

**TwinWoods Garden
Community
Representations to the
Bedford Borough Council Part
2 Consultation**



3 September 2021

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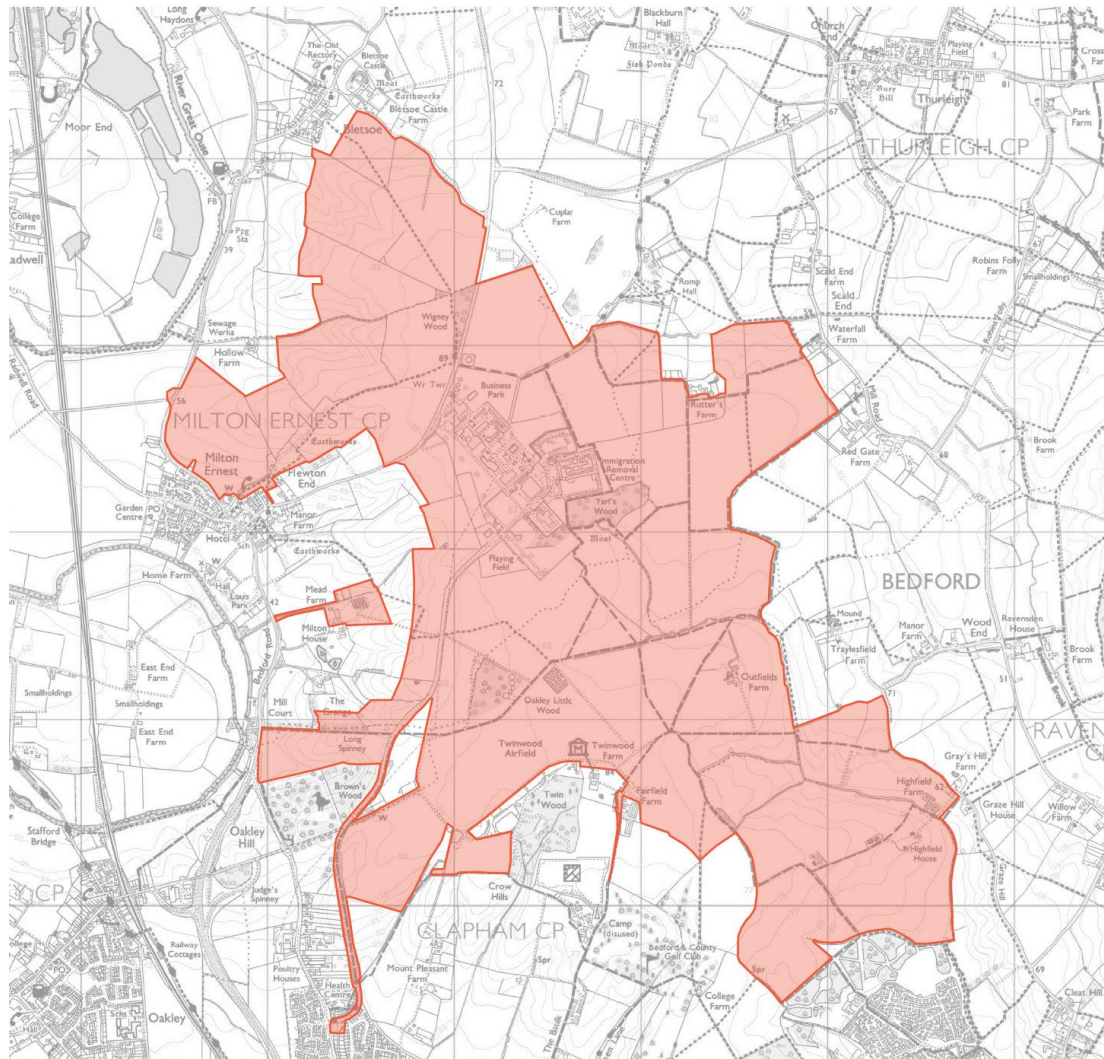
1.0 Introduction

- 1.1 This consultation response is made on behalf of [REDACTED] who in combination control the land to the north of Bedford known as 'TwinWoods'. The representations have been prepared by Lichfields with inputs from Vectos.
- 1.2 This document comprises a formal consultation response to the ongoing Bedford Borough Council (BBC) 'Local Plan 2040 Draft Plan Strategy Options and Draft Policies Consultation ("the 2040 Local Plan") which launched on the 29th June 2021 and runs to 5.00 p.m. on Friday the 3rd September 2021.
- 1.3 This consultation response is focused around three principle issues that we have identified following a review of the draft Plan strategy options:
- **Section 2.0** considers the location of the proposed allocations on the edge of the borough and whether the effects on Huntingdonshire District Council have been considered sufficiently;
 - **Section 3.0** looks at the 2040 Local Plan's spatial strategy and considers whether analysis and evidence has gone far enough to understand how development north of Bedford can be unlocked, specifically with regards to highways and sustainable transport mitigation. Specifically, Vectos have described how the evidence-based transport work undertaken for BBC does not align with the principles of sustainable development and travel; and
 - **Section 4.0** considers housing need in Bedford and the ability of the Local Plan to look forward in this regard, accounting for the inevitable growth arising from the OxCam Spatial Framework and the corresponding housing and economic growth in Bedford; and
 - **Section 5.0** – provides a summary and concludes the representations document.
- 1.4 It is acknowledged that the NPPF 2021 was published after the 2040 Local Plan consultation was launched, but the transitional arrangements introduced by the new version still apply. Most importantly for BBC, this includes those at paragraph 22 related to policies for larger scale developments being set within a vision that looks at least 30 years ahead but also updates related to sustainable transport and mitigating climate change. How BBC could respond to these policy changes is addressed throughout this consultation response.

TwinWoods

- 1.5 Details of the of TwinWoods Garden Community were initially submitted on the 14th August 2020 to the BBC Call for Sites Consultation, followed by a Regulation 18 response to the Bedford Local Plan consultation in September 2020 and a further Feasibility Study and Heritage Report were submitted in early 2021. For reference, the location of land controlled within the site known as TwinWoods is shown in Figure 1.1 on the following page.
- 1.6 The TwinWoods site boundary is shown in red and has the potential to accommodate c 6,000-7,000 homes and employment space to facilitate 2,000-4,000 jobs.

Figure 1.1 Site Location - Land controlled by [REDACTED]



2.0 **Location of growth and the impact on Huntingdonshire**

Growth Strategy Options

2.1 The 2040 Local Plan consultation document sets out the level of housing growth required in Bedford Borough and the emerging preferred growth strategy options to meet growth needs within the Plan period. It states that 25,500 homes are required over the 20-year Plan period from 2020 to 2040, and that as a result of existing commitments totalling 13,000 homes, the new Local Plan will need to allocate land for a minimum of 12,500 new homes.

2.2 There are four emerging preferred options forming the spatial strategy to meet this growth. These are:

- Option 2a: Development in and around the urban area, plus A421 transport corridor with rail-based growth and southern parishes growth.
- Option 2b: Development in and around the urban area, plus A421 transport corridor with rail-based growth and southern parishes growth, plus one new settlement.
- Option 2c: Development in and around the urban area, plus A421 transport corridor with rail-based growth, plus two new settlements.
- Option 2d: Development in and around the urban area, plus A421 transport corridor with rail-based growth, southern and eastern parishes growth, plus one new settlement. (emphasis added)

2.3 Of the four growth options currently being consulted on, three include the provision of at least one new settlement. The new settlement options that have been selected at this stage are:

- Little Barford – 3,085 dwellings; and
- Wyboston – 2,500 dwellings.

2.4 The inclusion of one new settlement as part of the growth strategy (options 2b and 2d) would provide c.20-25% of the housing allocations required over the Plan period. If two new settlements were included (option 2c), these would provide c.45% of the growth required. This represents a significant proportion of proposed development across the Borough over the 20-year plan period.

Growth in Huntingdonshire

2.5 The 2040 Local Plan consultation document shows that both new settlements are located on the eastern edge of the Borough, in close proximity to the administrative boundary of BBC's neighbouring authority Huntingdonshire District Council (HDC). Where new development is proposed adjacent or near to the boundary with other local authorities, it is important that the combined effects are taken into account. The location of the new settlements therefore raises questions around the impact on Huntingdonshire and whether the evidence base has adequately considered the infrastructure requirements and transport mitigation that may be required to support these growth strategies, as per the NPPF paragraph 24 and the duty to cooperate.

2.6 At this point, it is important to look at the strategy for development within Huntingdonshire. The District's new Local Plan adopted in May 2019 (the HDC Plan) sets out that around 75% of housing will need to be focused in the spatial planning areas, which are defined as Huntingdon, St Neots, St Ives and Ramsey. A central part of the Plan strategy is development in 'Strategic

Expansion Locations' which offer opportunities that are unprecedented in the District for sustainable development. One of these locations is the growth of St Neots East.

- 2.7 Policy SEL 2 details the expansion of St Neots East, which allocates 226ha of land for mixed-use development including, but not limited to, 3,820 homes (3,265 in the plan period) and 22ha of employment. Combined with additional allocations for 220 homes within St Neots, this growth equates to over 17% of the District's allocated housing requirement. The plan below shows the cumulation of the two new settlement locations in Bedford and the allocation of St Neots East in HDC.

