

South Warwickshire Local Plan Part 1 – Issues and Options Consultation

Land south of M40 J15, Longbrook

Representations on behalf of Rainier
Developments Limited

March 2023

Turley

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1. Introduction

- 1.1 These representations have been prepared by Turley, on behalf of Rainier Developments Limited (hereafter referred to as 'Rainier'), in response to the South Warwickshire Local Plan ('SWLP') Part 1, Stage 2: Issues and Options consultation (January 2023).
- 1.2 These representations are submitted in the context of Rainier's land interests on land south of the M40 J15, Longbrook (hereafter referred to as 'the Site'), which presents a sustainable and deliverable opportunity for new employment development.
- 1.3 A Vision Document (February 2023) prepared by Corstophine&Wright is enclosed at **Appendix 1**, which provides an overview of the key technical opportunities and constraints of the Site, and demonstrates why South Warwickshire is well placed to deliver significant employment growth and how land to the south of the M40 J15 represents a significant opportunity to meet this need.
- 1.4 This report comprises the following:
 - **Section 2:** Overview of the Site
 - **Section 3:** Representations to the Consultation Document
 - **Section 4:** Conclusions of the Report.
- 1.5 Rainier previously made representations to SWLP Call for Sites and Scoping consultations in June 2021 to promote the Site.

2. The Site and Surroundings

- 2.1 The Site comprises two fields on either side of the A429, south of M40 J15. The fields form part of the Sherbourne Park Estate. Both fields are currently in arable use. The western field is roughly triangular in shape with an area of 9.04 hectares. It has significant frontage to the A46 (Stratford Road) and the associated M40 J15 roundabout to the north, Watery Lane to the west, and the A429 to the east. The southern boundary is shared with private residential land.
- 2.2 The eastern field is irregular in shape with an area of 6.78 hectares, owing to the meandering flow of Longbridge Brook, which defines its eastern boundary. The western site boundary includes significant frontage to the A429 and a local access road serving a Highways England depot. This access is also part of a National Cycle Route (Route 41) which crosses the M40 to the north.
- 2.3 The site is located in a sustainable location, within close proximity to the market town of Warwick and Sherbourne village. Sherbourne Conservation Area is located to the west of the Site, as identified in Section 2.1 of the attached Vision Document.

Accessibility

- 2.4 The Site is bisected by the A429, a major road connecting Warwick and Cirencester. Adjacent to the Site, the A429 consists of a single two-way carriageway subject to a speed limit of 50mph. To the north, the A429 connects to Junction 15 of the M40. It is proposed a new four arm roundabout junction would provide access to the Site, which would avoid intensification of site access points, allowing access to both parcels from a single junction.

Flood Risk and Drainage

Flood Risk

- 2.5 The River Avon is located approximately 750m to the south of the Site. The Horse Brook tributary of the River Avon flows to the north and along the eastern boundary of the Site. The Longbridge Brook is located 500m to the north east, and the Sherbourne Brook is located 250m to the south west.
- 2.6 According to the Environment Agency ('EA') the majority of the Site is located within Flood Zone 3 (High Probability - Land having a 1 in 100 or greater annual probability of river flooding) and Flood Zone 2 (Medium Probability - Land having between a 1 in 100 and 1 in 1000 annual probability of river flooding). These Flood Zones are attributed to the Horse Brook. However, the Flood Zones are based upon outdated and strategic level data. The Flood Zones do not consider the Stratford Road or the Warwick Bypass which are located upon embankments elevated above the floodplain. Therefore, the current Flood Maps for Planning do not accurately represent the flood risk at the Site.
- 2.7 To address this, a new bespoke hydraulic model of the Horse Brook was commissioned and has been prepared by BWB Consulting. The model has been reviewed by the EA and it was approved in January 2023. The model is based upon detailed topographical survey of the watercourses and hydraulic structures, and it includes the latest aerial

topographical survey (LiDAR) of the floodplain. This hydraulic model provides an up to date and more accurate representation of flood risk from the Horse Brook to the Site and the local area. The model identifies that the western parcel of the Site should be entirely removed from the 1 in 1000-year floodplain, therefore this parcel should be treated as Flood Zone 1. The eastern parcel is also shown to be largely outside of the 1 in 1000-year floodplain, it is only the eastern boundary that falls within the 1 in 100-year and 1 in 1000-year floodplain (equivalent to Flood Zone 3 and Flood Zone 2 respectively). An extract of the approved model is provided in **Appendix 2**.

- 2.8 The EA's risk of Flooding from Surface Water (RoFSW) mapping has also been reviewed which shows a close correlation to the detailed floodplain mapping, giving further confidence that the flood risk to the majority of the Site is low.

Surface Water Drainage

- 2.9 The Site is understood to currently drain through a combination of limited infiltration into the ground and overland flows to the local watercourse, which is expected to be maintained throughout any future development of the Site.

Other environmental considerations

- 2.10 The enclosed Vision Document demonstrates that:

- The Site is very much transitional in terms of landscape character, sitting between the majority infrastructure of the M40 and its associated roads from J15. This, coupled with existing robust vegetation along the Site's boundaries, reduces the site's sensitivity in landscape and visual terms. Any proposals will include buffering of sensitive receptors, such as a strong landscape framework through a landscape-led masterplan approach.
- The Site is not constrained in terms of ecology, it comprises intensively managed agricultural land. There are opportunities for habitat creation to ensure any proposals deliver the necessary biodiversity net gain.
- The nearest heritage assets are the nearby Sherbourne Conservation Area to the west, which includes the grade II* Sherbourne Park and grade II* Church of All Saints, along with a number of other scattered listed buildings. There are also three scheduled monuments to the south and east. Any proposals will include increased boundary planting to strengthen the existing well-vegetated edges of the Site to mitigate any potential impacts on heritage assets.

Site Suitability for Employment Development

- 2.11 The Site's location adjacent to the Strategic Road Network ('SRN') is a unique opportunity to facilitate the delivery of employment/ commercial development in a location which will assist in the reduction in carbon emissions and congestion through placing new employment development close to the labour and consumer markets, including Warwick, Leamington Spa, and Stratford-upon-Avon, which are all in close proximity.

- 2.12 Reflecting on the site's proximity and sustainable connections to the SRN, Warwick, Leamington Spa, Stratford-upon-Avon and surrounding villages, the Site is a highly sustainable location and can contribute to South Warwickshire's economic and employment needs. Indeed, it's location provides connections to the wider supply chain within South Warwickshire as well as being ideally placed to be developed in accordance with the emerging high tech / knowledge industries championed within the Midlands Engine: Ten Point Plan for Green Growth' (May 2021).
- 2.13 With regard to flood risk, the Vision Document for the Site (**Appendix 1**), illustrates how the layout of the proposed employment development will be arranged to avoid the Horse Brook floodplain, thus ensuring that the development is at a low risk of flooding. This approach will also ensure that no floodplain will be displaced and that the flood risk in the wider area will be unaffected by the development.
- 2.14 Additionally, the development will be offset by a minimum of 8m from the watercourse to the top of the bank, to provide an ecological buffer and allow for continued access and maintenance. To provide further flood resilience, finished floor levels of the proposed employment site will be set at a minimum of 300mm above the 1 in 100-year flood level including the central climate change allowance.
- 2.15 For surface water drainage, an appropriate Surface Water Management Strategy which complies with the latest local and national advice will be implemented on the Site to attenuate the increase in surface water runoff caused by the proposed employment development. The rate at which the runoff is discharged into the watercourse will be restricted to the equivalent greenfield runoff rate, preventing an increase in flows leaving the Site and thus ensuring that the development does not have a detrimental impact upon flood risk elsewhere.
- 2.16 Through the application of Sustainable Urban Drainage Systems ('SuDS'), surface water will be stored within the Site and subjected to stages of treatment to guarantee that the water quality in the wider area is protected. Wherever possible, above ground SuDS will be used to enhance the aesthetic amenity of the development and provide valuable habitats for the local wildlife. The surface water attenuated storage provided will be located outside of the floodplain and appropriately sized to accommodate the 1 in 100-year storm including an allowance for climate change. Example SuDS features that could be incorporated into the proposed development include attenuation basins, filter drains, permeable paving, and swales.
- 2.17 The Vision Document (**Appendix 1**) provides further information in regard to the issues and opportunities associated with the Site, specifically in respect of landscape and visual considerations, ecology and protected species, the historic environment, access, and traffic noise; the vision and principles associated with the key deliverables of the Site; and a concept Masterplan.
- 2.18 The following section of this Report provides a response to the SWLP consultation document (2023).

3. Representations

- 3.1 This Section sets out Rainier’s response to the SWLP Stage 2: Issues and Options consultation (January 2023), taking each question relative to the Site in turn.

Chapter 3: Vision and Strategic Objectives

Q-V3.1: Do you agree that the Vision and Strategic Objectives are appropriate?

Issue V1: Vision for the Local Plan

- 3.2 Rainier are supportive of the overall vision of the Plan, which ultimately seeks to meet South Warwickshire’s sustainable development needs to 2050.
- 3.3 Rainier are however concerned that the Vision does not wholly acknowledge the importance of meeting the employment needs of South Warwickshire and it does not recognise the significant role that employment growth will play in meeting development needs up to 2050.
- 3.4 The plan’s focus should be equally between housing **and** employment needs, as both support each other and are integral to the growth of the area.
- 3.5 Rainier is supportive of the five overarching principles that have been established to underpin the Vision for the Plan; and their land south of M40 J15 will be able to meet these as follows:
- **A climate resilient and net zero carbon South Warwickshire** – Rainier will ensure that any development proposed on the Site will be climate responsive, addressing both operational outputs and embodied carbon so that it does not create more emissions that are offset or stored up.
 - **A well-designed and beautiful South Warwickshire** – The design evolution for the Site has been informed by landscape and visual considerations, which has identified key points to be implemented, to ensure that any future development of the Site will be well-screened and there will be no detrimental impact on the surrounding area.
 - **A healthy, safe, and inclusive South Warwickshire** – The Site is highly accessible, with good access to existing bus services. Also, the delivery of employment use on the Site will enable several Key Deliverables across the region, for example enhancing the existing cycle route 41, and providing new pedestrian connections, as shown within the Vision Document.
 - **A well-connected South Warwickshire** – The Site is very well-connected, in close proximity to the M40 Motorway, which presents an opportunity to support the Midlands Engine (a demonstration of the government’s commitment to making the Midlands a powerful engine for economic growth).
 - **A biodiverse and environmentally resilient South Warwickshire** – The Site largely comprises two fields which are considered to be of little ecological value.

Also, a sensitively designed development that incorporates appropriate mitigation and enhancement will have potential to deliver a significant net gain in biodiversity.

Issue V2: Vision for Places

- 3.6 Figure 6 of the Plan sets out the ‘Suggested location for Visions for Places within the Development Plan’; however Rainier have concerns that there is no specific definition for what comprises ‘strategic’ or ‘non-strategic’, i.e., a definition for which policies and site allocations would fall under SWLP Part 1 and SWLP Part 2 respectively.
- 3.7 It is therefore recommended that the SWLP Part 1 Plan is amended to include a definition for ‘strategic growth’, for example regarding strategic employment sites, these should be defined as sites of 5 hectare or over, and/or 20,000 sqm of office floorspace to be considered in the SWLP Part 1 Plan, and all smaller sites to be considered in the Part 2 Plan.

Issue V3: Strategic Objectives

- 3.8 The proposed Strategic Objectives set out further detail for how the Local Plan Vision will be delivered in South Warwickshire. We support these objectives and have therefore set out how the delivery of employment development on the Site can meet them (where relevant), whilst focussing on high quality design:
- **Providing infrastructure in the right place at the right time** – Future development will present an opportunity to promote active and sustainable travel, enhancing connectivity and infrastructure for business. Opportunities will also arise for multi-purpose green and blue infrastructure including buffer screen planting, ponds, SuDS, and enhanced biodiversity.
 - **Developing opportunities for jobs** – One of the key deliverables for the Site is to create jobs that are accessible locally, building on South Warwickshire’s strong and diverse economy.
 - **Contributing towards Net Zero Carbon targets** – Rainier are committed to ensuring that the new development will not cause a net increase in carbon emissions and it will be resilient to a changing climate. This includes the provision of an EV charging hub on site.
 - **Creating attractive places** – As illustrated on the Preliminary Site Layout Plan (in the Vision Document), the scale and diversity of potential development on the Site seeks to deliver a commercial masterplan which recognises the importance of the buffer zones to protect adjacent conservation and ecological zones. Consequently, the development will be built to a high quality, catering for employment needs and which respect the setting of the surrounding settlements.
 - **Protecting and enhancing our heritage and cultural assets** – The Site does not contain any designated heritage assets; however, beyond the Site there are several designated heritage assets, and Sherbourne Conservation Area is located to the west of the Site. The Vision Document therefore appraises how this context provides distinctive place-shaping opportunities for future development

and identifies the specific elements that will be considered in the evolution of the proposals for the Site.

- **Improving the health, safety, and quality of life of our communities** – Development of the Site has the potential to deliver wider benefits to the community, including an improved cycle way along the A429, a new pedestrian path linking Sherbourne and Bamford Village, potential to reduce traffic noise, and a significant country park (as shown in Appendix A of the Vision Document) which provides a buffer from Sherbourne Conservation Area.
- **Connecting people to places** – The Site is ideally located for access to the wider SRN and connections to the whole of the UK, including the A429 (a major road connecting Warwick to Cirencester), M40 Motorway (London to Birmingham Motorway), and the A46 (providing access to Cheltenham, Broadway, Stratford-on-Avon, Coventry, Leicester, Newark and Lincoln).
- **Protecting and enhancing our environmental assets** – It is Rainier’s intention to maximise opportunities for enhancements across the Site and specifically, the proposed employment development can mitigate impacts on issues such as drainage, heritage, landscape, and biodiversity and deliver real benefits for the community.

Chapter 4: Meeting South Warwickshire’s Sustainable Development Needs

Q-I1: Please add any comments you wish to make about the Sustainability Appraisal, indicating clearly which element of the appraisal you are commenting on.

