scope and quoted construction costs in the technical press are Newbury Racecourse overbridge (single 25m span over the railway) £6.7m in 2015; Borehamwood interchange (multiple spans over an electrified railway and a parallel highway) in Essex £11.8m in 2019. Based on this and other experience, at current prices we would estimate the construction cost to be around £12m.



## TECHNICAL NOTE

5.3. Project cost items that can be estimated are listed below.

| Item  | Estimate Basis                    | Cost        |
|---|-----------------------------------|-------------|
| Construction cost   | Top-down estimate                 | £12m        |
| Professional fees   | 15% of construction cost          | £1.8m       |
| Highway authority inspection fees   | 8% of construction cost           | £1.0m       |
| Highway authority commuted sum  | 35% of construction cost          | £4.2m       |
| Network Rail incurred costs (staff costs, approvals, site attendance to ensure rail safety) | Allowance (excluding OLE changes) | £1m         |
| <b>Sub-total</b>  |                                   | <b>£20m</b> |

5.4. There are other project costs and potential project costs including:

- OLE changes to accommodate bridge alignment – unknown
- Network Rail Property shared value for agreeing land access over the railway – their starting point is typically 50% of the uplift value to the land resulting from NR granting a right to bridge their railway
- Utility diversions due to stopping up – unknown
- Other land costs – unknown
- Costs associated with floodplain compensation – the southern embankment has a significant footprint within the floodplain. Consideration may be required for an additional southern span on the viaduct to avoid this.
- Costs associated with providing a bridge that has a more accessible approach gradients than the proposed 1 in 11.5.

## 6. Conclusion

- 6.1. Stantec has undertaken a review of a bridge concept drawing for the Rainsford Farm proposed development. A number of potential issues have been identified with the proposal including carriageway widths, lack of suitable gradients for Equality Act compliance, substantial clashes with Rail OLE.
- 6.2. Estimated costs are in the order of £20m excluding a number of factors. Moreover, the new bridge would also necessitate the provision of lifts at the railway station as closure of the adjacent level crossing would remove the current level access between platforms. This would also increase costs.

### DOCUMENT ISSUE RECORD

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| 332110569/BRI/01  | P01 | 16/06/2021 | Stephen Wren | BT      | BT                         | PB                          |
|                   |     |            |              |         |                            |                             |

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