Figure 2.1 Location plan of St Neots East, Little Barford and Wyboston new settlements relative to St Neots



Source: Lichfields

- 2.8 With significant development already proposed in this location, it is particularly important that the cross-boundary implications of the new settlements at Little Barford and Wyboston are taken into account. A review of the documents submitted for the HDC Plan shows that the Council liaised with BBC during the preparation of the Plan, and that BBC stated they were happy with the relationship between St Neots, development south of the A428 in Bedford Borough (where Little Barford is located) and green infrastructure corridors traversing the boundary¹. It is also noted that HDC specifically clarified with Central Bedfordshire Council (CDC) that they had no outstanding concerns regarding the expansion of St Neots East².

¹ Statement of Compliance with the Duty to Cooperate (HDC) 2018, available [here](#)

² Emails in Regard to Matter 2: Duty to Cooperate (HDC) 2018, available [here](#)

- 2.9 In this context, the following section discusses the evidence base supporting BBC's consultation document to see if the cross-boundary implications have been adequately considered, as they were by HDC.

The Evidence Base

Bedford Borough Transport Model Local Plan Assessment Summary Report

- 2.10 This document has been used to inform the Plan making process and provides a summary of the likely effects of four potential development/spatial scenarios on traffic flows in Bedford Borough. More detail on our review of this report and associated model runs can be found in Section 3.0 of this consultation response. It provides a high-level comparison of the scenarios looking at several key transport metrics and identifies the mitigation measures required for each scenario.
- 2.11 'New settlement-focused growth' was one of the four spatial scenarios tested in the transport model, which focused on providing growth through the creation of one or more new settlements in the Borough. Figure B.3 of the summary report shows that this scenario is based on the four new settlement proposals put forward as part of the 2020 call for sites. This includes Colworth (2,400 homes), Twinwoods (3,495 homes), Wyboston (2,500 homes) and Little Barford (3,085 homes).
- 2.12 Notably, the four scenarios tested within the assessment are all discrete, and are not considered in combination with one another. For instance, the transport assessment considers 'urban-focused growth', 'infrastructure-focused growth' and 'new settlement-focused growth' as three separate scenarios, whereas the emerging preferred options are a combination of these. The highway impact of the emerging preferred options is therefore unclear in this regard.
- 2.13 In terms of the effect on traffic beyond the Borough, one of the key transport metrics analysed is 'cross-boundary impacts'. This is the forecast of vehicle volume to road capacity, measured at junctions outside of Bedford Borough. While this metric could provide a valuable insight into the impact of the proposed new settlements on traffic outside of the Borough, the outcome is limited for two reasons.
- Firstly, the results for the 'new settlement-focused growth' scenario reflect the combination of all four new settlements listed above, and not just the two (Wyboston and Little Barford) that have now emerged as the preferred locations. This extends to the assessment of transport mitigation; the 'cross-boundary impact' is forecast to neither improve or worsen with the inclusion of mitigation measures, but this includes the mitigation required to support all four new settlements.
 - Secondly, the results are intended to present the forecast scale of change between the four development scenarios, highlighting the relative performance of the scenarios and not the absolute performance. For the 'cross-boundary impact' metric, the data analysed the number of nodes (junctions) where the volume-capacity ratio exceeded 85% (the threshold for which congestion becomes apparent) and varied significantly (over 5%) across the four growth scenarios.
- 2.14 As a result of this two-factor approach, the results do not truly reflect the impact on congestion outside of the Borough.
- 2.15 We acknowledge that more in-depth transport assessments have been carried out which analyse the Little Barford and Wyboston new settlements both alone and in combination. However, while these do appear to analyse the impact on the highway network outside of the Borough,

they are not explicit in terms of the impact on neighbouring authorities or the cross-boundary mitigation required to support the proposals.

(Draft) Sustainability Appraisal Report

- 2.16 An essential part of the evidence base, this document sets out the sustainability appraisal framework and sustainability objectives for the emerging 2040 Local Plan. The draft report provides an appraisal of the likely social, economic, and environmental effects of each growth strategy option put forward in the process of Plan preparation and concludes that the four emerging preferred growth options (2a to 2d) are the best performing overall.
- 2.17 Throughout the appraisal of each spatial option, there is not a clear consideration of the sustainability impacts on neighbouring authorities. The only point that categorically discusses the wider social, economic and environmental impact outside of Bedford relates to the objective to 'promote vital and viable town centres'; the comments for spatial options including a new settlement state that residents might visit competing town centres outside of the Borough if these are nearer or easier to visit with improved transport links.
- 2.18 Further, the assessment states that locating growth in new settlements is still likely to increase the need to travel and length of trips to 'the urban area', which is where most services, facilities and employment opportunities will remain located. Here, the urban area refers to Bedford only and not nearby settlements beyond the Borough boundary which are geographically closer to the two new settlement proposals.
- 2.19 The lack of consideration around the potential cross-boundary impacts on Huntingdonshire (or any other neighbouring local authority) within the report may be due to the fact that there is no specific reference to this within the fifteen sustainability appraisal objectives. It appears that this matter has been somewhat neglected, and that the sole focus of the appraisal is on the effects within Bedford. It is therefore questionable whether the sustainability appraisal is sufficiently robust in justifying the preferred growth options; strategic discussions between neighbouring authorities is essential to the delivery of sustainable development (e.g. sustainable transport links).

Development Strategy Topic Paper

- 2.20 It is a requirement of the Plan-making process that Plans are tested to ensure their deliverability. This document provides a deliverability assessment of the development strategy options that have been considered so far in the preparation of the new Local Plan, in particular why options 2a, 2b, 2c and 2d have emerged as the preferred options for inclusion in the consultation document.
- 2.21 The deliverability analysis of each option is high level only. This is due to the absence of more detailed work, including a full infrastructure delivery appraisal, Plan wide or site-specific viability appraisals and detailed transport modelling. For each option, the key strengths and weakness are identified as a basis for determining whether, in delivery terms, there is a case for them to be selected as preferred options.
- 2.22 Throughout the analysis, there are only two parts that touch on wider cross-boundary implications. First, in assessing option 2a, one of the delivery challenges identified is that *"substantial development has already taken place on the edge of Bedford. Further outward spread runs the risk of coalescence with nearby settlements"*. However, given that option 2a focuses growth around the urban area and southern parishes, this only relates to settlements south of Bedford, such as Wootton, Stewartby and Marston Moretaine. It is of concern that this is thought to be a strategic delivery issue for this growth option, but not for others proposing a

new settlement on the eastern edge of the Borough, given that these pose a greater risk of coalescence with St Neots.

- 2.23 For options 2a to 2d (the emerging preferred options), a strength is identified as the ‘opportunity to establish a new planned community at Wyboston or Little Barford in proximity to the proposed EWR station at St Neots / Tempsford’. It therefore acknowledges the proximity of the proposed new settlement options to existing areas within Huntingdonshire; however, it does not then consider the cumulative impact of this on the neighbouring local authority as a weakness. This appears to be one-sided, disregarding the cross-boundary impact as a delivery challenge.
- 2.24 Taking the two points above together, the deliverability analysis is therefore inconsistent in its approach and does not represent an objective assessment of each option.

Issues & Options Consultation – Summary and responses

- 2.25 This document summarises responses to the 2020 Issues and Options consultation. In the comments received (not specifically attributed to any party), concern was expressed about the impact of growth on communities and infrastructure beyond the Borough boundary (particularly around St Neots), and that cross-boundary discussions should continue through the Duty to Co-operate. Other respondents also felt that the cumulative impact on infrastructure is important and therefore cross-boundary master-planning may be an option. The Council’s response does not provide a clear and reasonable answer to these concerns.

Cooperation with Huntingdonshire

- 2.26 As set out above, a review of the evidence base supporting the consultation document indicates that the location of the proposed new settlements adjacent to Huntingdonshire has not been adequately assessed. Overall, it does not provide a clear justification demonstrating that there will be no significant adverse impacts on the neighbouring Authority in terms of deliverability, highway mitigation and infrastructure, and further evidence is needed to show that the proposed new settlements are achievable; significant investment in infrastructure may be necessary in order to deliver development in this area at scale.
- 2.27 National policy states that:
- “Effective and on-going joint working between strategic policy-making authorities and relevant bodies is integral to the production of a positively prepared and justified strategy. In particular, joint working should help to determine where additional infrastructure is necessary.”* (NPPF Paragraph 26).
- 2.28 To demonstrate effective and on-going joint working, national policy requires strategic policy-making authorities to prepare and maintain statements of common ground documenting the cross-boundary matters being addressed and progress in cooperating to address these. The statements should be made publicly available throughout the Plan-making process to provide transparency (NPPF, Paragraph 27). They also form part of the evidence required to show that local planning authorities have complied with the Duty to Cooperate; this is a legal duty to engage constructively and actively with neighbouring authorities and other prescribed bodies in planning for strategic matters that cross administrative boundaries.
- 2.29 A Duty to Cooperate statement forms part of the evidence base for the adopted Bedford Local Plan 2030. While the adopted Plan does not include any proposals for new settlements, those put forward in the 2020 call for sites were consulted on throughout the Plan-making process. In the record of cooperation, one of the issues identified was that a new garden village at Wyboston would be adjacent to Huntingdonshire. The record goes on to state that should the Wyboston

proposal proceed, there will be a need for cross-boundary implications to be assessed by HDC and BBC and that *"the two Councils will continue to cooperate in respect of future new settlement proposals"*.