- 3.9 Whilst a Sustainability Appraisal (‘SA’) has been prepared to support the emerging Plan, Rainier are concerned that the five potential options for growth in the area are all related to housing growth, no option explores how employment needs will be met (this is an issue with the wider plan, as per our response to Q V3.1 and Q S7.2 and the plan’s need to focus equally on housing and employment growth).
- 3.10 The SA should therefore consider separate options for how employment needs will be delivered and met.

Q-I2: Please select the option which is most appropriate for South Warwickshire

Option I2a: Set out infrastructure requirements for all scales, types, and location of development

- 3.11 Rainier support Option I2a which would result in the SWLP Part 1 Plan setting out the infrastructure requirements for all scales, types, and location of development, to be applied equally across South Warwickshire.
- 3.12 In light of the new growth required across South Warwickshire up to 2050, new infrastructure is also needed to support this growth, and this should be considered as a strategic matter, as there will be cross-boundary infrastructure requirements.
- 3.13 Part 1 of the SWLP seeks to set the Vision, Strategic Objectives and Strategic Policies for South Warwickshire and therefore the infrastructure that is required to

accommodate this strategic growth should be considered now, at this stage of the plan making process.

- 3.14 If infrastructure delivery was left to Part 2 of the SWLP, this would create a risk of a fragmented approach to infrastructure delivery across South Warwickshire, which could ultimately stall potential development sites in the future.
- 3.15 It is therefore recommended that the emerging Part 1 Plan sets out the infrastructure requirements for South Warwickshire now, where strategic site allocations are identified, alongside the infrastructure requirements for the entire plan area. This approach is in accordance with Paragraph 8 of the NPPF which acknowledges the importance of coordinating the provision of infrastructure with the objective of building a strong, responsive, and competitive economy.

Q-I4.1: Should we include a policy to safeguard specific infrastructure schemes within the SWLP?

- 3.16 Yes, Rainier would welcome a policy in the emerging Plan that seeks to safeguard specific infrastructure schemes across South Warwickshire.
- 3.17 Paragraph 11 of the NPPF states that growth and infrastructure should be aligned and as such a safeguarding infrastructure policy is required in the emerging Plan, to align with the strategic growth policies. This approach would also support the overarching Vision and Objectives of the Plan.

Q-S1: Please select the option which is the most appropriate for South Warwickshire.

Option S1a: Identify Strategic Green and Blue Corridors in advance of the Local Nature Recovery Strategy being produced

- 3.18 Rainier consider Option S1a to be the most appropriate for South Warwickshire, where information can be used from the soon to be updated Sub-Regional Green Infrastructure Strategy, as well as additional evidence, to help identify Green Infrastructure corridors which can be used to help determine the growth strategy for the wider area.
- 3.19 Furthermore, Rainier recommend that the plan identifies which Green and Blue Corridors identified within the Plan could be utilised as Suitable Alternative Natural Green Spaces ('SANGs'). This is due to the statutory requirements of Biodiversity Net Gain ('BNG'), which requires all new developments within South Warwickshire to compensate for any impacts on habitat, either through enhancing existing habitats or by creating new ones (if impacts are unavoidable).
- 3.20 It would therefore be beneficial for the Plan to identify the appropriate SANGs that can be used by the developments (that are unable to deliver BNG on-site) which will help South Warwickshire meet its growth needs over the next few years, in advance of the Local Nature Recovery Strategy being produced.

Q-S3.2: Please select the option which is most appropriate for South Warwickshire

Option S3.2a: Prioritise brownfield development only when it corresponds with the identified growth strategy, or if it can be proven that the development is in a sustainable location or would increase the sustainability of the area.

Option S3.2b: Prioritise development on brownfield land, incorporating existing buildings into development proposals wherever possible, irrespective of its location.

Option S3.2c: None of the above.

3.21 Rainier support the principle of using brownfield land for development, however it should be acknowledged that there is insufficient brownfield land capacity to meet the growth needs of South Warwickshire up to 2050. Rainier therefore support Option S3.2c above.

3.22 As recognised within the plan itself, brownfield sites are frequently found within town centres, and can therefore often accommodate a higher density development. However, a strategic employment site needs to be located in strategic locations, adjacent to the SRN and other transport options.

3.23 It is therefore recognised that although brownfield land could be prioritised for some development types within the plan (for example, residential development), it is not always the most suitable option for other uses such as employment. Ultimately, the plan should seek to prioritise the most sustainable and suitable sites to meet the growth needs of South Warwickshire.

Q-S7.2: For each growth option, please indicate whether you feel it is an appropriate strategy for South Warwickshire.

Option 1: Rail Corridors

Option 2: Sustainable Travel

Option 3: Economy

Option 4: Sustainable Travel and Economy

Option 5: Dispersed

3.24 As set out earlier in these representations, Rainier are concerned that the consultation document is too narrowly focused on the delivery of solely residential development, with insufficient consideration for how employment growth across South Warwickshire will be delivered; this concern is also reflected within the growth options presented above.

3.25 For example, Growth Option 3 is labelled 'Economy', however this Option is focussed on the delivery of homes 'in close proximity to employment'; rather than seeking to direct employment and economic growth to the most sustainable and suitable locations, which are usually focussed close to existing motorway junctions and the wider strategic highways network.

- 3.26 As established within the NPPF (Paragraph 20), strategic policies should set out an overall strategy for the pattern, scale, and design quality of places, making sufficient provision for employment, housing, retail, leisure, and other commercial development. Rainier are concerned that the Plan does not currently consider each of these elements to be delivered alongside each other, and ultimately there has been too much focus in respect of housing.
- 3.27 It is therefore recommended that the growth options above are updated, to reflect how all development needs within South Warwickshire can be met, in accordance with an updated Vision for the Plan which recognises the importance of employment growth to support the overarching strategy for the Plan.

Chapter 5: Delivering South Warwickshire's Economic Needs

Q-E1.1: Do you think that the HEDNA evidence provides a reasonable basis for identifying future levels of employment need across South Warwickshire?

- 3.28 The HEDNA¹, published in November 2022, represents the most up to date assessment of South Warwickshire's employment land requirements, concluding an overall need for 248.1ha of employment land in Stratford-on-Avon District and 97.2ha in Warwick District over the period to 2050².
- 3.29 The largest proportion of this overall need is attributable to general industrial (including non-strategic B8) which accounts for 240.9ha and 81.4ha of the requirement respectively across each District. The employment land requirement for offices is much lower at 7.2ha in Stratford-on-Avon and 15.8ha in Warwick District³.
- 3.30 These requirements exclude land for strategic B8 warehousing, the need for which has been assessed separately in the HEDNA at a sub-regional level, equating to a requirement for some 709ha of land across Coventry and Warwickshire over the period to 2050⁴.
- 3.31 The HEDNA assesses quantitative needs using a variety of methods consistent with PPG, concluding that a labour demand approach based on baseline forecasts produced by Cambridge Econometrics (CE) is the most representative scenario for assessing office needs. In view of the limitations of this approach for assessing industrial land needs, projections based on an annualised average of past completions over the period from 2011/12 to 2019/20 are used to establish employment land requirements for local industrial and non-strategic warehousing uses.
- 3.32 Rainier broadly support the approach to assessing needs adopted in the HEDNA but has concerns regarding the employment land requirements established for South

¹ Iceni Project Limited (2022) Coventry and Warwickshire Housing and Economic Development Needs Assessment, Final Report, November 2022

² Stratford-on-Avon District Council & Warwick District Council (2023) Stage 2: Issues and Options Consultation – January 2023, Table 8.

³ Ibid.

⁴ Iceni Project Limited (2022) Coventry and Warwickshire Housing and Economic Development Needs Assessment, Final Report, November 2022, Table 10.19

Warwickshire, in particular Warwick District, where it is felt the Authorities should be planning for a higher overall requirement.

- 3.33 Furthermore, whilst the methods used are broadly consistent with PPG, as a sub-regional study the HEDNA does not robustly consider trends at a sub-area level or the balance between supply and demand which will be key factors in influencing the land requirement and locations where employment growth should be directed.
- 3.34 These omissions, which represent important steps in forming a complete view of future employment needs for the emerging Local Plan in line with PPG, are explored in more detail in response to Q-E1.2 below.

Q-E1.2: If your answer to E-1.1 is No, what would be a more appropriate approach to calculating future needs for this Local Plan?

- 3.35 Rainier support the use of a **labour demand approach** for assessing future office needs in South Warwickshire but would highlight – as recognised at para 9.7 of the HEDNA – that these take account of expected economic performance moving forward relative to past trends⁵.
- 3.36 It is evident that potential above trend job creation in sectors likely to occupy office and R&D space (for example by interventions or targeted investments at known Major Investment Sites identified under Issue E7 and in the Draft Economic Strategy for South Warwickshire) is unlikely to be reflected with no adjustments seemingly made to account for this. In a departure from best practice, the baseline CE forecast has also not been compared to another forecast to test its representativeness. Such an exercise might indicate different rates of growth from which a preferred forecast and scenario could be derived which best reflects the economic opportunities presented in South Warwickshire and growth potential of high value sectors being targeted by the authorities.
- 3.37 Rainier would also highlight that unlike the other Coventry and Warwickshire authorities where a 2-year margin for flexibility has been added to the land requirement, no buffer has been added to the office requirements for Stratford-on-Avon or Warwick, this seemingly ‘due to data issues’. The HEDNA therefore recommends the authorities to *‘treat figures a minima, but this should be informed by detailed consideration of the office stock and trends in losses’*⁶.
- 3.38 The above limitations are perhaps reflective of complexities of undertaking this exercise across multiple local authorities, but nonetheless do cast a degree doubt over whether the office land requirement in Table 8 of the Issue and Options Consultation document is ambitious enough and representative of Warwick District’s growth potential, noting the ambitions to growth the economy in the draft Economic Strategy as well as Warwick/Leamington’s cited status as one of the main office markets in

⁵ Icen Project Limited (2022) Coventry and Warwickshire Housing and Economic Development Needs Assessment, Final Report, November 2022, para 9.7

⁶ Icen Project Limited (2022) Coventry and Warwickshire Housing and Economic Development Needs Assessment, Final Report, November 2022, para 11.15

Coventry and Warwickshire⁷. Indeed, owing to this status Warwick/Leamington is a location where it is expected that future office supply will be focussed⁸.

- 3.39 In terms of assessed industrial land requirements, Rainier also broadly support the HEDNA's use of past completion trends but would note that projected requirements for Warwick are comparatively low compared to the other Coventry and Warwickshire authorities, including Stratford-on-Avon in the South Warwickshire context. The HEDNA rightly identifies that this distribution has been influenced by land availability, however in the context of recent demand, the cited growth potential of low carbon transport cluster and the areas role in the heart of the Midlands engine, Rainier consider that the Authorities should be planning for a higher requirement, particularly in Warwick District.
- 3.40 It is of note the HEDNA's conclusion that circa 81.4ha of employment land would be needed between 2021 and 2050 is currently based on the recorded take-up between 2011/12 and 2019/20. This has then been multiplied over the plan period to 2050, before a margin for flexibility, equivalent to a further five years, is then added. Whilst a detailed breakdown of annual take up is not presented in the HEDNA, interrogation of Warwick District's latest Annual Monitoring Report (AMR)⁹ shows a comparatively low level of employment land being delivered between 2011/12 and 2015/16, averaging 2.2ha per annum. In more recent years this has increased and between 2016/17 and 2020/21 averaged 3.9ha per annum over 5 years. Evidently, if employment land in Warwick continues to be taken up at the rate seen over the last five years, then some **132.6ha** of industrial land could be needed in the District over the plan period when consistently applying a five year buffer like the HEDNA.
- 3.41 It is Rainier's view that the quantitative requirements presented in the HEDNA should be treated as a minimum and consideration given to a higher requirement for Warwick District to avoid unduly constraining the market.

Other limitations

- 3.42 As outlined above, the HEDNA does not consider the balance between supply and demand in line with PPG, resulting in gaps in the evidence needed to form a complete view of future employment needs and policies in the emerging Local Plan. This is important in the context of the draft Economic Strategy for South Warwickshire, which seeks to ensure an adequate supply of employment land and affordable employment premises in the right locations through the SWLP¹⁰. These objectives having seemingly been set in response to identified opportunities for significant growth and investment but also the perceived threat that the existing supply of employment land and space *"may not be suitable for business needs"*¹¹.
- 3.43 To address these gaps it is recommended, in line with PPG for assessing economic needs, that the analysis in the HEDNA is supplemented with a sub-area analysis of

⁷ Ibid. para 3.9

⁸ Ibid, para 3.41

⁹ Warwick District Council (2021) Annual Monitoring Report 2020/21

¹⁰ Ibid. p22

¹¹ Ibid. p19

market demand¹² to gain a deeper understanding of whether there are specific requirements in the local market which affect the types of land or premises needed¹³.

- 3.44 The HEDNA already recognises the potential greater role of South Warwickshire in accommodating strategic B8 warehousing, including along key corridors along the M40 and A46¹⁴, however further consideration of location and premises requirements across other sectors being targeted by the Authorities is also recommended to help inform potential locations for employment growth. Such an analysis is also important for assessing the balance between supply and demand to identify whether there is a mismatch between quantitative and qualitative supply of and demand for employment sites. This will enable an understanding of which market segments are over-supplied to be derived and those which are undersupplied¹⁵

Q-E3: Please select the option which is most appropriate for South Warwickshire

Option E3a: include a policy expanding on SDC's current existing policy; or

Option E3b: Have separate policies for individual sectors; or

Option E3c: Include a policy that secures employment strategies through S106); or

Option E3d: None of these

- 3.45 Rainier is supportive of the emerging Local Plan's objectives of diversifying the economy to help prevent out-commuting and retain residents within South Warwickshire. A policy which expands on SDC's current existing policy (Option E3a) setting the principles for economic activity, how much employment provision needs to be provided across each district and where this activity will be focussed (i.e. employment growth locations) is considered to be the most appropriate approach for South Warwickshire in the emerging Local Plan.
- 3.46 Importantly, the plan should ensure that there is sufficient and appropriate employment land provision available to meet the existing and future needs across all employment sectors in locations where industry want to invest.
- 3.47 Whilst being informed by assessed needs by sector, there is a risk that having separate policies for individual sectors could be viewed as a limit on the amount of land and floorspace to be delivered, in turn acting as a constraint to growth and the Authorities' ability to respond flexibly to changing market conditions and unforeseen needs over the Plan period.