2.30 Following this, we cannot find any evidence that further discussions are taking place with neighbouring authorities now that new settlement proposals in this area are being consulted on. For Plan-making, national planning practice guidance (NPPG) makes clear that councils are expected to document the activities undertaken during the process of addressing strategic cross-boundary matters, including working together at the outset of Plan-making and producing joint research. This is particularly important for new settlements, which typically constitute a significant proportion of growth over the Plan period, and even more so now in the context of the NPPF 2021 paragraph 22 and the need to develop a vision within which to set policies for larger scale development such as new settlements for a minimum of 30 years, ten years more than the emerging Plan period. The proposition for a new settlement at Wyboston is in excess of 10,000 new homes³, quadruple the emerging allocation figure of 2,500 and with a potential impact on Huntingdonshire which is significantly greater than that associated with just 2,500 homes. Little Barford has an emerging allocation for 3,085 homes, with its maximum potential set out as 3,385 to 3,955 in the site pro-forma⁴, which is more in line with the 2040 Local Plan.

2.31 It is therefore not clear that BBC is currently cooperating with HDC in assessing the cross-boundary impacts of the proposed new settlements at Little Barford and Wyboston. Such an approach is not in compliance with national policy. The Council needs to show that it is engaging with HDC to determine that the new settlements are deliverable over the Plan period and that they are based on effective joint working across the local authority boundaries. This evidence is also needed to provide communities and other stakeholders with a transparent picture of how they have collaborated.

³ Local Plan 2040 Site Assessment Pro Formas June 2021, page 356

⁴ Local Plan 2040 Site Assessment Pro Formas June 2021, page 318

3.0 Highways Capacity and Development to the North of Bedford

- 3.1 TwinWoods is not a shortlisted site for the emerging 2040 Local Plan review. The reason for this appears to be almost solely due to traffic capacity issues at the Manton Lane/Clapham Road/A5141 roundabout on the A6, in north Bedford, as it is perceived through the Bedford Borough Transport Modelling (BBTM) results alone. In addition to TwinWoods, development of any other sites north of Bedford appears to have effectively been ruled out with no exceptions based on highway capacity grounds. There is no apparent consideration of measures to overcome these concerns through reallocation of roadspace, nor the opportunities to be gained through implementing policy compliant Garden Village principles central to the development of the TwinWoods proposals.
- 3.2 Vectos has undertaken a detailed review of BBC's highways evidence, especially the modelling, this is appended to this consultation response at Appendix 1.
- 3.3 However, stepping back, we consider that the approach BBC has taken to its 2040 Local Plan site selection process is an incorrect one. It is not policy compliant in the context of the Climate Emergency declared by BBC, as it follows a 'predict and provide' approach to traffic capacity that ignores mobility as a whole, contrary to leading transport guidance. This guidance, amongst many other things, includes a commitment to embed transport decarbonisation principles in spatial planning and across transport policymaking and accelerate modal shift to public and active transport (Department for Transport paper – Decarbonising Transport published in July 2021⁵).
- 3.4 The recent changes to the NPPF 2021 make moves in a similar direction including reference to the 17 Global Goals for Sustainable Development at paragraph 7, the need for plan making to promote sustainable patterns of development to align growth and infrastructure with improving the environment and mitigation climate change (paragraph 11a) and planning for larger scale development needing to be supported by necessary infrastructure and facilities including a genuine choice of transport modes (paragraph 73). A more minor change includes reference to planning policies aiming to achieve healthy, inclusive and safe places through the use of attractive, well-designed, clear and legible pedestrian and cycle routes.

Vision & Validate or Predict & Provide in Planning Policy

- 3.5 Vision & Validate (V&V) is an expression coined to represent current planning policy expressed in the NPPF. The labels have been applied to distinguish the approach from the discredited and abandoned, except in particular circumstances, Predict & Provide (P&P) which has been used in the BBTM evidence.
- 3.6 V&V embraces masterplanning, planning and transport. The constant threads, and highest priorities, are climate, health and economy (NPPF paragraph 8). In contrast, P&P was commuter traffic focussed (traditional morning and evening peak hours), and its highest priority was providing convenience for those that would prefer to drive at the busiest times. V&V is an inward out approach to decide, or establish, the vision for what is desirable, and design to achieve that.
- 3.7 The recently published DfT Paper 'Decarbonising Transport' (July 2021) endorses the V&V approach:

⁵

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf

“We recognise that the Government has a role in helping Local Planning and Highways Authorities to better plan for sustainable transport and develop innovative policies to reduce car dependency. We need to move away from transport planning based on predicting future demand to provide capacity (‘predict and provide’) to planning that sets an outcome communities want to achieve and provides the transport solutions to deliver those outcomes (sometimes referred to as ‘vision and validate’). We will continue to work with MHCLG to identify how we can best support local authorities to develop innovative sustainable transport policies as part of the planning process, how this can be used to better assess planning applications, and better monitor local transport outcomes to deliver on our ambitions for sustainable transport use⁶.”

- 3.8 When it comes to considering traffic, there is a fundamental difference in thinking between national planning policy as it now is, and P&P as adopted by BBC’s approach to it’s Plan. In real life, traffic is a function of available roadspace. At busy times, increasing road capacity generates traffic, and reducing road capacity reduces traffic. Capacity is a tool. This can be seen by observed effect throughout the country. It is no coincidence that gridlock never occurs on a regular basis. A good example is in London, where since 2000 road capacity has been reduced across all areas, with a reduction of 30% in the Central Area. Research from the EU CREATE report, also reported in TfL’s Travel in London Report no. 9 states:
- “Research as part of the CREATE project has found that in London over the last ten years up to 25% of road space on key routes in London has been reallocated from private vehicle to cycling, walking or public transport infrastructure. However average journey time / **congestion today is broadly the same as ten years ago**. This has been achieved whilst accommodating 7 million more journeys today (all modes) per day (increasing from 24m to 31m). This capacity has been unlocked thanks to the modal shifts. This shows that efficient reallocation of road space can unlock capacity for more journeys, accommodating population and economic growth, whilst keeping congestion constant.”*
- 3.9 P&P looked at it a different way. It made the judgement that a notional forecast of traffic would come what may, and because of that it needed to be accommodated, often by road building. This was self-fulfilling and is one of the reasons why P&P can now be the antithesis of national planning policy in delivering sustainable development. Indeed, there is no expression in the NPPF which promotes P&P, but promotes an approach that has been characterised by the phrase V&V which includes a commitment to mitigating climate change and specifically, the need to provide a genuine choice of transport modes in supporting new settlements, i.e. not just expecting and modelling for unsustainable car-based journeys. Liveable neighbourhoods and sustainable transportation modes need to be built into the design of a large-scale development to comply with the NPPF.
- 3.10 Even before the latest changes to the NPPF, there have been clear examples of this interpretation.
- 3.11 In 2013, the Inspector for the Hartford, Cheshire West and Chester, Hartford and School Lane Section 78 Inquiries included in his determination that *“it is not the aim of policy to protect the convenience of commuting car drivers”*. The decision was called in by the Secretary of State, who agreed with the Inspector’s conclusions and recommendation and allowed the Appeals for a total of 650 homes⁷.

⁶

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarb_onising-transport-a-better-greener-britain.pdf, page 158

⁷ Appeal References: APP/A0665/A/12/2179410 & APP/A0665/A/12/2179374

- 3.12 In 2016, Stevenage Borough Council submitted a Mobility Strategy in support of its Local Plan, and with the agreement of Hertfordshire County Council as highway authority. The strategy explained that it steered away from the historic and contra policy P&P, and that instead of prioritising road building the strategy was to prioritise mobility as a whole. It assumed no peak period traffic growth beyond the designed capacity of the network, taking into account some pinch point works, focussing its infrastructure funding on more sustainable means of movement. The Local Plan Inspector endorsed this approach⁸.
- 3.13 In 2016 Cardiff County Council promoted a 50:50 approach to traffic in Cardiff. It built a traffic model and loaded it with traffic forecasts for a Local Development Plan growth of about 40,000 homes and 40,000 jobs, and, by design, no new road infrastructure except where it provided bus priority. They removed traffic from the model until it ‘functioned’. They assumed that traffic levels would only exist up to the limit of the network (the capacity of the network determines the traffic volume) and then determined what the movement mode split would be in Cardiff for all movement demand to be satisfied, coming up with the expectation that by the end of the Plan period the mode split would be 50:50.
- 3.14 The V&V approach is unequivocally set out in the Garden City principles (which the NPPF para 73 c directs the reader to) and endorsed by the industry bodies including the Department for Transport (Decarbonising Transport – A Better Greener Britain), the Royal Town Planning Institute⁹, the Chartered Institution of Highways and Transportation¹⁰, the Town and Country Planning Association¹¹ and TRICS¹².
- 3.15 Equally, these industry bodies explain that P&P is abandoned and is used to the detriment of planning better places.
- 3.16 It is not the case that V&V has no regard to traffic and traffic effects. There are circumstances where maximising road capacity is considered beneficial in planning, for instance in considering regional economic performance. There are also safety implications, particularly in respect of the strategic road network, such as motorway slip roads, where capacity is used for safety as opposed to convenience reasons.
- 3.17 Following the V&V approach is in accordance with national planning policy and, especially in light of the changes to the NPPF 2021, it is harder to justify how the P&P approach could achieve all the sustainability and climate change commitments of the Framework, and therefore risks the soundness of the Plan.

Highways, Placemaking, Health, Climate Change

- 3.18 P&P approach to transport planning places too much emphasis on individual travel rather than planning communities which are centred around active travel and public transport which facilitate the behavioural changes that are required for decarbonisation of the transport sector.
- 3.19 The promotion of 20-minute neighbourhoods is recognised in DfT’s Decarbonising Transport report (July 2021), which has an aspiration to “*place cycling, walking and public transport provision at the heart of local plan making and decision taking for new developments*” (page 158).
- 3.20 The policy approach, represented by the phrase V&V, is all encompassing. Traffic is not a subject in its own right, and neither is transport. There is an interaction between masterplanning, land

⁸ Report on the Examination of the Stevenage Borough Local Plan 2011-2031, Reference: PINS/K1935/429/6

⁹ Net Zero Transport (RTPI Research Paper, January 2021)

¹⁰ Better Planning, Better Transport, Better Places (CIHT, August 2019)

¹¹ Garden City Standards – Guide 13: Sustainable Transport (TCPA, September 2020)

¹² TRICS Guidance Note: On the Practical Implementation of the Decide and Provide Approach (February 2021)

use, landscape, economy, mobility, accessibility and traffic. Each affects the other, and there is an iterative procedure required before finalising on the best “place-based solution”¹³.

- 3.21 The V&V approach at TwinWoods has embraced this with provision of everything communities need in 20-minute neighbourhoods¹⁴, reducing the need for individual travel. The strategic modelling approach undertaken in the BBTM has not and does not. It appears to be a stand-alone traffic-based exercise with some adjustments made for limited mode shift. For this reason the modelling results are not appropriate to make planning decisions in isolation.

How has this impacted TwinWoods?

- 3.22 In transport modelling terms, the BCC approach to assessing TwinWoods does not look at the new settlement as a new self-sustaining town, but only as additional housing all attracted to Bedford and beyond. This is an archaic view of development, not reflective of what is proposed at TwinWoods, and contrary to BBC’s own visions and objectives.

- 3.23 In BBC’s ‘Strategy Options and Draft Policies Consultation’ (June 2021) document the Transport Strategy states (p.3.19-3.22):

“The basic premise for transport investment is that business as usual will not get us to where we want to be...

*What this means is that in order to deliver sustainable growth; transport investment, travel behaviour and the way we think about moving around will **need to change**. The impact of continuing with current travel behaviour will have a detrimental impact on the very things that make the area successful...*

Increased economic activity and growing populations, if left to continue in traditional patterns of movement and behaviour, will mean people spend longer on congested transport networks, the environment will be degraded, and quality of life expectations will not be met.

The EEH Strategy includes...

- *Focus on decarbonisation of the transport system by **harnessing innovation** and supporting solutions which create green economic opportunities*
- *Promote investment in digital infrastructure as a means of improving connectivity, in order to **reduce the need to travel***
- *Use delivery of East West Rail and mass rapid transit systems...*

*Champion increased **investment in active travel and shared transport solutions** to improve local connectivity to ensure that everyone has the opportunity to realise their potential” (emphasis added).*

- 3.24 An allocation of a new settlement at TwinWoods would meet all of these objectives, and it could be argued that some sites selected in the draft Plan have not demonstrated this but instead rely on new strategic road infrastructure releasing highway capacity at a local level. Using the P&P

¹³

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf, page 144

¹⁴ The 15 minutes-city: for a new chrono-urbanism! – Professor Carlos Moreno;

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1009448/decarbonising-transport-a-better-greener-britain.pdf, page 158

modelling results as a pass/fail for development on solely highway capacity terms is the antithesis of BBC's own aspirations for sustainable growth.

- 3.25 In section 4.0 of these representations we note that the updated NPPF requires a 30-year vision for the Plan. It will be necessary for BBC to revisit its strategic choices to 2040 in light of the long term vision for the Borough which must recognise that over this longer period – if not by 2040 – there will be structural shifts in sustainable transport that render the current P&P approach underpinning the Plan out-of-date.

How can this be addressed?

Types of Model

- 3.26 The BBTM is a strategic model which has been designed for the purpose of analysing the traffic performance across the Borough for the 2040 Local Plan. This is a Saturn model and given its strategic purpose, it will 'load' traffic onto individual junctions in a manner which cannot occur in reality (i.e. this much traffic simply cannot exist within such a time period). The coarse nature of the software means it often overestimates traffic flows at individual junctions therefore and, when closely scrutinised, will forecast 'chaos' in this respect. It cannot be relied upon in isolation as a means of informing decisions around the operation of the highway network.
- 3.27 A microsimulation model is more appropriate for the assessment of TwinWoods and an individual junction or corridor. This would allow for a more reliable analysis of the behaviour of vehicles at the Manton Lane roundabout by determining the most appropriate highway 'interventions'. As a result of the greater detail in the model, the outputs are closer to reality than from a strategic model and capacity is more accurately reflected. It is therefore both adequate and proportionate to the task of developing policies for the allocation of TwinWoods in the new Local Plan. As such, its use complies with national policy and is sound in principle.
- 3.28 As different types of model they have different functions. They are both tools that can be used to inform the Local Plan and demonstrate the soundness of the Local Plan and selected sites, but in different ways. The results must then inform the planning decisions made, rather than dictate them as it appears has been done in Bedford.
- 3.29 The requirement for soundness is that the Plan should be prepared in accord with National planning policy (NPPF para. 35). NPPF para.31 says: "*The preparation and review of all policies should be underpinned by relevant and up-to-date evidence. This should be adequate and proportionate, focused tightly on supporting and justifying the policies concerned, and take into account relevant market signals.*"

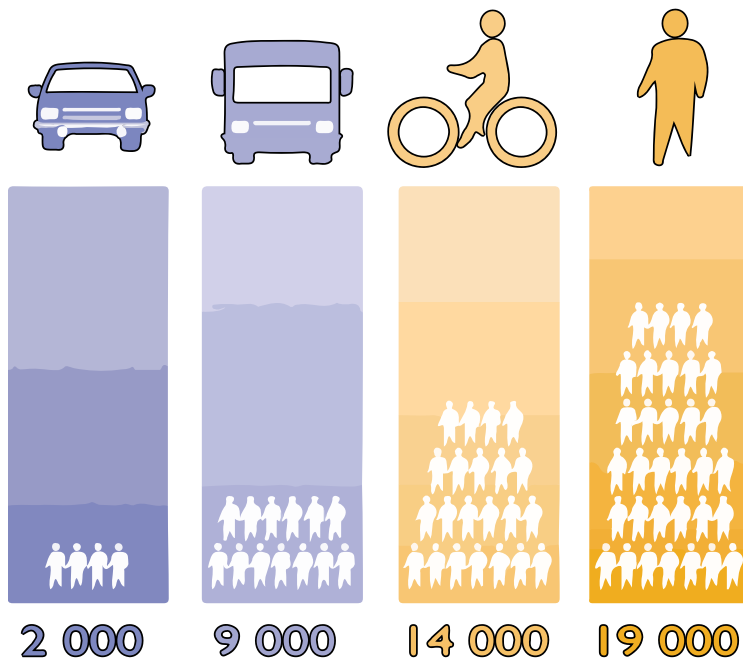
Alternative Mitigation

- 3.30 Despite the BBTM not being the correct tool to accurately forecast traffic impacts on specific junctions, BBC has used its results to rationalise what is, in effect, a moratorium on new development to the north of Bedford that will constrain the Plan beyond its Plan period and infect its 30-year vision now required by the NPPF.
- 3.31 The issues at the Manton Lane roundabout become 'significant' with the inclusion of an additional 10 years of traffic growth excluding potential 2040 allocation sites. The inclusion of this growth is questionable as it means that the mitigation strategy derived through the modelling is one which can only reinforce existing travel patterns and exacerbate car dependence by continuing to seek to provide capacity for predicted traffic movements. As identified, this is not in line with the direction of national (or indeed local) policy.

3.32 As new allocated developments come forward within Bedford the reality is that they will be developed in line with policy aspirations and will buck historic trends in travel patterns. In this case, congestion at the Manton Lane roundabout is unlikely to occur in the fashion predicted by the BBTM.

3.33 It is not evident that meaningful alternative measures (to road capacity enhancements) have been identified such as re-allocation of road space to higher capacity modes, and the supporting joined-up infrastructure to make these modes a viable form of travel. This is not tested in the BBTM. The below is an image extract from the document ‘Ticket to the future. 3 Stops to Sustainable Mobility’.

Mobility. Figure 3.1 Number of people crossing a 3.5 metre-wide space in an urban environment during a one hour period



Source: Ticket to the future. 3 Stops to Sustainable Mobility. UITP International Association of Public Transport, Brussels. 2003 based on Botma and Pependrecht *Traffic operation of bicycle traffic*. TU Delft 1991

3.34 Critically however, it is a questionable assumption that drivers will continue to load onto a junction that is operating at capacity without acting to minimise their own inconvenience. This is not realistic and hence excluding beneficial development on this basis is not in accordance with a balanced approach.

Development to the North of Bedford

3.35 TwinWoods is designed as an exemplar Garden Community which embodies the placemaking and transport principles of modern policy. The proposal is for a new town that consumes much of its own movement in the same way as an established town does, but better. It does this through careful design, accommodating those features which make liveable towns successful and futureproofing for emerging innovations.

3.36 The vast benefits of an allocation in this location appears to have been discarded in lieu of the BBTM results.

3.37 It is clear from a wide variety of national planning and transport policy that using highway capacity as a determining factor to new development is outdated, and not sustainable as we move towards the Net Zero targets set out to address the declared Climate Emergency in the UK.