¹² Paragraph: 026 Reference ID: 2a-026-20190220

¹³ Paragraph: 032 Reference ID: 2a-032-20190722

¹⁴ Icen Project Limited (2022) Coventry and Warwickshire Housing and Economic Development Needs Assessment, Final Report, November 2022, para 11.25

¹⁵ Paragraph: 029 Reference ID: 2a-02920190220

Q-E6: Please select the option which is most appropriate for South Warwickshire

Option E6a: Include a policy which protects South Warwickshire's economic assets or Option E6b: Do not include a policy protecting all these economic assets

3.48 Rainer would support the inclusion of a policy which protects South Warwickshire's economic assets on the basis that any such policy is also accompanied by policies which ensure that there is sufficient and appropriate employment land provision available to meet the existing and future needs across all employment sectors in locations where industry want to invest.

Q-E7.1 Please select the option which is most appropriate for South Warwickshire

Option E7.1a: Include a policy directing employment to the Core Opportunity Area; or

Option E7.1b: Do not include a policy directing employment to the Core Opportunity Area

3.49 Rainier support the inclusion of a policy directing employment to the Core Opportunity Area as a means of encouraging inward investment in the most accessible parts of South Warwickshire. South Warwickshire's strategic gateway location on the M40 and accessibility to London, the Chiltern Mainline and Birmingham, has already made the area an attractive location to invest and grow a business and capitalising on this will be important for achieving a number of objectives set out within the draft Economic Strategy for South Warwickshire.

3.50 South Warwickshire also exhibits a concentration of skilled residents with approximately 49% of the population have attained high level NVQ4+ qualifications¹⁶. Currently, however, workplace earnings fall below resident-based earning indicating that the areas higher skilled worker are commuting outside of the area for work. Placing new employment development close to labour and consumer markets in the Core Opportunity Area would evidently help to reduce the need to travel and encourage more sustainable patterns growth.

3.51 For these reasons it is considered that Warwick, as one of the main urban areas, should remain focal point for future employment growth in the Core Opportunity area. This reflects wider economic objectives and the potential to attract and accommodate investment in higher value sectors offering employment commensurate to the skills of the workforce and high proportion (58%) of residents living in Warwick and Leamington who already working in the top 3 occupational groups (Managers, directors and senior officials; Professional occupations, Associate Professional & Technical occupations)¹⁷.

3.52 Rainier consider that opportunities to build on existing clusters of employment to the south west of Warwick, an area identified in earlier consultations as a potential 'Growth Hub' location, should continue to be explored. This is a highly sustainable and proven employment location with potential to accommodate a mix of employment close to labour supply in Warwick, but also other parts of South Warwickshire owing to the accessibility provided by the A46 and M40.

¹⁶ ONS via Nomis (2021) Annual Population Survey (T19)

¹⁷ ONS via Nomis (2021) 2021 Census (TS063 – Occupation)

Q-E7.2 Please select the option which is most appropriate for South Warwickshire

Option E7.2a: Include a policy relating to additional economic growth at the major investment sites or Option E7.2b: Do not include a policy relating to additional economic growth at the major investment sites.

- 3.53 It is of note that the Draft Economic Strategy has set a short-term vision that by “by 2028, Stratford-on-Avon and Warwick District Councils will have contributed to creating a larger, stronger, greener and more inclusive economy”¹⁸. Rainier consider that all potential locations for growth within the Core Opportunity Area need to be considered to achieve this vision.
- 3.54 Paragraph 8 of the Framework requires employment land of the right type in the right locations to be provided to support growth and innovation. When assessing economic land availability PPG also highlights that employment site suitability, availability and achievability should be guided by market signals, including consideration of the appropriateness and likely market attractiveness for the type of development proposed¹⁹.
- 3.55 As confirmed in PPG for assessing economic need Authorities should also have regard to trends at a sub-area level and the distinct property market that exist not just between but also within local authority areas²⁰.
- 3.56 Analysis of office and industrial property transactions over the past five years reveals demand for employment land and floorspace in locations outside of the major investment sites.

¹⁸ Stratford-on-Avon District Council and Warwick District Council (2023) An Economic Development Strategy for Stratford-on-Avon and Warwick Districts to 2028 – Draft for Consultation (February 2023), p20

¹⁹ Paragraph: 018 Reference ID: 3-018-20190722

²⁰ Paragraph: 028 Reference ID: 2a-028-20190220

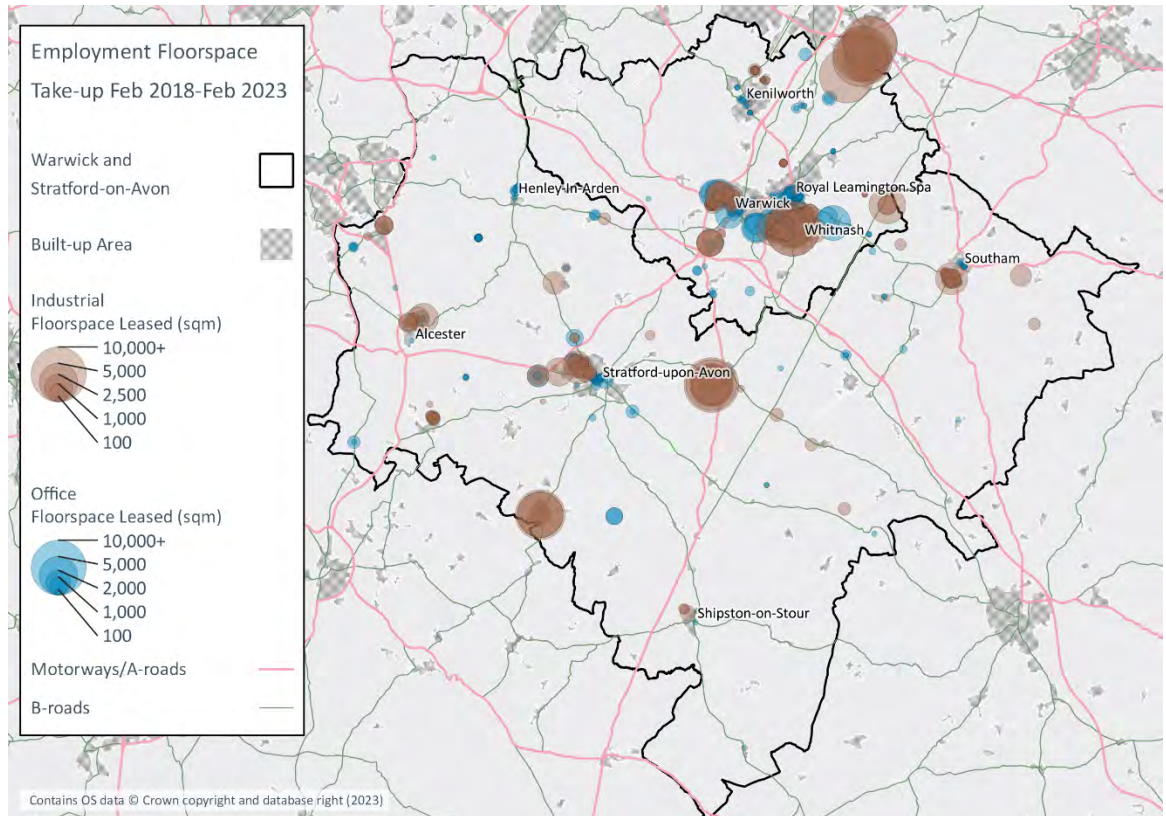


Figure 1: Office and Industrial Floorspace Leased - Past 5 years²¹

- 3.57 The HEDNA also reports strong demand relative to supply of both office and industrial floorspace across South Warwickshire. In the industrial market, for example, vacancy rates point to a continued need for the delivery of new industrial floorspace²², with limited industrial supply remaining in Warwick/Leamington. The principal availability was reported as being the remaining plots at Spa Park and Tournament Fields²³, although in the case of the latter it is understood that a Reserved Matters application²⁴ for the final vacant development plot was approved in November 2022, adding further weight to the attractiveness and suitability of south west Warwick as a location where the need for additional employment land should be met.
- 3.58 Only focussing economic growth at the Major Investment Sites would fail to recognise these market dynamics, potential unmet business needs and the suitability and deliverability of other sustainable locations for employment growth. Consideration should therefore be given to other employment growth locations without prematurely discounting sites because they are not already allocated or located at Major Investment Sites.

²¹ CoStar and Turley Analysis, 2022

²² Icen Project Limited (2022) Coventry and Warwickshire Housing and Economic Development Needs Assessment, Final Report, November 2022, para 3.64

²³ Ibid. para 3.82

²⁴ Application reference W22/1017

QE8.1: Do you agree that the existing employment allocations, including the revisions to Atherstone Airfield, should be carried over into the SWLP

- 3.59 Rainier are supportive of this approach in principle, subject to the authorities also undertaking a up to assessment of the ongoing suitability and deliverability of the identified allocations and allocating additional land to meet any identified shortfall.
- 3.60 Rainier would highlight the following in respect of the existing allocations being relied upon in Warwick District:
- Site allocation **E1 'Land at Thickthorn, Kenilworth'** comprises 8ha of employment land which was the subject of a planning application approved in outline in December 2021²⁵. The permission permits the intended B2 and Class E floorspace and therefore has a reasonable prospect of being delivered for its intended employment use.
- 3.61 It is of note that Warwick District Local Plan 2011-2029 also allocates, at Policy DS16, a Sub-Regional Employment site on the southern edge of Coventry. This site comprises 235ha of which 6.5ha has been allocated to meet employment land in Warwick with the remaining 228.5ha being developed to meet the employment needs of the wider sub-region of Coventry and Warwickshire. In responding primarily to sub-regional needs, the site cannot be relied upon in the emerging SWLP to meet the locally assessed needs.
- 3.62 The implied employment land supply from existing allocations in Warwick (26.2ha) when added to land with permission (12.71ha) and other land identified as available (23.93ha) reported in the latest Annual Monitoring Report²⁶ (AMR) equates to 62.84ha. Whilst this position is likely to have evolved since the 2020/21 AMR was published, the available evidence suggests that, even where existing allocation are carried over, they will not be sufficient to meet the identified need for 97.2ha in Warwick District. In total some **34.36ha** of additional employment land needs to be allocated to meet this quantitative shortfall.
- 3.63 Employment land supply in Stratford-on-Avon will also be insufficient, with Table 38 of the Council's latest AMR²⁷ confirming a remaining employment land supply of 179.1ha, comprising 45.7ha with outline permission and 133.4ha from allocated sites without permission. Again, comparing this to the assessed need for 248.1ha would again result in a shortfall of land, with at least 69ha of additional land being required to 2050. This would increase to 169ha where land safeguards for the expansion of JLR is excluded from the available supply.
- 3.64 It follows that there will be a shortfall of land across South Warwickshire to 2050. Additional allocations will therefore be needed to ensure that sufficient employment land of a suitable quality is available over the plan period to meet identified needs. It is Rainier's strong view that consideration should be given to new employment opportunities in south west Warwick to meet this need.