It has been demonstrated that justification for closing north of Bedford to new development is flawed in the following ways:

- The function of the BBTM is not to measure individual junction effects, nor is it to be the whole determinant of site selection in the planning process;
- Alternative measures to increasing road capacity have not been considered, such as reallocation of roadspace to higher capacity modes, and facilitating a reduced need to travel in the first instance;
- Traffic and indeed transport is not an isolated topic in development selection;
- Highway capacity constraints are not a barrier to development, this follows a P&P methodology rather than a V&V approach as endorsed by DfT as well as other industry bodies.

3.38

Ultimately traffic is a function of roadspace; we design for what we aim to achieve; the Vision. People act to minimise their own inconvenience and thus in reality gridlock does not occur on a regular basis as people increasingly choose to work remotely, order shopping online, travel at a different time, change modes etc. When these principles are accepted by decision makers and the choice is as readily available as jumping in a car, highway congestion is no longer a barrier to the right development in the right location.

4.0 **Wider Housing Needs and the 30-year Vision**

The 30-year Vision

4.1 The publication of the changes to the NPPF on the 20th July 2021 introduced the requirement for policies for larger scale development, including new settlements, to be set within a vision that looks at least 30 years ahead to take into account likely timescales for delivery. See the full paragraph extract below.

“22. Strategic policies should look ahead over a minimum 15-year period from adoption, to anticipate and respond to long-term requirements and opportunities, such as those arising from major improvements in infrastructure. Where larger scale developments such as new settlements or significant extensions to existing villages and towns form part of the strategy for the area, policies should be set within a vision that looks further ahead (at least 30 years), to take into account the likely timescale for delivery.” (emphasis added)

4.2 As BBC is including larger scale developments in its emerging spatial strategy, such as new settlements, the changes to the NPPF 2021 now mean that BBC will need to set these policies within a vision that looks at least 30 years ahead; this means a further ten years at least from the end of the Plan period.

4.3 Whilst the Rt Hon Robert Jenrick MP made clear in his letter to the Chief Executive of the Planning Inspectorate on the 2nd August 2021¹⁵ that guidance on this issue would be available shortly, there is currently no specific indication from MHCLG on how this paragraph can be addressed. The NPPF infers that any vision for BBC would need to cover the strategic site in question and its immediate geography, be that an existing town it will be extending or if it is a new settlement it’s wider hinterland, including how it will interact with it. However, it is impossible for BBC to divorce this visioning exercise from the wider strategic matters at play in the OxCam Arc concerning sustainable growth (housing and jobs) and specifically the ambition to plan for growth in a more sustainable and strategic way as set out in the live MHCLG consultation ‘Creating a vision for the Oxford-Cambridge Arc’. However, alongside this, there will be a requirement to deliver the levels of housing that are necessary to facilitate this growth, and ensure that growth of business can be accommodated in a sustainable fashion, with shorter commuting times, and co-location of businesses and housing.

4.4 On face value, it would appear that the additional evidence required to inform the 2040 Local Plan and to address paragraph 22 of the NPPF would be a vision for BBC’s location in the OxCam Arc and its ability to accommodate strategic growth to 2050 and beyond. The long-term vision could be framed in a way that supports the case for the various strategic sites to emphasise why they are needed and the benefits they bring to their respective areas and borough as a whole, both in this plan period and beyond. The vision may address issues such as the below in a short topic paper:

- 1 The likelihood of ongoing growth needs associated with the location of Bedford in the OxCam Arc (particularly housing but also other forms of development) over the long-term including beyond the Plan period, to 2050 and beyond as per the emerging OxCam Spatial Framework;
- 2 The role of larger allocations in achieving key aspirations for the area it is within (e.g. delivering infrastructure to facilitate sustainable development including public and active

¹⁵ <https://www.gov.uk/government/publications/changes-to-the-national-planning-policy-framework-letter-to-planning-inspectorate>

transport, supporting inward investment, addressing local and Arc wide housing pressures, etc); and

- 3 Place shaping and managing how the area will change over the long term (e.g. reducing the need for future piecemeal approaches).
- 4 Changes to sustainable transport over that longer-term period, meaning that the predict and provide, capacity-constrained approach currently framing the local Plan's current spatial choices is unlikely to be compatible with longer term approach.

Housing Growth

- 4.5 Whilst the starting point of the Local Plan in determining the housing requirement for BBC is the Standard Method figure of 1,275 dpa, we can expect that BBC will required to plan for even more growth under the OxCam Arc Spatial Framework.
- 4.6 The live consultation for the Arc does not set out specific housing targets and therefore the individual housing targets for authorities within the Arc are currently unknown. However, based on the NIC report *'Partnering for Prosperity'* (2017), it is likely that at least a 45% uplift is needed to help secure economic transformation across the Arc¹⁶.
- 4.7 BBC has acknowledged this change on the horizon (see paragraph 1.5 of the Development Strategy Topic Paper below):
- "specific growth requirements and other impacts associated with the Arc are not yet known. In spite of this, councils such as Bedford are being pressed by MHCLG to continue the preparation of their Local Plans in parallel with the Arc work. The consequence of this is that the Arc spatial strategy will not be finalised in time to inform the preparation of this Plan and the Council must focus on meeting its own growth requirements as set out above"*
- 4.8 Recognising the current lack of synchronicity in timings, changes to the NPPF since the 2040 Local Plan consultation launched means that the new visioning work will be forced to grapple with this issue. Whilst it is acknowledged that BBC cannot plan for a specific uplift figure, it is clear from the work conducted by the NIC that there will need to be a significant uplift, (notionally c 45%) that will need to take place across the Arc authorities to facilitate the level of economic growth that can potentially be achieved in the Arc. As such, it is considered that BBC should take a more proactive approach and be more forwards looking with regards to their housing need, and start to consider sites that can deliver an additional quantum of housing later on and in the post plan period which will help the Arc to achieve its sustainable growth aspirations.
- 4.9 A more recent example of housing requirements being increased above the Standard Method within the Arc is the consultation on the Oxfordshire Plan 2050. The Growth Needs Assessment produced in respect of this Plan (July 2021) confirms that the Standard Method figure for housing across Oxfordshire would only be 3,400 dwellings per annum. However, the GNA recognises that should Oxfordshire continue to grow economically at the levels it has been historically, a housing need of c 4,100 dpa would arise, with this increasing to c 5,100 dpa under the terms of the Growth Deal set out by the Oxfordshire Authorities in 2017.

Constraints in the Arc

- 4.10 Bedford is located centrally within the Arc and will be heavily influenced by the Government's preparation of a Spatial Framework for the area. Bedford is relatively unconstrained compared to the other Arc authorities, notably Oxford and Cambridge which have seen significant levels of

¹⁶ Partnering for Prosperity: A new deal for the Cambridge-Milton Keynes-Oxford Arc (2017), available [here](#)

housing and employment space growth and are both heavily constrained by Green Belt which might limit further expansion.

- 4.11 BBC also benefits from the inclusion of stations on the East West Rail line (EWR), the major role of which will facilitate links to high employment areas of Cambridge and Milton Keynes. These relative strategic advantages that Bedford enjoys would suggest that Bedford may well be considered by the Arc as a focus for additional levels of housing growth above those set by the Standard Method and TwinWoods remains a key option to achieve this.

Summary

Whilst the timing of the publication of the NPPF 2021 changes have created a great deal of additional work for BBC, it also provides the Council with the chance to look ahead and plan for the longer term. Although the Council are still without specific growth figures to plan for, as they were prior to this consultation, a visioning exercise need not be precise to 2050, and also gives BBC time to consider the very recent changes and expectations of sustainable transportation and active travel in the future.

5.0 Conclusions

NPPF Compliance

- 5.1 In summary, our review of the Local Plan consultation finds that there are a number of areas of the 2040 Local Plan and its evidence base that need further consideration, in some instances due to the changes to the NPPF which were published after the consultation had launched. The three key issues are summarised below:
- 1 **Duty to cooperate** - It is not clear that BBC is currently cooperating effectively with HDC in assessing the cross-boundary impacts of the proposed new settlements at Little Barford and Wyboston, which is not in compliance with the NPPF and the duty to cooperate at paragraph 24. The Council needs to show that it is engaging with HDC to determine that the new settlements are deliverable and that they are based on effective joint working across the local authority boundaries. This evidence is also needed to provide communities and other stakeholders with a transparent picture of how they have collaborated.
 - 2 **Highways modelling and unlocking the north of Bedford** - development of any strategic site north of Bedford appears to have effectively been ruled out on highway capacity grounds. Vectos considers the approach BBC has taken to its 2040 Local Plan site selection using the Predict & Provide approach to traffic capacity that ignores mobility as a whole in line with leading transport guidance is incorrect. It is not policy compliant in the context of the Climate Emergency declared by BBC, the Department for Transport paper – Decarbonising Transport published in July 2021 nor the NPPF, paragraph 7, 11a and 73). This ‘business as usual’ approach is unlikely to be compatible with a 30-year vision (outlined in 3. below) which properly embraces all the changes to sustainable transport that are a realistic prospect over that extended timeframe.
 - 3 **Visioning and future housing needs** – the introduction of paragraph 22 of the NPPF 2021 provides the Council with the chance to look ahead and plan for the longer term. Although the Council is still without specific housing growth figures to plan for over that period, there is already evidence to suggest needs in excess of the Standard Method to c.45% and the Oxfordshire Plan is already seeking to deliver more than the Standard Method in it’s part of the Arc. A visioning exercise needs to be undertaken to 2050 which as well as increasing housing needs, also considers the very recent changes and expectations of sustainable transportation and active travel in the future across the Arc. The assessment of TwinWoods should be revisited in light of its potential to form part of this vision.