²⁵ Application Ref W/20/2020

²⁶ Warwick District Council (2021) Annual Monitoring Report 2020/21

²⁷ Stratford-on-Avon District Council (2022) Annual Monitoring Report 2021/22

4. Conclusions

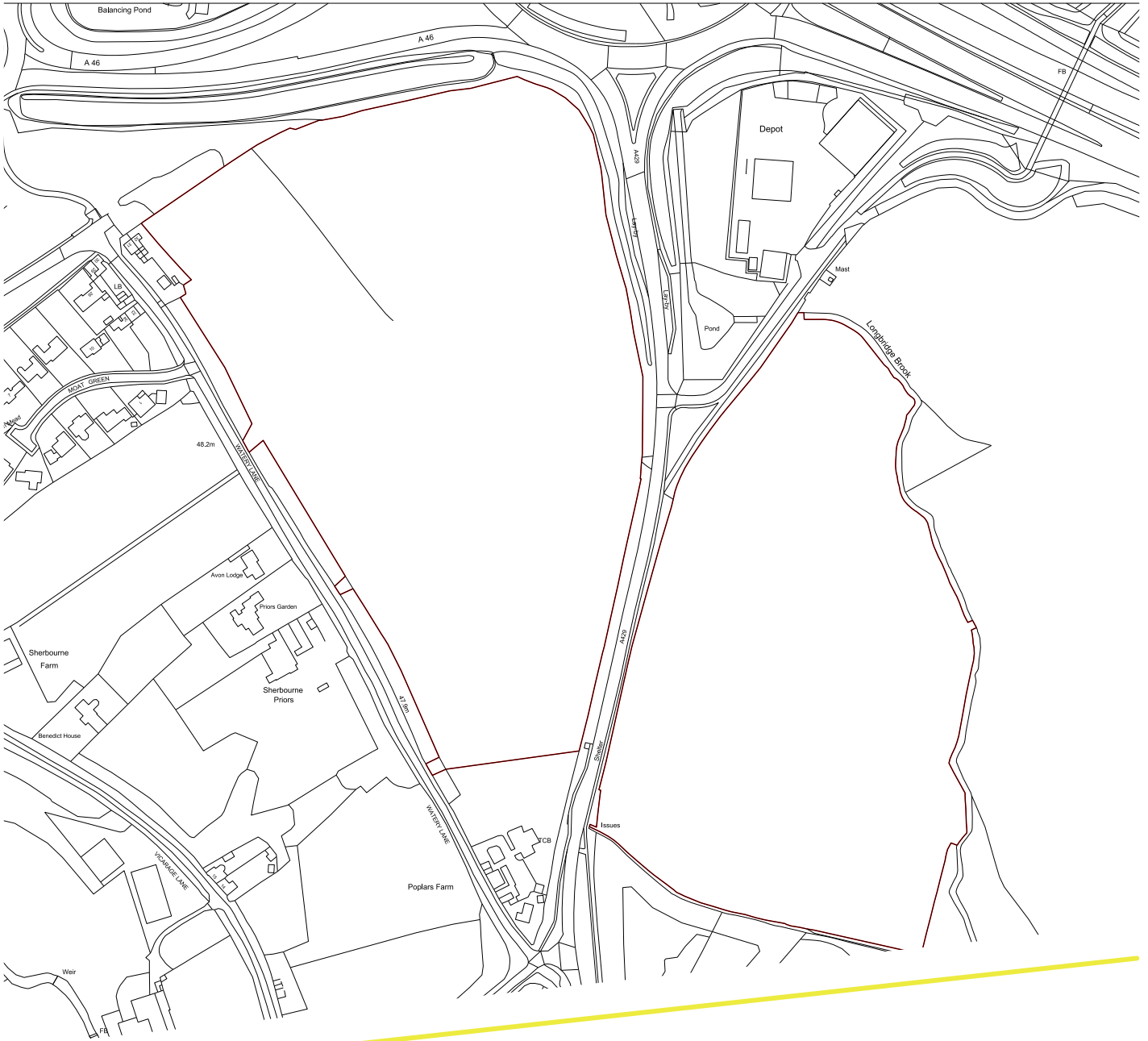
- 4.1 Rainier welcomes the opportunity to engage with the SWLP Part 1, Stage 2: Issues and Options Consultation (January 2023).
- 4.2 In summary, these representations set out the following:
- (a) South Warwickshire is strategically located for manufacturing and logistics, with exceptional access to the strategic road network.
 - (b) Rainier's Site presents a prime opportunity within South Warwickshire to support the Midlands Engine for Growth.
 - (c) The delivery of employment development on land south of M40 J15 can meet the 5 Overarching Principles and the Strategic Objectives of the SWLP, which underpin the ultimate Vision for the Plan.
 - (d) As currently drafted, the SWLP Part 1 Plan is too focussed on residential development, and this should be updated to demonstrate the significant opportunity that employment development presents to meet the growth needs of South Warwickshire up to 2050.
 - (e) It will be impossible to deliver all of South Warwickshire's growth needs on solely brownfield land, so the Plan cannot prioritise the delivery of development solely on previously developed sites. Rather, the Plan should seek to identify the most sustainable and suitable sites for development, especially given the specific geographical constraints that are suited to strategic employment sites (i.e., adjacent to the SRN).
 - (f) The Plan needs to include a definition for 'strategic development' and Rainier recommend that this is defined as 'sites of 5 hectare or over, and/ or 20,000 sqm of office floorspace'; which thus provides explicit thresholds for the scale of development to be allocated within this Part 1 Plan, and what can be delayed until Part 2 of the Plan is prepared.
 - (g) It is recommended that policies are included within this Part 1 Plan to set out infrastructure requirements, a policy to safeguard infrastructure across the region, and a policy to identify green and blue infrastructure across South Warwickshire.
 - (h) Rainier broadly support the approach to assessing needs adopted in the HEDNA but has concerns regarding the employment land requirements for Warwick District, where it is felt the authorities should be planning for a higher overall requirement. There are also gaps in the evidence base with further analysis of supply and other qualitative factors influencing the land requirement and locations for growth required to ensure the economic policies in the SWLP are fully justified and will be effective in supporting the growth ambitions established for South Warwickshire.

- (i) Rainier support the objective to diversify the economy to help prevent out-commuting and retain residents within South Warwickshire. To support this the SWLP should ensure that there is sufficient and appropriate employment land provision available to meet the existing and future needs across all employment sectors in a range of locations where businesses and industry want to invest. A policy which expands on SDC's current existing policy (Option E3a) is considered appropriate in this regard to provide flexibility to respond to changing market condition and unforeseen needs over the Plan period.
- (j) Rainier support the inclusion of a policy directing employment to the Core Opportunity Area. Placing new employment development close to labour and consumer markets in this area would evidently help to reduce the need to travel and encourage more sustainable patterns growth. It is considered that Warwick, as one of the main urban areas, should remain a focal point for future employment growth. This reflects wider economic objectives and the potential to attract and accommodate investment in higher value sectors offering employment commensurate to the skills of the workforce.
- (k) It is Rainier's view that only focussing economic growth at the Major Investment Sites would fail to recognise market trends which show demand for employment land and floorspace outside of these locations. It would fail to recognise unmet business needs and the suitability and deliverability of other sustainable locations for employment growth. Consideration should therefore be given to other employment growth locations without prematurely discounting sites because they are not already allocated or located at Major Investment Sites.
- (l) Rainier would support the carrying-over of existing allocations into the SWLP where this approach can be justified by an up-to-date assessment of their ongoing suitability and deliverability. However, the implied employment land supply from existing allocations in both Warwick and Stratford-on-Avon suggests that even where existing allocation are carried-over there will be a shortfall of land across South Warwickshire to 2050. Rainier's initial analysis suggests that an additional 34.36ha of employment land needs to be allocated to meet the shortfall in Warwick District and at least 69ha in Stratford-on-Avon, potentially increasing to 169ha where land safeguarded for the expansion of JLR is excluded from the available supply.
- (m) It is incumbent on the Authorities to ensure that sufficient employment land is available over the plan period to meet identified needs. Rainier consider that opportunities to build on existing clusters of employment to the south west of Warwick, an area identified in earlier consultations as a potential 'Growth Hub' location, should therefore continue to be explored. This is a highly sustainable and proven employment location with potential to accommodate a mix of employment close to labour supply in Warwick, but also other parts of South Warwickshire owing to the accessibility provided by the A46 and M40.
- (n) Rainier's Site at M40 J15 is well located to the south of Warwick, with direct access to the SRN, as well as local connections with Warwick. The Site is a suitable and sustainable location for accommodating new employment

development and any technical constraints can be appropriately managed and mitigated as necessary.

- 4.3 We trust the information provided within these representations will be considered and we welcome the opportunity to promote Rainier's land south of M40 J15, Longbrook, as the Local Plan progresses.

**Appendix 1: Vision Document for Land South of
M40 J15, Longbrook (February
2023)**



Land at M40 J15

Vision document

21340 - 8000 - 08 | March 2023

Revision	Date	Notes
00	10.06.21	Preliminary draft issue to consultant team
01	11.06.21	Revised draft
02	11.06.21	Access plan added
03	15.06.21	Submission draft
04	11.10.22	Detailed Flood Risk Assessment and Appendix C added
05	08.02.23	Minor amendments
06	23.02.22	Additional text
07	28.02.23	Updated plans
08	03.03.23	Submission draft

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1.0 Introduction

1.1 Introduction and purpose

Introduction

This document has been prepared on behalf of the land owner and Rainier Developments, to demonstrate how land at J15 South / Longbrook could be brought forward in an environmentally sensitive way for employment use.

Purpose

This document has been prepared in support of the promotion of land to the south of Warwick and Junction 15 of the M40 motorway. Specifically this document provides an overview of the key technical opportunities and constraints of the site for consideration as part of the preparation of the new South Warwickshire Local Plan, including its:

- Proximity to the M40;
- Landscape issues and opportunities;
- Ecology and protected species;
- Historic environment;
- Access, including opportunities to improve local cycle and pedestrian networks;
- Noise; and
- Drainage.

The document sets out the reasons why the district is well placed to deliver significant employment growth and how land to the south of the M40 Motorway Junction 15, represents a significant opportunity to meet this need.

Rainier Developments Limited are working with the land owner to bring forward a new employment development on the site and this document demonstrates how the site will assist in the creation of a new sustainable employment location to the south of Warwick, within close proximity to the strategic road network.

Site Description

The land comprises two fields on either side of the A429, south of the M40 at Junction 15. The fields form part of the Sherbourne Park Estate. Both fields are in arable use. The western field is roughly triangular in shape with an area of 9.04 HA. It has significant frontage to the A46 (Stratford Road) and the associated M40 roundabout to the north, Watery Lane to the west, and the A429 to the east. The southern boundary is shared with private residential land.

The eastern field is irregular in shape with an area of 6.78 HA, owing to the meandering flow of Longbridge Brook, which defines its eastern boundary. The western site boundary includes significant frontage to the A429 and a local access road serving a Highways England depot. This access is also part of a National Cycle Route (Route 41) which crosses the M40 to the north.

Consultant Team

The proposed allocation draws on a specialist consultant team as follows:

Masterplanner Corstorphine & Wright

Town Planning Turley

Transport PJA

Noise BROOKBANKS

Flood Risk and Drainage BWB
A CAF GROUP COMPANY

Landscape & Heritage
Ecology edp



Site Location

The site can deliver a net area of up to 9.5 HA (23.6 acres) of employment land.

1.2 Economic considerations

A high value economy with significant growth potential

South Warwickshire's strategic gateway location on the M40 and accessibility to London, the Chiltern Mainline and Birmingham, make the area ideally placed to benefit from a wide range of economic opportunities. This is already reflected in the presence of a number of high value sectors (including vehicle design and engineering, software and business professional financial services which have all been attracted into the area) and in the £11.3 billion Gross Value Added (GVA) generated annually .

Just over half (£6.4 billion) of this annual GVA is generated in Warwick District , which also provides employment for around 90,000 employees, with this forecast to grow over the next 20 years. GVA generated in Warwick is also forecast to increase by £2.3 billion (or 34.8%) , highlighting the strength and growth potential of the Warwick economy and contribution of key sectors such as the Information and Communication, Transport and Storage and the Professional Services sectors.

Of those living in the District it is also of note that over half (c. 51.9%) work in Professional or Associate Professional and Technical Occupations, which is significantly above the national average (41.4%) . This is commensurate with the concentration of skilled residents across the South Warwickshire as a whole, where approximately 49% of the population have attained high level NVQ4+ qualifications.



Economic Strategy for South Warwickshire

These indicators, in combination with forecast growth in the working age population, make both Warwick and the wider South Warwickshire a highly attractive location to invest and grow a business.

It is against this backdrop of a strong and growing economy that the draft Economic Strategy for South Warwickshire has been prepared. Published for consultation in February 2023, the Strategy sets out the vision that "by 2028, Stratford-on-Avon and Warwick District Councils will have contributed to creating a larger, stronger, greener and more inclusive economy" .

Underpinned by three themes – People, Productivity and Place – and five core opportunity sectors – Automotive and Advanced Manufacturing, EV batteries, Hydrogen, Bio-science and Agri-tech and Digital Creative – a key aim of the strategy is to proactively support growth and investment in low carbon sectors, building on the UK's leading low carbon transport cluster, as well as opportunities presented by South Warwickshire's national and regional connectivity and role at the heart of the Midlands Engine.

The strategy has been prepared to ensure a coordinated approach to economic growth activities across South Warwickshire with the themes supported by eight main objectives which, amongst other priorities focus on addressing skills imbalances (objective 1), strengthening existing economic sectors (objective 3), de-carbonising the economy (objective 4) and attracting new sectors to diversify the economy (objective 5).

Ensuring an adequate supply of employment land (objective 8) is one of the main objectives with a strong emphasis placed in the Strategy on facilitating the provision of additional affordable employment premises and ensuring adequate future supply of employment land in the right locations across South Warwickshire through the SWLP. These objectives having been set

The site is located on the edge of the 'Golden Triangle': identified by the Midlands Engine as a focus for employment development.

1.2 Economic considerations

in response to identified opportunities for significant growth and investment but also the perceived threat that the existing supply of employment land and space "may not be suitable for business needs".

Assessed needs for employment land

Future employment land needs for South Warwickshire have been assessed in the recently published Housing and Economic Development Needs Assessment (HEDNA) for Coventry and Warwickshire to 2050.

For Warwick District the HEDNA concludes a requirement for 97.2ha of employment land over the period to 2050, comprised of 15.8ha of land to meet assessed office needs and a further 81.4ha of land to meet assessed general industrial needs.

According to the latest Annual Monitoring Report at 31st March 2021 Warwick District had 62.84ha of available employment land. This is comprised of existing allocations (19.7ha), land with permission but not yet started (12.71ha), other land identified as available (23.93ha), plus land at the sub-regional employment site on the southern edge of Coventry which is expected to accommodate district level needs (6.5ha).

Comparing this to the assessed need for 97.2ha suggests there will be an insufficient supply of employment land in Warwick District over the period to 2050. In total some 34.36ha of additional employment land needs to be allocated to address the quantitative shortfall. This requirement excludes land for strategic B8 warehousing, the need for which has been assessed separately in the HEDNA at a sub-regional level and equates to some 709ha of land across Coventry and Warwickshire to 2050. Although the HEDNA recognises the potential greater role of South Warwickshire, including along key corridors along the M40 and A46, locations to accommodate this need will be considered in collaboration with other local authorities across the sub-region.

It is also of note that draft Economic Strategy for South Warwickshire favours investment that will capitalise on the unique strengths of the local economy. The provision of employment land to meet identified local (non-

strategic B8) needs and complement existing allocations being carried-over in the emerging SWLP will therefore be of critical importance if both Warwick and Stratford-on-Avon are to remain competitive, maximise inward investment and the number of additional jobs generated from the available land supply to diversify and grow the economy.

Benefits of the site

Both the Economic Strategy and emerging SWLP identify a Core Opportunity Area - comprising the five main towns, the A46 Trans-Midland Trade Corridor and the central section of the M40 - which will provide the focus for attracting strategically significant inward investment to drive for the South Warwickshire economy.

Warwick and importantly the site, are located within this where the need for additional employment land will be directed and met. The site is also strategically located to the south of Junction 15 of the M40 in a highly sustainable and proven employment location.

In support of the vision and aspirations of the draft Economic Strategy and emerging SWLP, the site has the potential to contribute to South Warwickshire's economic and employment needs in the short term, and in doing so:

- Improve the supply of well-located employment sites available for inward investment in the Core Opportunity Area;
- Provide additional employment land/premises in a sustainable location where business and industry want to invest;
- Attract a mix of employment to help diversify the economy, prevent out-commuting and retain residents within South Warwickshire;
- Assist in reducing carbon emissions and congestion through placing new employment development close to labour and consumer markets; and
- Offer a site of scale that has potential to offer choice of plots and/or speculatively build premises in a high quality business environment.

2.0 Issues & opportunities

2.1 Landscape and visual considerations

Landscape and visual

The site is located directly south of Junction 15 of the M40 motorway, with the western parcel sitting between the motorway and the Sherbourne Conservation Area, and the eastern parcel between the Highways England depot and the woodland which extends eastwards from the conservation area to join up with the Longridge Brook LWS.

The site is not designated at either a national level (so is not within an Area of Outstanding Natural Beauty (AONB) or National Park), nor is it designated locally or protected through other landscape related policies in the Development Plan. There are two trees subject to Tree Preservation Orders (TPOs) in the western parcel; one Oak and one Ash tree.

The site context is very much transitional in terms of landscape character, sitting between the major infrastructure corridor of the M40 and routes emanating from Junction 15, and the more pastoral landscape to the south. Whilst comprising intensive agricultural land, and a strong vegetation framework, the influence of detracting features – including the motorway (and noise created by this), the highway network generally and overhead power lines – is strong.

This serves to reduce the sensitivity of the site and local context, although other features, such as the adjacent conservation area and ecological features provide some positive characteristics on the site boundaries. It is not surprising therefore that the published landscape character assessment defines the site as being within an 'Enhancement Zone'.

Within the published landscape character assessment (The Warwickshire Landscape Guidelines) the site is classified as being within the 'Avon' Regional Character Area and 'Terrace Farmlands' Landscape Type. The assessment doesn't note the influence of the M40 (which is prominent across the site) but does identify intensive agriculture and well wooded streamlines as key characteristics.

In terms of visual amenity, the site is screened from the north and west by the road infrastructure of the M40 and Junction 15, which sits above the site on embankments, whilst in all other directions the site is variously screened by woodlands, woodland belts and mature hedgerows. The small settlement of Sherbourne also provides a visual screen to the western parcel.

In terms of non-residential receptors, visibility of the site is largely restricted to local roads – including the M40, the A46, Watery Lane and the A429 (which runs between the site parcels) – a single footpath/bridleway which runs west from Watery Lane, under the A46 and continues west to New Barn Farm, and National Cycle Route 41 which runs adjacent to the northern boundary of the eastern parcel, before following the A429 a short distance and routeing through Sherbourne southwards along Fulbrook Lane.

As shown by Photograph 1, views are available from the footpath/bridleway before it runs under the A46, but are restricted by road infrastructure afterwards (see Photograph 2). Views from the National Cycle route are open and available at close range across the eastern parcel, as shown by Photograph 3. All available views from these routes are experienced in a context which is heavily disturbed by infrastructural elements and road noise.

There are residential receptors at Sherbourne and further field along the A429 towards Barford. Although occasionally at close range (e.g. at Sherbourne) views towards the site are fragmented, or obscured entirely, by intervening vegetation.

From a landscape and visual perspective the most sensitive receptors are residents within Sherbourne, and those cycling and walking on local Public Rights of Way (PRoW). The adjacent woodlands and stream corridor, and other mature trees and hedgerows (particularly those subject to a TPO), provide a valuable landscape context which development in this location could enhance through focused mitigation and additional planting.

Buffering of sensitive receptors, a strong landscape framework, and the provision of enhanced routes and route corridors is readily achievable, and provides the basis for the landscape-led approach illustrated on the Concept Masterplan. Strengthened woodland areas, which provide valuable Green Infrastructure assets at the site and local level could provide biodiversity and landscape character benefits.



2.1 Landscape and visual considerations

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Landscape context

- Site Boundary
- Sherbourne Conservation Area
- Key Areas of Woodland/Vegetation
- Watercourses
- Local Wildlife Sites
- Mature Trees/Hedgerows
- Mature Trees/Hedgerows (dead)
- Mature Trees/Hedgerows (TPO)

2.2 Ecology and protected species

Ecology and protected species

The site is not constrained by any statutory ecological designations, with the closest being Sherbourne Meadows Site of Special Scientific Interest (SSSI) located approximately 1.7km west. Two non-statutory Local Wildlife Sites (LWS) are adjacent to the site's eastern and south eastern boundaries, namely the River Avon and Tributaries LWS and Crab Tree Lake deferred LWS. These sites comprise grassland, woodland and a pool alongside the Longbridge Brook. Impacts upon these adjacent designations can be avoided through appropriate buffers from development, that could be planted and managed along with a sensitive lighting scheme to strengthen these green corridors.

The site largely comprises two large fields managed as intensive agricultural land under arable cultivation which are considered to be of little ecological value, with limited potential to support protected/notable species other than farmland birds. Habitats of higher ecological value, including mature trees, watercourses, hedgerows and woodland belts, are predominantly confined to the peripheries of the site. It is expected that these habitats will support nesting birds and have potential for roosting bats. Although no ponds appear to exist within the site, the presence of waterbodies within 500m and local records for great crested newts means there is potential for this species to be present within the field boundaries of the site.

The site largely comprises two fields which are considered to be of little ecological value.

The network of scattered trees, hedgerows, woodland belts and watercourses are considered of intrinsic ecological value in the local context and should all be retained and strengthened where feasible. The boundary watercourses and woodland belts should be afforded a green buffer to maintain their suitability as commuting and foraging routes for a range of wildlife.

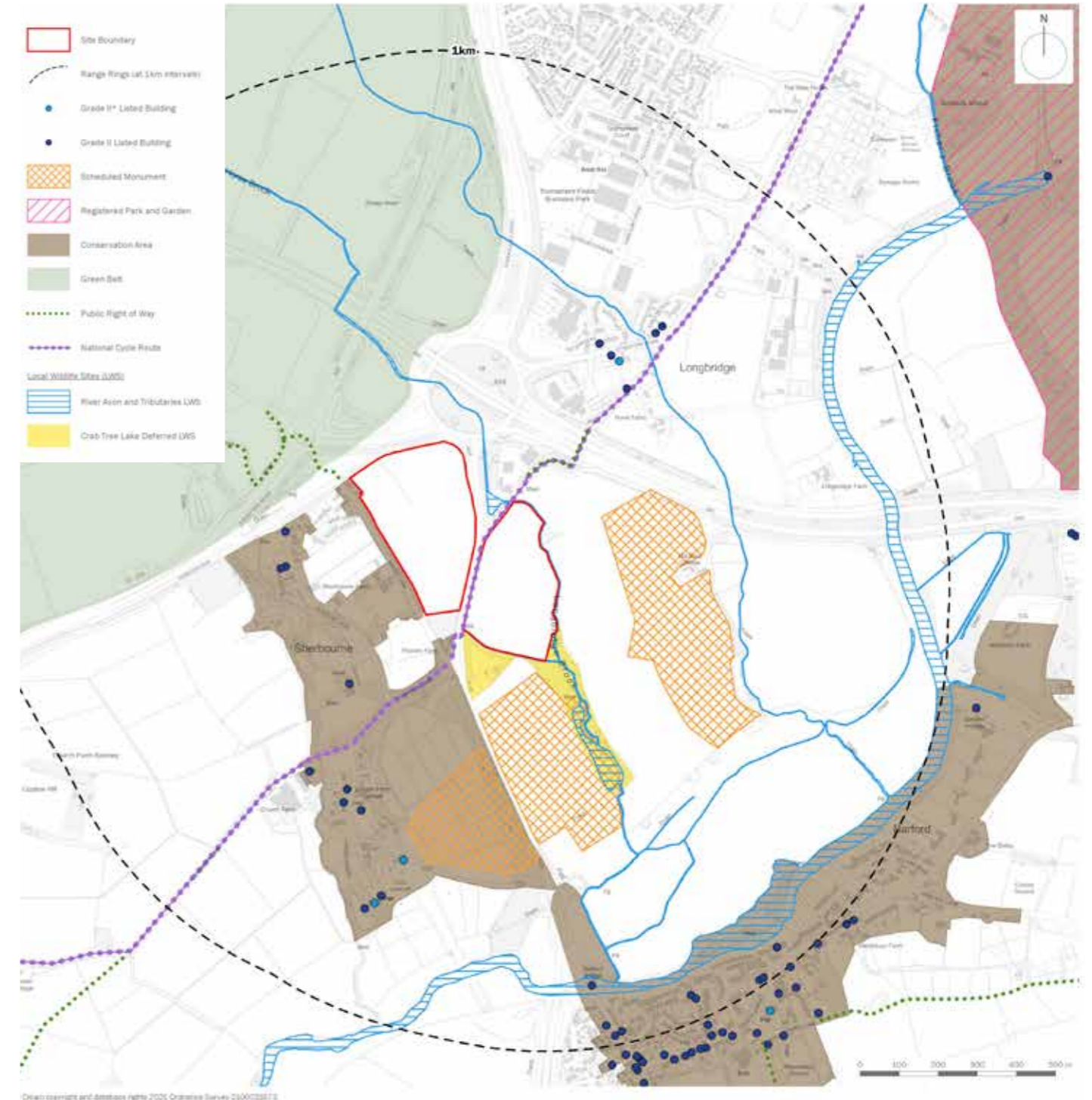
Opportunities exist for habitat creation within green buffers around the site peripheries, including planting species-rich wildflower grassland, hedgerows and trees, as well as the potential to design any surface water attenuation basins to benefit biodiversity. Overall, desk-based studies to date have confirmed that there are no 'in principle' ecological constraints to the proposed development, and the site offers sufficient flexibility to ensure compliance with planning policy at all levels and to avoid detrimental impacts to biodiversity.

Furthermore, a sensitively designed development incorporating appropriate mitigation and enhancement has the potential to deliver a significant net gain in biodiversity.



Eastern field looking south

2.2 Ecology and protected species



Environmental constraints and opportunities plan

2.2 Ecology and protected species



Western field looking west towards Sherbourne



Eastern field looking west towards A429

2.3 Historic environment

Historic environment

The site does not contain any designated heritage assets. The Warwickshire Historic Environment Record identifies only a single record within the site, an undated linear cropmark feature in the western field parcel, whose presence and survival has not been verified through archaeological investigations. As such, there are no 'in-principle' constraints to the allocation or development of the site in terms of the historic environment.

Beyond the site, a number of designated heritage assets are present in the wider area and are identified on the accompanying Environmental Constraints Plan. A site visit by an experienced heritage consultant identified the following assets to be of relevance to development proposals for the site:

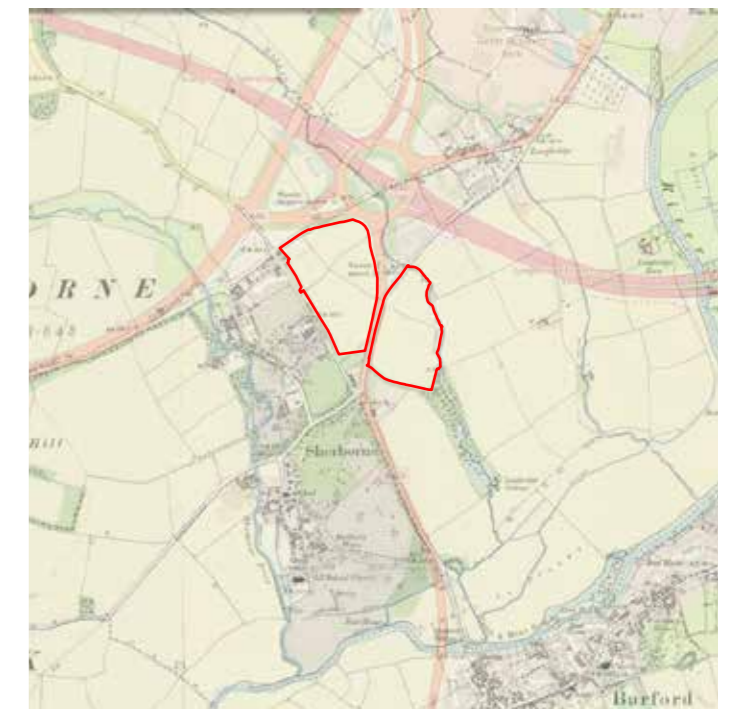
- Three Scheduled Monuments to the south and east, which each define the extents of important archaeological remains relating to prehistoric and Romano-British settlement activity; and
- The Sherbourne Conservation Area to the immediate west, which defines the areas of the settlement of special historic and architectural interest, including the Grade II* listed Sherbourne Park and the Grade II* Church of All Saints in its south extents, amongst a number of other scattered listed buildings.

The site does not contain any designated heritage assets.

The presence of the heritage assets identified above in proximity to the site provides distinctive place-shaping opportunities for future development and they should accordingly be considered in the evolution of the proposals for the site.

In terms of the Scheduled Monuments, their settings could be addressed through increased boundary planting to the site's eastern field parcel, to strengthen the well-vegetated boundaries here further. The provision of a generous buffer of green infrastructure to the site's western boundary would ensure the contribution of the site to the setting of the Conservation Area is preserved.

Therefore, the site offers sufficient flexibility to ensure compliance with planning policy at all levels in terms of the historic environment.



Extract from 1888-1913 OS with contemporary M40 alignment underlaid

2.4 Site access

Site access

Local Road Network

The site is located circa 4.0km southwest of Warwick and adjacent to junction 15 of the M40.

The site lies east and west of the A429. As shown in the diagram opposite (top), western area one consists of the largest parcel of land and is bounded by Stratford Road to the north, the A429 to the east and Watery Lane to the west. Eastern area two is bounded by Longbridge Brook to the north and east, with open fields to the south.

The development site is ideally located for access to the strategic road network and connections to the whole of the UK (see diagram below right).

A429: The A429 is a major road connecting Warwick to Cirencester. Adjacent to the site, the A429 consists of a single two-way carriageway subject to a speed limit of 50mph. To the north, the A429 connects to Junction 15 of the M40. The conditions on the A429 are shown in Figure 3-1.