TwinWoods

- 5.2 In transport modelling terms, TwinWoods has not been considered as a new self-sustaining town, but instead as only additional housing whose residents are attracted to Bedford and beyond. This is an outdated view of development, not reflective of what is proposed at TwinWoods which has embraced the provision of everything communities need in 20-minute neighbourhoods, reducing the need for individual travel. For this reason, the BBC modelling results are not an appropriate basis on which to make determinative planning decisions which would fix directions of growth and represent an effective moratorium on any growth north of Bedford.
- 5.3 In the context of the 30-year visioning exercise required, combined with the emergence of the OxCam Spatial Framework, which itself is looking c.30 years ahead, Bedford Borough cannot afford to disregard any development to the north of Bedford for future decades on the basis of transport evidence which utilises out of date methods which do not adhere to national planning policy or the decarbonisation agenda, including BBC’s own declaration of a Climate Emergency.

- 5.4 TwinWoods represents a strong opportunity to create a new sustainable settlement capable of providing a significant number of homes to meet Bedford's long-term housing needs beyond the plan period. It is deliverable, with all of the land in control of the two promoters, and it would involve the re-development of a partial brownfield site. TwinWoods also has the potential to link growth with the East-West rail route as part of a self-contained sustainable settlement, providing its own jobs, services, shops and local connections to Bedford. The previous consultation responses and supporting evidence documents that we have provided, including a detailed Feasibility Report, demonstrates that TwinWoods is a viable scheme that would support the aspirations of the NPPF.

Appendix 1 Local Plan Modelling Review

TwinWoods

Local Plan Modelling Review

VM210416.TN01

Introduction

1. Vectos are providing support and assistance in the promotion of the TwinWoods garden community proposals on behalf of [REDACTED], with specific regard to the mobility and transport strategy associated with the proposals.
2. The site is one of a series of development proposals which has been identified for consideration within the Bedford Borough Local Plan.
3. AECOM, as technical advisors acting on behalf of Bedford Borough Council (BBC), have produced a series of Technical Papers setting out the transport modelling evidence in support of the Bedford Borough Local Plan.
4. Vectos has undertaken a high level review of this evidence base and this note is intended to set out the initial findings of that review.

Documents Reviewed

5. Several documents have been considered within this initial review of the TwinWoods assessments including:
 - BBTM Highway LMVR v1.0 – detailing the development of the Highway element of the Bedford Borough Transport Model.
 - BBTM Final Local Plan Assessment Report v1.1 – summarising the findings from the initial assessments pertaining to options for development promotion within the local plan.
 - BBTM New Settlements and the A6 – assessment specifically considering the effect of potential new settlements to the north of Bedford along the A6 corridor, namely the proposed developments at TwinWoods (to the south-east of Milton Ernest) and Colworth (to the north-west of Sharnbrook).
6. Additionally two supplementary studies have been published which consider the effects of alternative development strategies on the transport network. These have also been reviewed towards the end of this Technical Note to identify any areas where issues or concerns are raised which pertain to the TwinWoods proposals, and will also affect the conclusions drawn around these other development sites. These reports include:
 - BBTM Assessment of New Settlement West of Wyboston – considering the effects of the Dennybrook development to the north-west of the A1 / A421 Black Cat junction on the operation of the highway network modelled through the BBTM.
 - BBTM New Settlements and the Black Cat Junction – incremental assessment of developments to the south of Little Barford and then with the Dennybrook development on the highway network within the BBTM.

Principal Approach

7. The principal approach adopted by AECOM to provide traffic modelling evidence to support the Local Plan accords with standard strategic modelling practices.
8. The modelling is reliant upon a strategic model meaning that, temporally, it is restricted to only the busiest hours of the day, which are assumed within the Highway Assignment model to be the AM and PM peak hours of 08:00 to 09:00 and 17:00 to 18:00 respectively.
9. The limitation of assessment to a single AM and PM peak hour is likely to be overly simplistic for a number of reasons. Firstly, the traffic flow analysis within the LMVR (Figure 4.6) reveals that there are significant volumes of traffic within the preceding AM and PM hours. The pre-peak traffic volumes are comparable to those observed within the peak hours. This spread of traffic is likely to occur in response to driver inconvenience within the peaks and the associated driver response. Driver responses to congestion mean people have several choices to make, including changing mode, retiming their trips in response to congestion in the peaks hours or not travelling at all. Retiming as an effect is apparent in the observed traffic flows, people are starting their journeys earlier and traffic flows plateauing across the two hours as a result. By restricting the analysis to the peak hours and continuing to assign growth and the associated traffic volumes on a linear basis this effectively ceases the effect of retiming as a response to congestion at 2018 levels and assumes that no further adjustments will occur in the future and trips will then load back into the peak hours per current levels.
10. The detail is also limited as the strategic nature of the approach to modelling means that coarse network definition is applied even in the areas of detailed simulation. Outside of the area of simulation the model network is simply used to aid routing and assignment flows in to and through the model area.
11. There will be limitations to be aware of with regards the model construct, it is not the case that equal confidence can be afforded to results extracted across the model area as the modellers should make clear which areas have been calibrated to greater detail and, where impacts are identified, how much detail is contained within the base model within that area.
12. Regardless of the calibration detail, strategic modelling is also very coarse in how it reflects the network operation and interactions in general. It is only calibrated to link flows and there is often a distribution bias towards trips occurring within the area of detailed modelling. As such, delays at junctions and link/flow capacity levels reported within the modelling should be sense checked and, where critical issues are considered to have been identified within the modelling, supported through a more detailed review of both the strategic model and the capacity constraint identified (e.g. through isolated junction modelling). These checks are particularly important if the issues identified are critical to the decision-making process. At this stage it is not clear if additional analysis, outside of the strategic modelling, has been completed to support the decision-making process.
13. Where junction performance is to be quoted as a specific factor in the decision-making process (as is the case in the more detailed A6 report) it is essential that the validity of the strategic model be checked in this regard and that it is demonstrated to achieve the necessary calibration and validation levels required to support such decisions. A failure to reach the requisite calibration levels in no way invalidates the approach as a whole, it simply identifies areas where further assessment is required prior to any recommendations being drawn from the modelling to minimise uncertainty and ensure that the assessment approach is fit for purpose.

Development Scenarios & Model Extent

14. Four development scenarios have been considered within the modelling namely;
- **Grey:** all sites identified as part of the Local Plan 2040 call for sites consultation with the size of the proposed developments scaled uniformly to ensure that the overall growth in the borough is in the likely range of the new Local Plan housing and employment targets.
 - **Pink, Yellow & Brown:** growth along the A421 and proposed East-West Rail corridors (including the 'Central Section' between Bedford and Cambridge) in Bedford Borough within the urban area and in areas which could form extensions to the Bedford urban area.
 - **Red & Orange:** this scenario provides growth through the creation of one or more new settlements within the borough.
 - **Brown:** growth in locations which are primarily located within Bedford or in parishes which adjoin the current urban area boundary near existing urban areas, including urban extensions.
15. The spatial distribution of these options means that some of the development proposals are assigned in areas of the model which are both on the periphery of the model extent and are calibrated to a lower level with fewer data observations being used to check against.
16. Count data in around Rushden (LMVR Figure 5.1) is sparse, only one defined screen line has been checked (LMVR Figure 5.2) and journey time validation checks are limited to the southeast of Rushden. No validation analysis has been completed for the A509 (LMVR Figure 5.9). This will have a direct consequence on the 'Red & Orange' and 'Brown' scenarios. Development effects identified to the northwest may be understated on the grounds that there has been less attention paid to this area. There are less likely to be detailed constraints replicated within the model network in this area because of the approach to network coding and subsequent calibration and validation checks.
17. Similarly, no detailed count data has been collected within the urban area of St Neots beyond a single survey, despite the network being contained within the detailed simulation area (LMVR Figure 5.1), screen line checks are limited to the West of the urban area (LMVR Figure 5.2) and the journey time validation only considered the A1 and routes to/from Bedford along Wentworth Drive and the A603 (LMVR Figure 5.9). This has implications for all scenarios containing development assumptions to the Northeast of Bedford, especially those within the area of St Neots. This means that capacity constraints within the urban area will not be identified to the same extent around St Neots as those identified within Bedford as fewer surveys and journey time validation checks means that the network configuration in this area will be coarse and one cannot have confidence that any capacity constraints are reflected to the same level of detail as is the case for the urban network within Bedford.

Spatial Implications on Metrics

18. Vectos recognise that it is important to try and simplify the means of assessment as far as it is practicable to do so. Particularly considering the need to test multiple options. However, in focussing on aggregate values as opposed to average values, and in splitting the analysis between 'within Bedford Borough' and outside of the Borough the assessment will be bias towards identifying a greater level of impact to be attributed to developments within the centre of the model area compared to those on the edges.
19. Vehicle Miles within Bedford Borough will be affected by the location of the development and quantum. The larger the development option the more vehicle miles will be generated. Similarly, the greater the focus of development within Bedford the more miles will be contained within Bedford. It is

not clear why more vehicle miles within an option would simply result in a poorer score within the RAG analysis as there are other elements that contribute to the generation of vehicle miles which would be considered a positive outcome for the Borough (such as the generation of more jobs).