M40 (J15): Junction 15 of the M40, known as Longbridge Island is located only 300m north of the site. The M40 is the London to Birmingham motorway connecting to the M42 in the north and the M25 in the south providing access to the whole of the UK through the strategic road network. Locally, the six arm Longbridge Island roundabout connects to the Warwick Bypass into Coventry. Stratford Road provides a connection northeast to Warwick and south to Stratford-Upon-Avon.

A46: Located only 700m northwest of the site this major road starting east of Bath in Somerset travels north-easterly ending in Cleethorpes, Lincolnshire, provides access to Cheltenham, Broadway, Stratford-on-Avon, Coventry, Leicester, Newark and Lincoln.

M40 Junction 15 currently operates under variable signal timings responding to the traffic levels as they build and decay across the busy periods of the day. This control feature and the ability to control the logistics of commercial development is used to mitigate the impact of development traffic on the network.

The location north of Stratford and adjacent to the motorway network is key to limiting traffic movements

through residential areas and minimising impacts on existing residents.

Access Opportunity

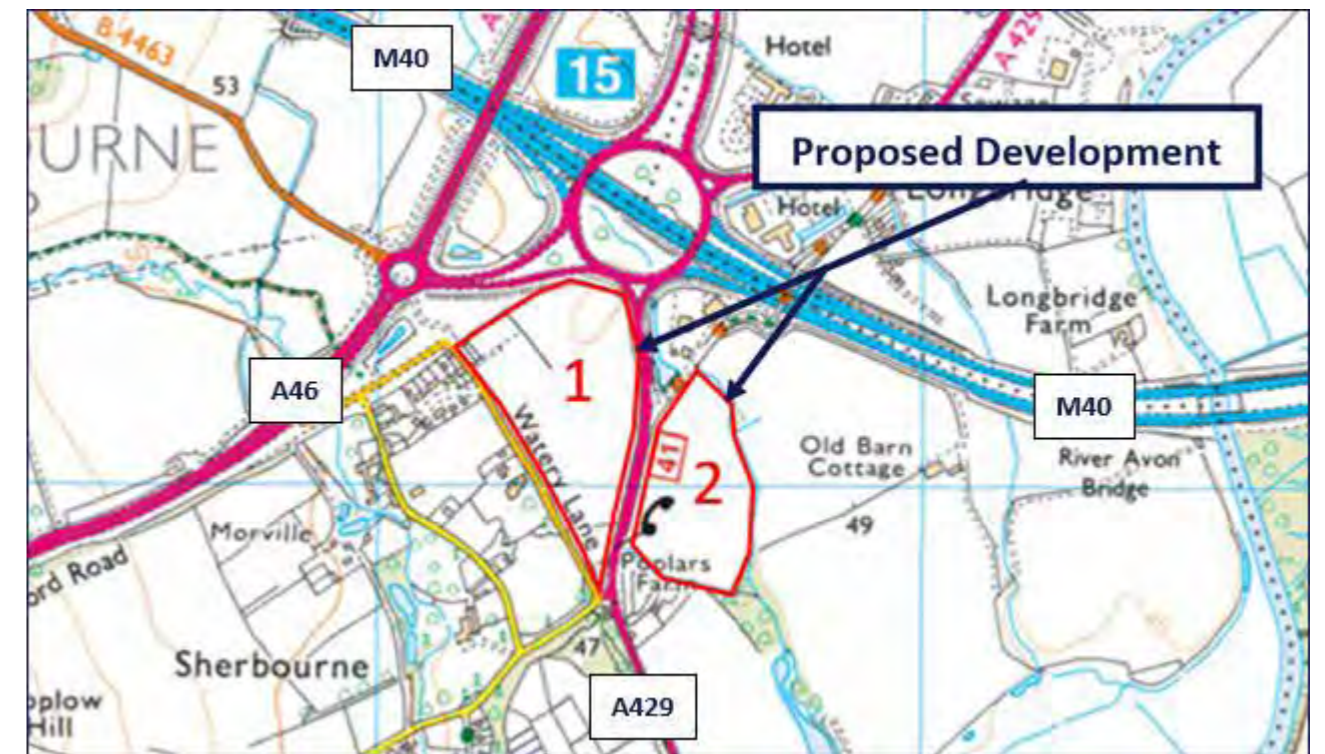
The development is bisected by the A429. To avoid intensification of site access points, it is considered appropriate to deliver access to the land parcels via a new four arm roundabout junction, allowing access to both parcels from a single junction.

There are existing roundabouts within the vicinity of the site including a circa 45m ICD roundabout providing employment access on Edgehill Drive, north of the site. To maintain consistency with the highway's characteristics, of the area, it is suggested that the site is accessed via similar arrangements.

The new access point will be designed in accordance with guidance document Design Manual for Roads and Bridges (DMRB) document CD116 (Geometric design of roundabouts) as well as Warwickshire County Council Highway Design guidance documents.



Development Site in context to the Strategic Highway Network (source Highways England website)



Local road network



Proposed vehicular access

2.5 Noise

Noise

The impact of introducing a new development into an existing environment has the potential to affect existing sensitive environmental receptors. The closest sensitive receptors are the existing properties along Watery Lane. In this instance, BS4241 provides the assessment protocol to assess the potential implications.

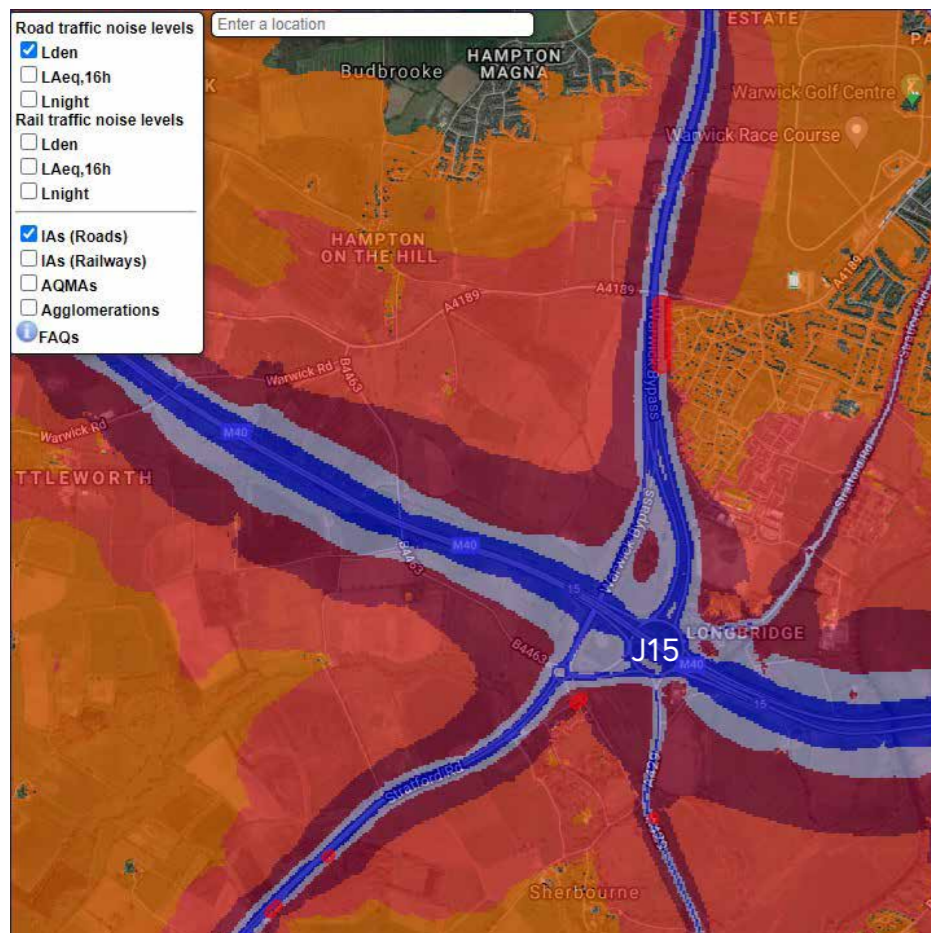
The methodology suggested by BS4241 confirms that a significant adverse impact is deemed to occur if noise levels increase by at least 10db when compared to background noise levels.

Watery lane is located adjacent to the A429 and south of the M40 motorway. The potential noise sources from the employment area are associated with the projected site operations. This will include the potential air conditioning units attached to the buildings and any noise events that's all a result of the daily typical activities on site, which could include vehicle

manoeuvres etc. It is considered unlikely that any noise events that occur due to the employment land use will be discernible from the noise from the A429 and the M40 motorway which will be the dominant noise source and therefore the development is unlikely to result in a significant adverse impact.

To minimise the potential impact, the site layout will be considered in detail, to avoid direct sight lines between the sensitive receptors and the vehicle manoeuvring areas.

Furthermore, the proposed employment buildings will be located between the M40 motorway and the sensitive receptors. This will break the direct sight lines that currently exist and has the potential to reduce the impact of the existing traffic noise and will positively reduce the existing noise levels currently being experienced along Watery Lane for residents.



Existing traffic noise levels

Development will reduce noise levels experienced by residents of Watery Lane.

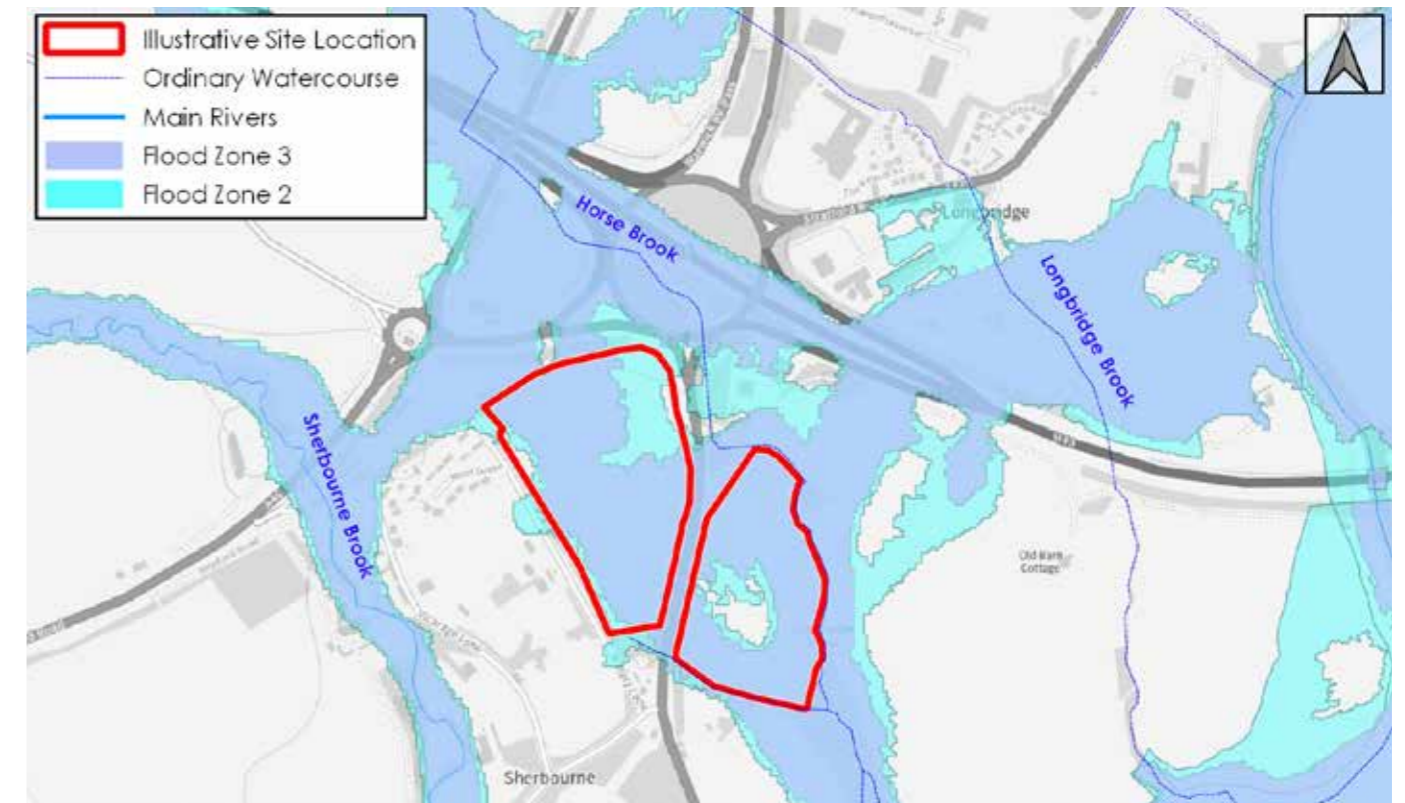
2.6 Flood risk and drainage

Flood risk

The nearest Main River to the Site is the River Avon located approximately 750m to the south. An ordinary watercourse and tributary of the River Avon (the Horse Brook) flows to the north and along the eastern boundary of the Site. Other local ordinary watercourses include the Longbridge Brook, located 500m to the north east, and the Sherbourne Brook located 250m to the south west.

According to the Environment Agency (EA) Flood Map for Planning, the majority of the Site is located within Flood Zone 3 (High Probability - Land having a 1 in 100 or greater annual probability of river flooding) and Flood Zone 2 (Medium Probability - Land having between a 1 in 100 and 1 in 1000 annual probability of river flooding). These Flood Zones are attributed to the Horse Brook. However, the Flood Zones are based upon outdated and strategic level data. The Flood Zones clearly do not consider the Stratford Road or the Warwick Bypass which are located upon embankments elevated above the floodplain. Therefore, the current Flood Maps for Planning do not accurately represent the flood risk at the Site.

Environment Agency mapping does not accurately reflect flood risk for the site, and the EA has confirmed there are no records of historic flooding of it.



EA Flood Risk for Planning Map

2.6 Flood risk and drainage

To address this, a new bespoke hydraulic model of the Horse Brook was commissioned and has been prepared by BWB Consulting. The model has been reviewed by the Environment Agency and it was approved in January 2023. The model is based upon detailed topographical survey of the watercourses and hydraulic structures, and it includes the latest aerial topographical survey (LiDAR) of the floodplain. This hydraulic model provides an up to date and more accurate representation of flood risk from the Horse Brook to the Site and the local area. The model identifies that the western parcel of the Site is entirely removed from the 1 in 1000-year floodplain, therefore this parcel should be treated as Flood Zone 1. The eastern parcel is also shown to be largely outside of the 1 in 1000-year floodplain, it is only the eastern boundary that falls within the 1 in 100-year and 1 in 1000-year floodplain (equivalent to Flood Zone 3 and Flood Zone 2 respectively).

The EA's risk of Flooding from Surface Water (RoFSW) mapping has also been reviewed for the purpose of this initial site appraisal. This shows a close correlation to the detailed floodplain mapping giving further confidence that the flood risk to the majority of the site is low.



EA Risk of Surface Water Flooding Map

The layout of the development will be arranged to avoid the Horse Brook floodplain, thus ensuring that the development is at a low risk of flooding. This approach will also ensure that no floodplain will be displaced and that the flood risk in the wider area will be unaffected by the development. Additionally, the development will be offset a minimum of 8m from the watercourse top of bank, to provide an ecological buffer and allow for continued access and maintenance. To provide further flood resilience finished floor levels of the development will be a set a minimum of 300mm above the 1 in 100-year flood level including the central climate change allowance.

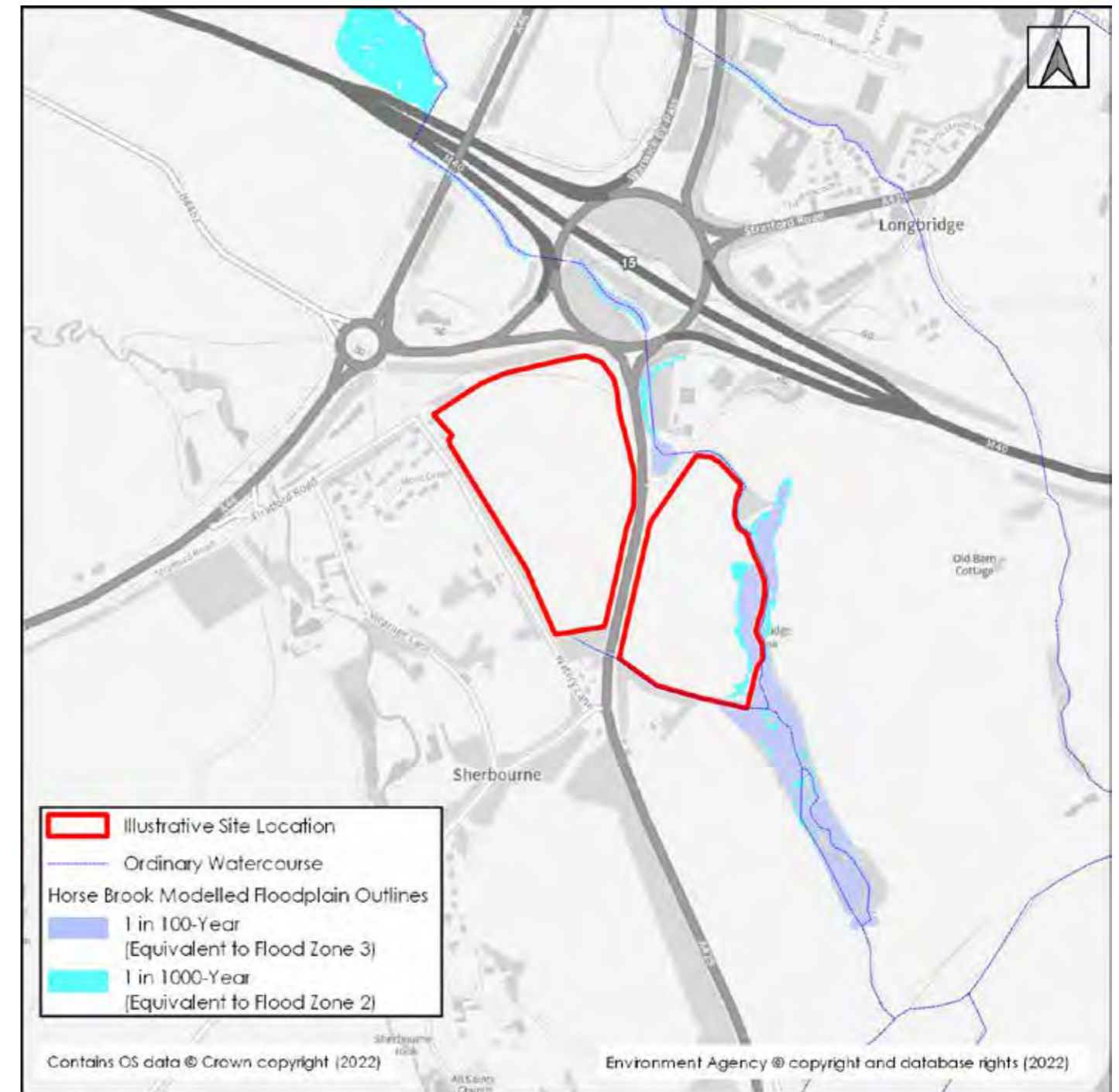
Surface Water Drainage

The existing site is understood to drain through a combination of limited infiltration into the ground and overland flows to the local watercourse. The site is underlain by mudstone, so the infiltration potential is expected to be limited, but this will be confirmed through intrusive site investigations undertaken at the appropriate time. At this preliminary stage it is expected that a surface water outfall to the local watercourse will be maintained.

An appropriate Surface Water Management Strategy which complies with the latest local and national advice will be implemented on the site to attenuate the increase in surface water runoff caused by the development. The rate at which the runoff is discharged into the watercourse will be restricted to the equivalent greenfield runoff rate, preventing an increase in flows leaving the site and thus ensuring that the development does not have a detrimental impact upon flood risk elsewhere.

Through the application of Sustainable Urban Drainage Systems (SuDS), surface water will be stored within the site and subjected to stages of treatment to guarantee that the water quality in the wider area is protected. Wherever possible, above ground SuDS will be used to enhance the aesthetic amenity of the development and provide valuable habitats for the local wildlife. The surface water attenuated storage provided will be located outside of the floodplain and appropriately sized to accommodate the 1 in 100-year storm including an allowance for climate change. Example SuDS features that could be incorporated into the development include attenuation basins, filter drains, permeable paving, and swales.

Modelled flood risk



Detailed flood risk modelling confirms the western parcel is not in the floodplain, and the eastern parcel is largely unaffected.

3.0 Vision and principles

3.1 Key deliverables



Midlands Engine

Proximity to the M40 and supporting the Midlands Engine.



Employment

Creating jobs that are accessible locally.



Green Infrastructure

Multi-purpose green infrastructure including buffer screen planting, SuDS and enhanced biodiversity.



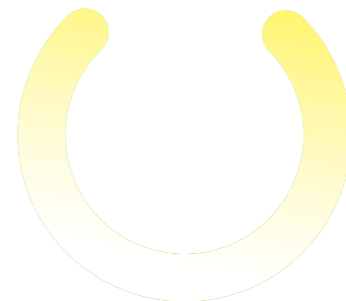
Highly Accessible

With good access to existing bus services.



Enhanced walking and cycling

Potential to enhance existing cycle route 41 and provide new pedestrian connections.



'Green Loop'

Development will be wrapped by a generous 'green loop' of screen planting.



NEW NATURE WALK



HABITAT CREATION



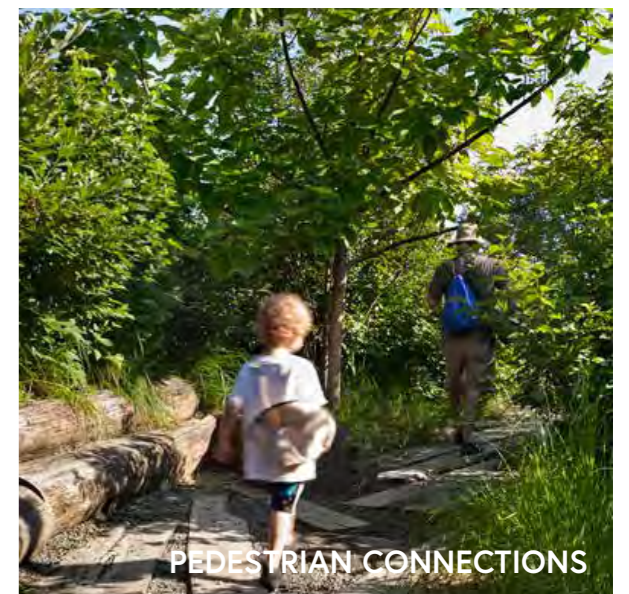
CYCLE FRIENDLY



WOODLAND



BIODIVERSITY GAIN



PEDESTRIAN CONNECTIONS

4.0 Development concepts

4.1 Key masterplan considerations

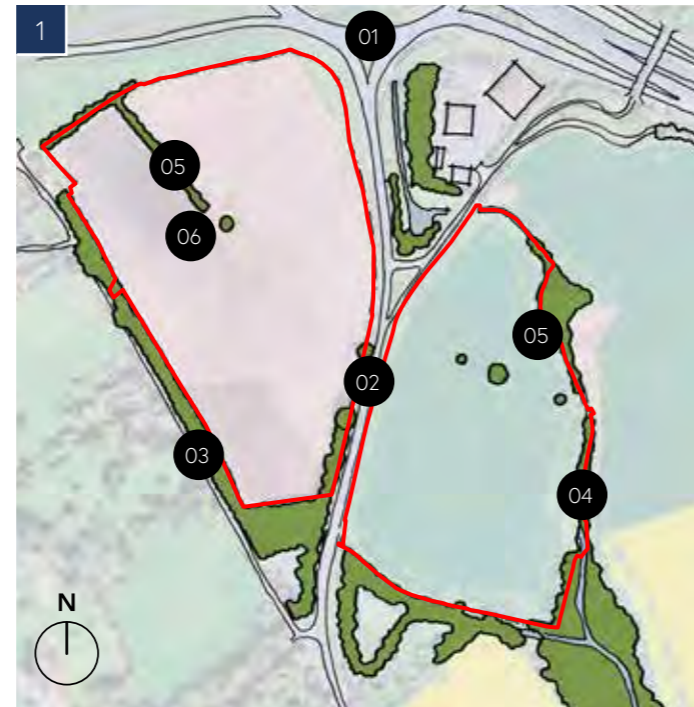
Structuring elements

The following diagrams take into account the issues and opportunities presented in the previous section of this report, and show - in simple terms - how these considerations would inform both the approach to landscape, access and movement, and disposition of development.

- 01 Motorway Junction (J15)
- 02 A429
- 03 Watery Lane
- 04 Longbridge Brook
- 05 Remnant hedgerow
- 06 Protected trees (TPO)
- 07 High visibility
- 08 Traffic noise

New employment development could take advantage of its visibility from J15, while providing shelter to existing houses from traffic noise.

1. Site as existing
2. Motorway noise / visibility



4.0 Development concepts

4.1 Key masterplan considerations

3. Green / blue buffer
4. Access and movement



There is an opportunity to wrap the site(s) with a generous buffer of green and blue infrastructure.

- 09 Green infrastructure (e.g. bunding / trees)
- 10 Green / blue infrastructure (e.g. ponds)
- 11 Potential access between trees
- 12 Potential to improve cycle path along A429
- 13 Potential pedestrian connection Sherbourne to Barford Village

The development has the potential to deliver wider benefits to the community including:

- Improved cycle way along the A429;
- Pedestrian path to Barford;
- Potential to reduce traffic noise; and
- A consolidated 'green gap' from the Conservation Area.

4.1 Key masterplan considerations

- 01 Motorway Junction (J15)
- 02 A429 with cycle improvements
- 03 Watery Lane
- 04 Longbridge Brook with path to Barford
- 05 Remnant hedgerow / trees
- 06 Main access
- 07 Green / blue infrastructure
- 08 Indicative development cells
- 09 Protected trees



Sketch illustrative masterplan concept

4.1 Key masterplan considerations

Sketch illustrative masterplan

The sketch concept masterplan (opposite) shows the strategy by which the proposals could be brought forward in a landscape-led and environmentally sensitive manner. In broad terms, larger format development would be sited in the less sensitive parts of the site close to the M40 / junction. Development in this location would retain the remnant historic hedgerow, while helping to mitigate traffic noise from the Motorway.

There is potential for the line of historic hedgerow - since lost to agriculture - to be remembered through detailed landscape proposals such as swales or new planting.

The principal vehicular access would be from the A429, with a roundabout sited to minimise potential impacts on existing trees or vegetation. Site frontage to the A429 would also enable enhancements to the existing national cycle route

A new green loop of green and blue infrastructure would wrap the development to form a generous buffer to the Sherbourne Conservation Area to the west and the Longbridge Brook Corridor to the east and south east. Subject to detailed assessment, this area would also provide space for drainage attenuation, providing a net biodiversity gain to the site as a whole.



Wider connections (subject to detailed feasibility)

Wider benefits

Last but not least, the development has the potential to deliver a new pedestrian path linking Sherbourne and Bamford Village, with a northern connection towards Longbridge following the bank of Longbridge Brook and joining the abovementioned National Cycle Route (Route 41).

There is an opportunity to improve pedestrian and cycle paths, including a connection to Barford.

4.2 Illustrative masterplan

The preliminary masterplan below is indicative of the scale and diversity of potential development on the site. The plan layout maintains and expands upon the parameters described previously in the document, and delivers a commercial masterplan which recognises the importance of the buffer zones to protect adjacent conservation and ecological zones (see also indicative landscaping layout opposite).