20. Metric (a), total vehicle miles, will therefore be affected by the location of the development within the model, those in the centre of the model will create more vehicle miles by virtue of more trips travelling further within the borough, than those on the edge where a significant number of routes available to these developments will funnel vehicles straight out of the Borough. It will also be affected by the quantum of development being assessed, the higher dwelling and employment options will create more vehicle miles and so simply score worse, in comparison to the smaller development options, by virtue of containing a higher housing and employment number.
21. There is also concern around the potential bias of mitigation within the testing as in some cases the introduction of mitigation results in more vehicle miles being travelled which indicates that either the mitigation is unsuccessful and reassignment is occurring, or it is drawing traffic back on to more appropriate routes and so the initial 'lower' vehicle miles contained within the scenario prior to mitigation being added are actually considered a negative impact despite being lower.
22. At a variation of 1.5mph it seems that there are unlikely to be any significant differences in average speeds (metric b) experienced by road users in any option. Such a narrow magnitude of change is likely to lie within acceptable tolerances regardless of which option is adopted.
23. The use and analysis of impacts on routes outside of Bedford Borough (metric e) is also questionable with regards the reliability that can be afforded to this metric given the limited extent of calibration and validation checks outside of Bedford Borough, it is likely that impacts could easily be understated outside of the study area because of this.

Initial Local Plan Reporting

24. It is unclear why the change in vehicle miles in the 'with mitigation' options for those scenarios containing the Brown development mix is given a worse score for both vehicle miles and routing on to less appropriate roads. It seems counterintuitive that the mitigation would improve average speeds but result in more traffic being routed on to inappropriate roads and travelling further unless that was the intention of the mitigation strategy.
25. Also considering the 'Brown' options in more detail, it is also unclear why the vehicle miles travelled would be higher within the Brown option compared to the Pink Yellow and Brown option and this difference increase when mitigation is added to both.
26. Whilst the initial strategic modelling provides a broad indication of the likely outcome of each option tested therein, there are no outputs which provide an indication of why an option may or may not be discounted.
27. At the strategic level it is hard to see any reason why changes in the operation of the highway network should determine any decision around the local plan, particularly considering the level of variation observed within the reported and cognisant of the limitations which stakeholders should be cognisant of when comparing the options, some of which are discussed briefly within this note.

Supplementary A6 Analysis

28. Further analysis has been undertaken specifically concerning the TwinWoods and Colworth developments using the BBTM. The modelling report does not state the objectives of this phase of testing although it is assumed that, in part, the testing is required to supplement the analysis presented within the main round of local plan testing.
29. This section of the note provides further comment on the analysis and conclusions which have been presented within the A6 reporting.
30. The scenarios assume a series of mitigation measures, the majority of which are focussed on highway capacity and it is noted that Scenario A contains marginally less highway capacity than Scenario B, the assumption therefore would be that it is considered likely that either development will be able to contribute to the network enhancements to the same extent regardless of the impact that this may have on viability and irrespective of land constraints or other, similar, parameters.
31. The analysis of network performance again refers to vehicle miles, however the benchmark appears to be the 2030 Reference Case meaning that an increase in vehicle miles triggered by the additional housing present by 2040 compared to 2030 irrespective of the development assumptions which is masked by this approach.
33. In this scenario, the inclusion of mitigation also increases the vehicle miles travelled and the average speeds indicating that vehicles are likely to always be travelling those miles, the mitigation simply helps them complete their journeys more quickly. This effect is not restricted to development trips either, there will be a wider benefit to road users not necessarily recognised within this analysis.
34. The use of benchmarking against the 2018 Base and 2030 Reference Case scenario continues when the junction delays are being assessed. The junction delays in each scenario are identified within Table 3.9 to 3.12 of the report but this omits the conditions observed within the 2040 and 2050 Reference Cases where additional housing not specifically related to the development will be contributing to the impacts. Given the inherent uncertainty around traffic and network conditions in the future, it is also recommended that limited weight be given to the 2050 results given how many different factors and uncertainties are contained within a model which is forecast to such a long way into the future.
35. Focussing on the 2040 PM analysis of changes in the Volume-Capacity ratios, this indicates that in several locations the identified capacity is exceeded within the Reference Case, limited additional impact is observed because of including TwinWoods. All instances of capacity exceedance beyond 100% are observed within the 2030 Reference Case and so neither development option causes a junction to go further over capacity.
36. A worsening of capacity conditions is observed at four locations within the TwinWoods development scenario when compared to the 2030 Reference Case namely:
- Clapham Road / Manton Lane, Clapham Road (S)
 - A6 / Western Bypass, Western Bypass
 - A6 / Thurleigh Road (Milton Ernest)
 - Thurleigh Road / Mill Hill
37. Aside from the A6 / Thurleigh Road (Milton Ernest) junction, all other junctions worsen when the mitigation is included. The analysis of the whole junction precludes an ability to see the affected arms

but this could be a consequence of measures enabling higher traffic flows on the main routes which in turn impacts the side arms.

38. Most junctions are below 85% capacity which would be considered an acceptable level of performance considering the strategic nature of the assessment. There are also several logic checks which should be completed before any of the issues identified in the strategic model run should be given status within the Local Plan decision-making process including:
- Checks of the original junction calibration should be completed and any junction which is not contained within an area of the model subject to validation checks should be identified as such and the result treated with the appropriate level of caution.
 - Any junctions not calibrated to link flow counts should also be identified within the assessment and the results which have been presented should be validated via an assessment of either the individual junction or junctions via an alternative modelling approach which is subject to a more refined level of calibration including additional data observations to ensure that the gaps observed in the calibration can be compensated for. Consideration should be given within this, supplementary assessment, the plausibility of forecasts being applied and the method by which development specific impacts are identified outwith the impacts of general growth.
39. These steps are necessary to increase confidence in the approach to the modelling assessment and decisions derived therefrom and, critically, completing the additional assessments will ensure that the capacity constraints that have been flagged are accurate and should reasonably be included within the decision-making process.

Supplementary Analysis of Alternative Sites

40. Other development proposals have been assessed in a manner which is consistent with the approach to assessing the TwinWoods development proposals and the A6, specifically Little Barford and Dennybrook.
41. The Dennybrook assessment has been completed first and is summarised within the 'BBTM Assessment of New Settlement West of Wyboston' report. Little Barford is assessed in isolation and then the two sites combined within the 'BBTM New Settlements and the Black Cat Junction' Report.
42. These reports have been reviewed and a number of issues have been identified which are described further within this section of the Note.

Model Suitability

43. Unlike the TwinWoods testing, the development proposals tested within these options are to the northeast of the model extent and so the issues previously highlighted around lower calibration and validation levels are particularly pertinent.
44. A lack of validation of Barford Road, Colesdon Road and Staploe Road means that it is not possible to determine, with confidence, that the reassignment effects (whereby traffic assigns away from these roads in response to new congestion effects) will be reliably predicted. Without validation checks being undertaken on these corridors one cannot have confidence that the capacity and therefore relative attractiveness of each corridor is accurately reflected within the modelling.

45. The Dennybrook traffic distribution pattern in particular makes use of a large number of routes between the site, Bedford and St Neotts and so this should be highlighted as a potential limitation in the modelling as these would be considered critical to the decision making process.
46. Routing decisions for Little Barford are less prevalent but there is significant reliance upon the Barford Road as a distributor link and both developments are drawn to the East and to some extent in to St Neotts which are all areas of the model that have not been calibrated or validated and, as such, it is inevitable that these developments will result in fewer issues being identified as a result of the focus of the model.
47. It is not clear what additional analysis or steps were taken to identify issues which may occur outside of the extent of detailed modelling or in areas, such as St Neotts, where detailed calibration of the model has not been undertaken.

Mitigation Assumptions

48. A review of the mitigation assumptions reveals that the status of infrastructure identified within Table 2.2 of both reports is not properly identified. It is not clear which schemes are secured fully and which are subject to future funding submissions and alternative delivery mechanisms. There is a risk that the developments which are being considered are dependant upon schemes which are themselves, uncertain. Therefore it would be prudent to confirm the status of these schemes and also the level of certainty that can be afforded to their delivery at this stage. In some instances developments will not be reliant upon the schemes and so the risk is minimal but in other areas (such as the Black Cat) the developments may be reliant upon these schemes being delivered and so any risks should be identified and should be considered material to the site selection process.
49. Similarly the core Local Plan infrastructure remains the same irrespective of the development option being tested. No regard appears to have been given to the viability of the mitigation proposals in conjunction with the developments being appraised. The measures identified within Table 2.4 of both reports are attributed to the Local Plan but only a limited extent of local plan development is being tested in these options so it is questionable as to whether this assumption is appropriate.
50. Table 2.6 highlights additional measures that AECOM consider pertinent in facilitating the Dennybrook development. It is unclear therefore how mitigation identified within Table 2.4 would be funded when the development scenario appears only to consist of 10 years' worth of generic housing and employment growth informed via Tempo and the Dennybrook development proposals.
51. This will inevitably result in the scenarios being biased towards lower development quantum options inducing a lower overall impact because mitigation is consistent between all scenarios but it fails to recognise that a lower level of development will inevitably mean less funding for mitigation nor does it recognise that the measures included within Table 2.4 may not be appropriate when the option being assessed is one which does not include the likely full extent of Local Plan development.
52. The modelling therefore does not make clear the relationship between the level of development and infrastructure being assumed is unclear and therefore it is not possible to discern the interdependency of schemes which may not yet be funded and the developments which may depend on those schemes to mitigate the effects of the proposals.
53. The issues related to mitigation are likely consistent throughout each individual development test and demonstrate that there is not enough evidence to discern the level of dependency that each development option may have on the core mitigation assumptions. This is a key aspect when

considering further mitigation is then included on top which it is assumed can only be funded by the development proposals.

Results Analysis

54. The analysis of the results presented within the two additional reports further demonstrate some of the issues highlighted earlier.
55. For example, Dennybrook contains more vehicle miles within Bedford than Little Barford but this is partly influenced by the fact that a lot of Little Barford Trips exit Bedford immediately east of the Development as, across the full simulation area, the difference between the two developments, in terms of vehicle miles travelled, when mitigation is included the difference is less than 100 miles across the entire simulation area and 600 in the PM which is not significant considering the 860,000 to 960,000 miles simulated in total.
56. The junction delays and capacity analysis show that a significant number of locations where impacts have been identified are at junctions have not been calibrated within the base model and so one can only attribute limited weight to the validity of these outputs. This is a fundamental issue with the individual scenario modelling, junction capacity is being used to aid the decision making but not all junctions are equally calibrated and no attempt is made in the reporting to highlight this.
57. Furthermore, the individual scenario tests include a suite of Local Plan mitigation measures without any definitive means of delivery. These are consistent throughout each test and also build upon the assumption that mitigation measures are included within the Reference Case that are not necessarily certain or fully funded. There is no way of determining how dependant, or otherwise, one of the Local Plan sites is on these schemes if they are assumed uniformly throughout the assessment.

General Comments on Approach

58. As has been highlighted previously, the assessment approach adopted by AECOM is a common approach to transport modelling and likely aligns fully with AECOMS interpretation of the requirements set out within WebTAG.
59. There are a series of limitations associated with the approach which mean that it should, at this stage, be given limited weight, further analysis should be completed before any of the findings set out to date can be considered material to the decision-making process for the Local Plan, especially if they are considered reasons to remove sites from consideration.
60. There are several assumptions adopted which will significantly affect the conclusions that have been identified from the modelling. They will also have a significant impact on the infrastructure proposals and, specifically the ability to determine how critical a measure is and how it is relatable to the development proposals prior to inclusion within the IDP.
 - Strategic modelling offers only a coarse representation of network operation. **It is not appropriate to rely on strategic modelling alone for detailed operational matters** such as junction capacity.
 - Strategic modelling restricts the assessments to peak hours and interpeak (average) only. This **does not recognise driver responses such as mode shift, retiming of trips and not travelling altogether**. Whilst some account of this can be included within the modelling through the PT and VDM elements, the approach is entirely based on time and distance costs and takes no account of tertiary benefits such as improvements to journey quality and ambience or the

health benefits of active mode uptake which can significantly offset highway assignment impacts derived on a time cost basis. As traffic movements seep into the hours outside of the traditional peaks a more sensitive and detailed assessment should be considered. The level of detail is such that it would need to be confined to the development and urban areas, it would be unrealistic to expect a large-scale strategic model to include this but understanding the pattern of traffic movement beyond single peak hours is important given the changes in traffic patterns which have been observed both recently and long term.

- The strategic model covers a significant area, and it is not equally calibrated to the same extent throughout, nor is the validation applied consistently. Therefore, having reviewed the BBTM, it is likely that the model will flag more 'issues' in and around Bedford than St Neots or Rushden because the level of data used to derive the model is significantly greater in Bedford than any other area included within the modelling. **Sites which are further away from Bedford are not being tested on an equal basis and this should be recognised within the modelling.**
- The forecasting approach adopted within the modelling is **effectively reinforcing a 'predict and provide' approach to transport planning** and by benchmarking a 2040 'with development' scenario to a 2030 Reference Case the development impacts and impacts arising as a result of the inclusion of growth derived from TEMPRO is being conflated. Furthermore;
 - In accounting for TEMPRO growth in addition to the Local Plan allocations no regard is being given to the plausibility of those forecasts or the risk of double counting. It is also giving weight to extremely uncertain growth forecasts with the responsibility for mitigating the effects of the possible impacts resting with the new developments.
 - It is not directly discerning the impacts of the proposed development strategies, it is discerning the impacts of all possible future growth, including the development proposals, on the highway network, and subsequently determining that capacity must be improved as a result. This is unsustainable and is also a self-fulfilling insofar as the continued addition of traffic growth in this way will only ever result in the conclusion that more capacity is required.
 - It is difficult to see how continuous application of TEMPRO factors beyond 2030 and then defining a highway mitigation strategy to overcome these issues is not 're-enforcing existing travel patterns' which is something the guidance¹ specifically states should be avoided.
- The modelling of mitigation remains predominantly **focussed on highway measures**, there is only a limited account of the potential for car trips to be reduced via sustainable modes and that is applied equally across the modelling, therefore **no regard is given within the assessment to the ability for focussed developments, such as new settlements, to deliver a step change in infrastructure provision for sustainable and active modes** relative to alternative approaches such as dispersed development across the borough. Similarly, the fact that larger scale developments have the ability to deliver even more significant measures is overlooked in the uniform treatment of development assumptions within the model.
- The modelling **does not consider the interdependency of mitigation and development strategies**. There are a large number of highway schemes adopted within the Reference Case that are not necessarily fully committed, without understanding the status of these schemes it is not possible to determine if a development will need to contribute to the schemes or if the Local Plan would be at risk if, for any reason, one of the schemes was no longer progressed. Similarly, in applying a consistent set of local plan mitigation measures in each individual site test which are in addition to development specific mitigation, no regard has been given to the viability of the development proposals in relation to the level of mitigation being considered in each option.

¹ <https://www.gov.uk/guidance/transport-evidence-bases-in-plan-making-and-decision-taking>

The assumption that all development strategies will deliver broadly the same mitigation strategies is an oversimplification that may lead to the wrong conclusions being drawn about which option performs poorest.

61. The assessment, therefore, appears useful as an initial sifting exercise but there is significant detail missing to enable it to be sufficient to allow judgements to be made on the appropriateness or otherwise of the allocation strategy being adopted. The limitations of the exercise are not made clear in the reporting. Similarly, the impact that certain assumptions will have on the conclusions has not been set out. Both are critical to any decisions based on this evidence.
62. There are limitations with the extent of the model and the fact that the focus of calibration is in and around Bedford but the dispersal of development is across the Borough. This also impacts on the use of measures which are restricted to occurring 'within the Borough' since the more central a development is the worse it will score.
63. Finally, the Local Plan reporting contains recommendations for 'Next Steps' to be completed but in every instance the focus of Next Steps within the reporting seems to refer to the need for further mitigation measures but does not identify, to the decision makers, the opportunities to revisit the assumptions applied to date to determine the sensitivity of the outcomes identified.

Conclusions

64. The transport modelling evidence presented thus far is incomplete and, in its current form, is not a sufficient level of evidence upon which to base planning based decisions. It fails to identify a number of critical elements which will undoubtedly influence the decision making process.
65. It fails to acknowledge the limitations of the modelling software in terms of how it is calibrated, how simplistic mode shift and sustainable transport is considered, that the time periods are restricted to single hours and that it is based on an assumption that current travel movements will be reinforced by traffic growth.
66. There is a significant lack of consideration being given to sustainable and active modes within the development of a mitigation strategy.
67. There is a failure to distinguish between development specific impacts and those which occur as a result of the application of an additional 10 years of traffic growth.
68. The inclusion of 10 years 'generic' growth is, in itself, questionable as it makes it difficult to discern development specific impacts and means that the mitigation strategy derived through the modelling is one which can only reinforce existing travel patterns and exacerbate car dependence.
69. The exacerbation results from continuing to seek to provide capacity for predicted traffic movements all of which are based on a set of assumptions around growth and trip generation which have not, themselves, been suitably tested. By not assessing the sensitivities of conclusions to certain modelling assumptions it cannot be determined how critical to the plan any of the measures identified may be.
70. There is a failure to consider the relationship between development strategy and mitigation. No regard has been given, within the isolated scenario tests, to understanding which developments are likely to rely on or contribute towards different mitigation measures. Consistent application of certain measures across all scenarios means it is not possible to determine if a development is dependent upon a measure (as a series of measures are included from the onset rather than those which are

essential for a development to be delivered). Similarly, where Reference Case mitigation is not yet fully funded or permitted it should be identified as such to ensure that the reliance on mitigation of differing levels of certainty is fully identified within the assessment work.

71. The strategic model is not, in isolation, a suitable tool upon which judgements about junction capacity can be made but this is not made clear within the reporting. More refined modelling should be undertaken in areas where capacity has been identified as a constraining factor. This refined testing should consider an approach which better reflects capacity (ideally Microsimulation but, as a minimum Isolated junction modelling). It should also test how sensitive these conclusions are to other factors such as the omission of the generic TEMPRO growth and/or peak spreading and retiming of trips to allow judgements on whether mitigation is essential or desirable (i.e. if a modest change in demand negates the need for a scheme then it can, at best, only be determined as desirable).
72. Further testing should be cognisant of what it is reasonable and realistic to expect each development to deliver by way of mitigation, uniform inclusion of certain measures which are not yet permitted and/or lack funding for full delivery obfuscates the identification of development impacts, specifically when considering different development specific allocation strategies. More critically, this fails to recognise that each development brings with it unique benefits by way of mitigation strategies, especially if a foundation of mitigation is assumed in each option regardless of whether it can be delivered. Larger developments have the ability to deliver more mitigation without adversely impacts viability but this has not been considered in the modelling to date.

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