	Ground Floor GIA		First Floor GIA		TOTAL GIA	
	SQM	SFT	SQM	SFT	SQM	SQFT
UNIT 01	1,680	18,083	168	1,808	1,848	19,892
UNIT 02	3,572	38,449	179	1,922	3,751	40,371
UNIT 03	1,750	18,837	175	1,884	1,925	20,721
UNIT 04	16,370	175,622	519	5,581	10,889	117,203
UNIT 05	1,744	18,700	163	1,755	1,907	20,455
UNIT 06	10,880	117,111	544	5,856	11,424	122,967
TOTAL	31,996	344,462	1,773	19,066	33,769	363,531



4.2 Illustrative masterplan

The landscape buffer to the Sherbourne Conservation area will function as a new Country Park, providing natural habitats and amenity to the wider area.



5.0 Summary & conclusion

5.1 Why this site

Why M40 J15

Rainier Developments Limited are working with the land owner to bring forward a new employment development on the site and this document demonstrates how it will assist in the creation of a new sustainable employment location to the south of Warwick, within close proximity to the strategic road network.

Both the Economic Strategy and emerging SWLP identify a Core Opportunity Area - comprising the five main towns, the A46 Trans-Midland Trade Corridor and the central section of the M40 - which will provide the focus for attracting strategically significant inward investment to drive for the South Warwickshire economy.

The site is located within the Core Opportunity Area identified in the emerging SWLP, where the need for additional employment land will be directed and met.

The site is also strategically located to the south of Junction 15 of the M40 in a highly sustainable and proven employment location, where it can deliver a net area of around 9.5 HA (23.6 acres) of employment land along with numerous benefits to the surrounding area:

- Contributing to the Midlands Engine;
- Creating jobs that are accessible locally;
- Multi-purpose green infrastructure with bio-diversity net gain;
- Good access to existing bus services;
- Potential to enhance existing cycle routes and put in place new pedestrian connections;
- Generous green-space buffer in the form of Country Park.



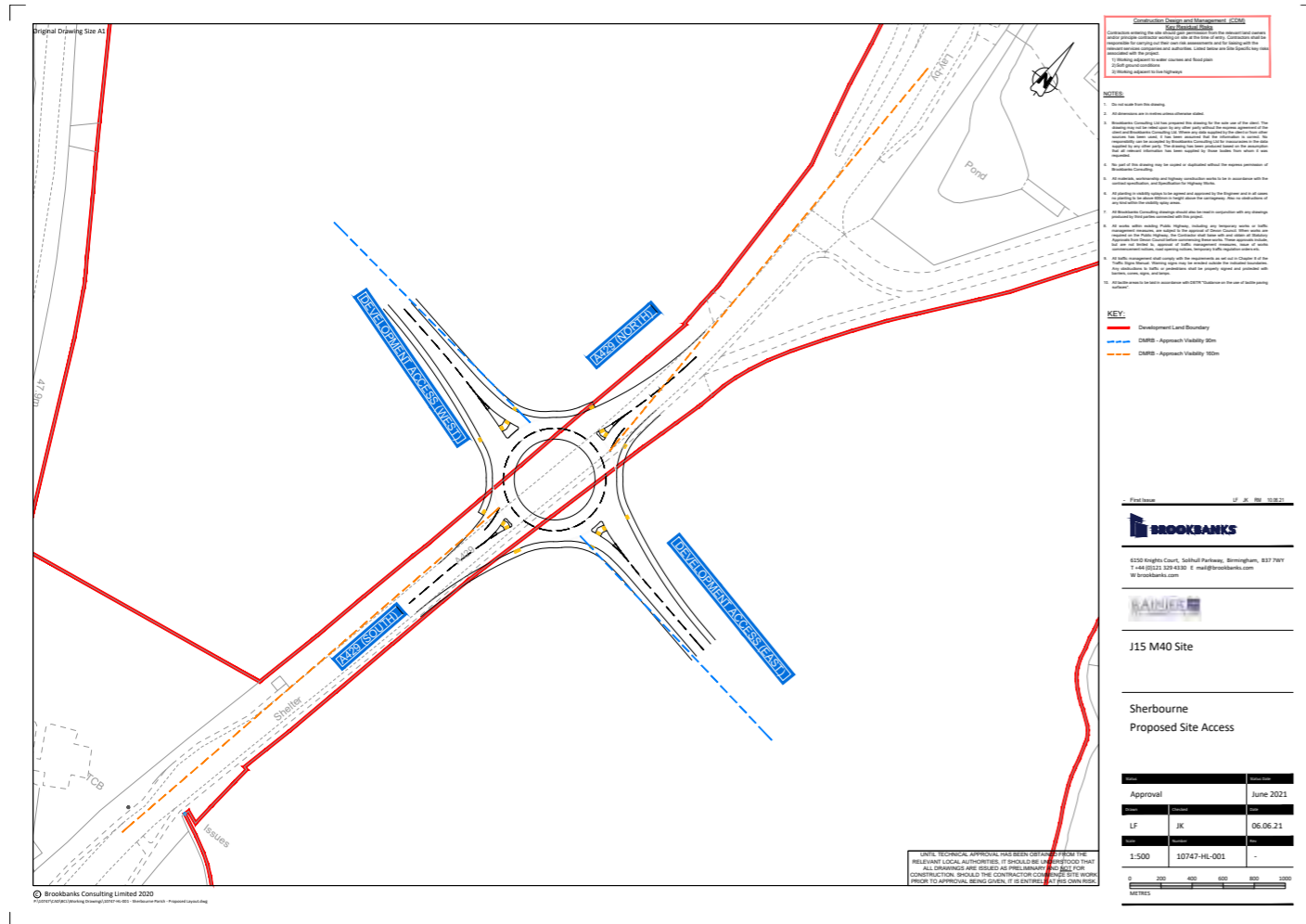
Appendices

Appendix A Preliminary Draft Land Budget Plan

The land budget plan outlines the extent of the proposed employment use, and supporting green infrastructure. This would be subject to more detailed survey work to fix the quantum of land needed to effectively buffer the Sherbourne Conservation Area (in terms of e.g. screen planting and/or bunding) to the west, assess the quality of retained trees and root protection areas, ecologically sensitive habitats (e.g. Longbridge Brook), and to provide surface water attenuation and appropriate biodiversity gains.



Appendix B Preliminary Site Access Plan



References

- Stratford-on-Avon and Warwick District Councils (2023) South Warwickshire Local Plan: Stage 2: Issues and Options Consultation.
- Experian (2022) Local Market Forecasts Quarterly: December 2022 – GVA - Category.
- ONS via Nomis (2021) Business Register and Employment Survey.
- ONS via Nomis (2021) Annual Population Survey (T12a, T19).
- Experian (2022) Local Market Forecasts Quarterly: December 2022 – GVA – Category – 2022-2042 forecast.

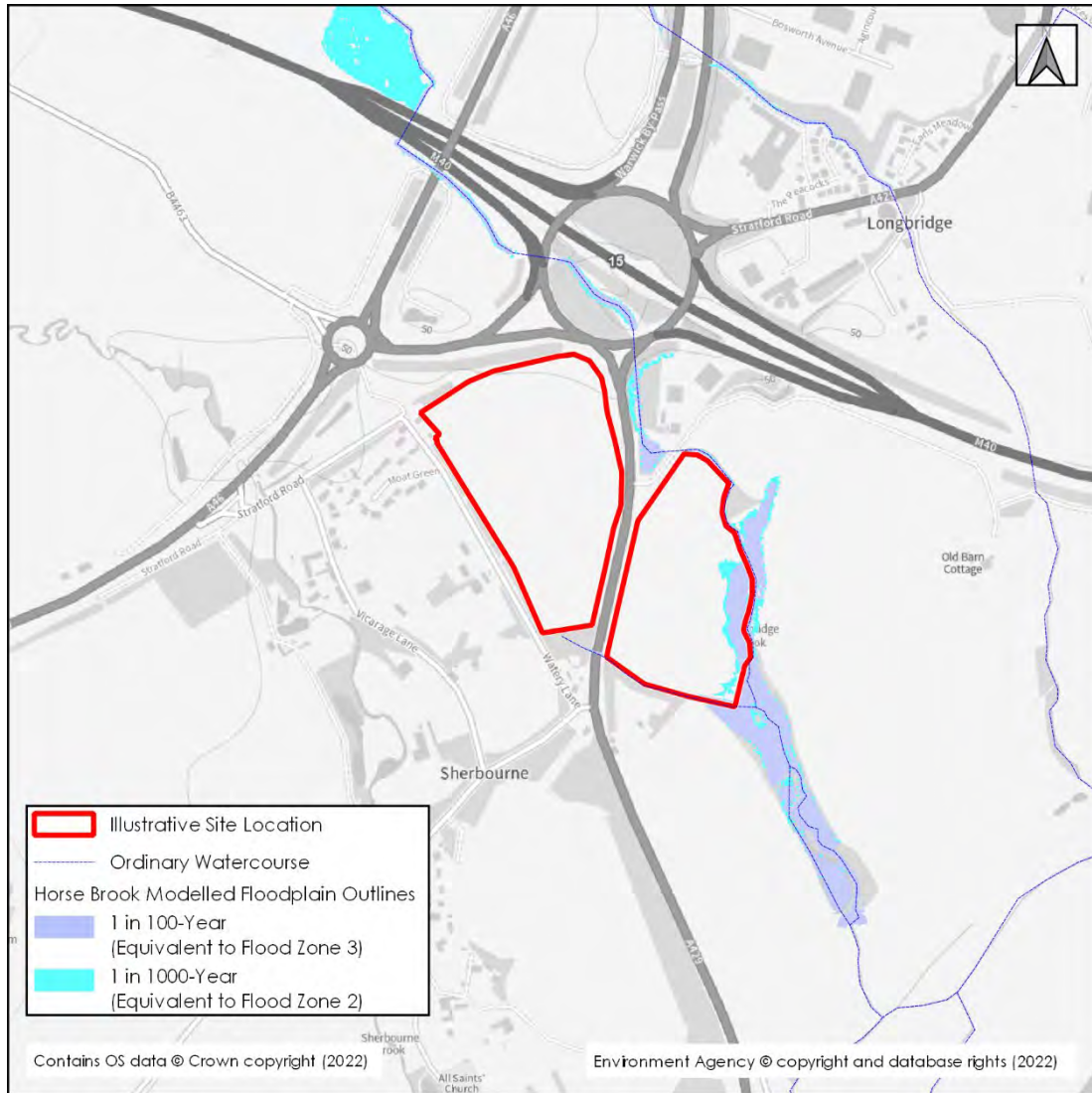
- Stratford-on-Avon District Council and Warwick District Council (2023) An Economic Development Strategy for Stratford-on-Avon and Warwick Districts to 2028 – Draft for Consultation (February 2023), p19, 20, 22.
- Iceni Projects Limited (2022) Coventry & Warwickshire Housing & Economic Development Needs Assessment (HEDNA), Final Report, November 2022.
- Warwick District Council (2021) Annual Monitoring Report 2020/21.



Contact us to discuss your project

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Appendix 2: Modelled Flood Zones (Agreed January 2023)



NON-REAL TIME HYDRAULIC MODEL REVIEW



Type of review: Fluival/tidal 1D-2D model

Project	Horse Brook	Job Number	B550P025 (3.27/4.27)	Required coastal standard (if applicable)	
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Model Type	1D/2D	Software	Estry/TuFlow	2nd review	3rd review	4th review
Revision	1	Date	27/10/2022	11/01/2023		
Area Client	Peter Froggatt/ Paul Gethins	Reviewer	Benjamin James Shroude	BJS		

REVIEW SUMMARY/CONCLUSION

Is the model suitable for intended use?	<p>The model is well constructed and there is a good level of reporting. The model appears to be suitable for the intended use once the outstanding red, amber and green comments are addressed. Namely:</p> <ol style="list-style-type: none"> 1) There needs to be supplementary evidence to support the reversal of the gradient of the culvert adjacent to the site. Is the survey in error? Does flood risk to the site change if the gradient is reversed? If flood risk is reduced then the culvert needs to be modelled differently. It would be difficult to justify even a small difference in flood risk. A workaround (given the problems with model stability) would be to apply a blockage to achieve the same flood extent. 2) Manning's sensitivity depth difference maps should be supplied because the model appears to be sensitive to roughness. Manning's detail appears to be sufficient, but further commentary is desirable. The model requires flow sensitivity testing. 3) 2D spill levels are missing for a structure on Longbridge Brook 4) Structure coefficients have not been specified for the ESTRY BBW type bridges. The assumption is that the model has used default values. This needs to be confirmed. <p>Second Review All green, amber and red comments have been addressed in the model report and the model appears suitable for its intended use. (Modeller) Please note that responses should be provided in the review spreadsheet to aid model review. For future uses of this model it should be noted that the model appears to be sensitive to roughness, so any changes to land type and watercourse condition should be reflected in Manning's updates. The model results appear to show a significant deviation in flood extents from the Flood Mapping for Planning. Sufficient hydraulic reasoning is provided and the review of hydrology will add confidence to the concurrent local detailed modelling.</p>
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MODEL REVIEW PROCESS

Hydraulic Model reviews are an essential component of the Hydraulic Modelling Quality Assurance (QA) process that provides confidence in a model's suitability for its intended purpose. Evidence that the model has undergone QA may be requested by external parties and hence all reviews should be written with an expectation that they could be read externally.

Should any issue(s) be raised during the review process, which require attention, the reviewer should detail the action(s) required in sufficient detail to allow the modeller to complete the changes as appropriate. Completion of this Model Review document does not automatically constitute model approval. Once the suggested changes have been completed, the reviewer may require that the model be resubmitted for further review to establish whether the actions have been completed satisfactorily. Only once all the amendments have been completed satisfactorily, will the model be approved and the quality assured by the reviewer.

It is recommended that the reviewer makes good use of the fluvial design guide chapter 7 and the user manual/help guides for the appropriate modelling software.

Depending on the work being reviewed some questions or entire sections may not be relevant, in which case they can be deleted. On completion of the review the reviewer may choose to use the following colour coding system to alert the modeller to the priority of the actions required (if any).

Colour coding used (RAG):

Green – Good practice – not strictly necessary in this case but good practice for future studies.

Amber – Useful – please follow recommendation if time allows.

Red – Must do.

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