

Document Control Sheet

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1. Introduction and Chronology of Basildon Local Plan Transport and Highway Evidence Base reports post-publication

- 1.1 This note provides a summary of the additional work undertaken to support the Basildon Local Plan at Examination through an expansion of the transport and highway evidence base post-publication.
- 1.2 Since the production of the transport evidence base which was submitted to the Planning Inspectorate in March 2019 there have been some significant developments which have required additional evidence to be prepared. This document provides a short explanatory update note and chronology to document these additional pieces of evidence, building upon the Essex Highways - Transport Planning Update for Inspector - January 2020 (referenced [EX008](#)). Additional studies undertaken between October 2019 and April 2021 will strengthen the evidence base in several key areas and will form part of additional pieces of evidence to support the Examination in Public. To assist, the following diagram summarises the evidence base reports submitted by Essex Highways for publication as part of the initial tranche of material in 2019, as well as supporting documentation submitted (and currently commissioned) in the time since.

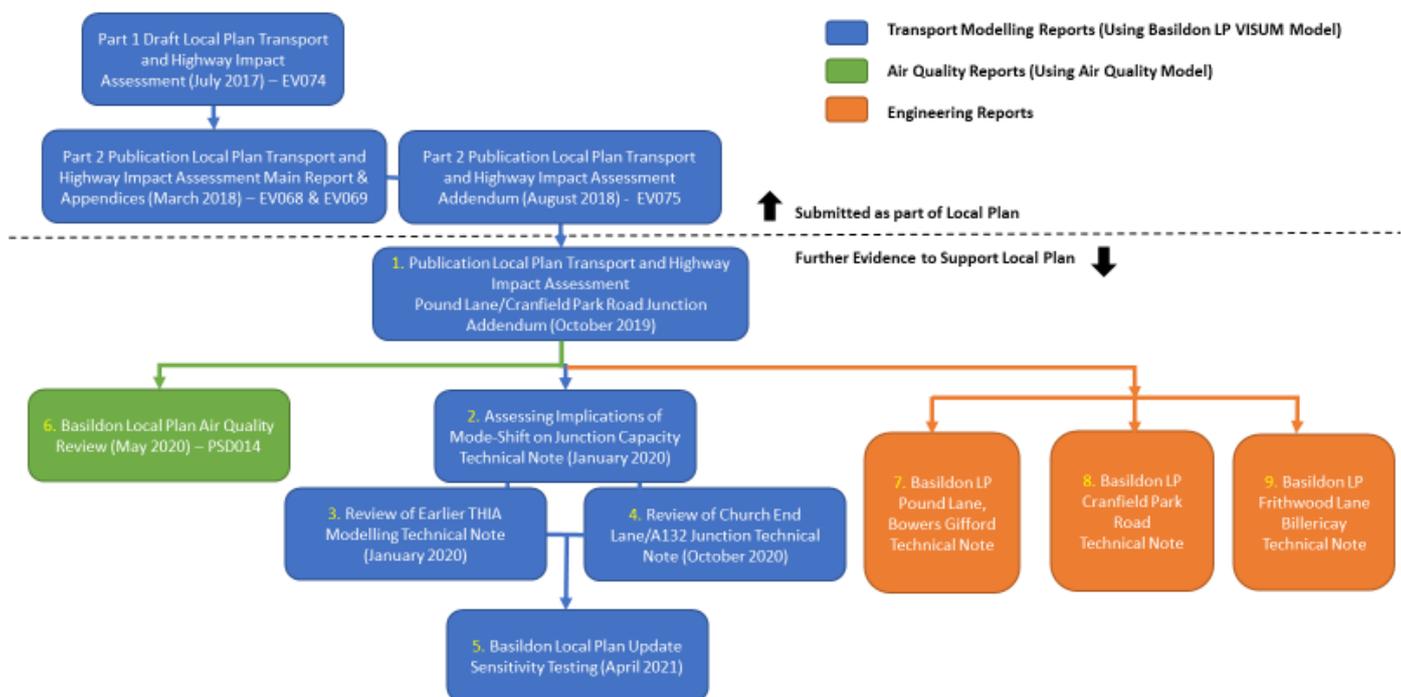


Figure 1: Transport, air quality and engineering Evidence Base reports produced for the Basildon Local Plan pre and post-submission

- 1.3 The following chapters in this note provide summaries of the post-submission technical notes shown in Figure 1. The technical notes are numbered 1 to 9 to allow for cross-reference with the diagram above.

2. Transport Planning Evidence

Document 1: Publication Local Plan Transport and Highway Impact Assessment Pound Lane/Cranfield Park Road Junction Addendum (October 2019)

- 2.1 The Transport and Highway Impact Appraisal (THIA) studies as submitted with the LP in 2019 considered the need for a new grade-separated junction on the A127 as part of a package of mitigation measures to accommodate the submitted Local Plan growth. However, it is acknowledged that until a full business case for an A127 grade-separated junction has been undertaken, funding and delivery of the scheme is uncertain. Therefore, a package of deliverable smaller-scale junction mitigation was assessed in October 2019 as an alternative to the A127 junction. This additional work demonstrated that development growth* in Basildon could reasonably be accommodated within the Plan period with the alternative mitigation provided.

*Document 5 will consider the development growth associated with the proposals in the Basildon Town Centre Regeneration Strategy (September 2020), which is in addition to the scenario considered in Document 1.

- 2.2 A pre-Business Case outline economic appraisal of the A127 grade-separated junction was undertaken in 2019 (outside of the Local Plan modelling framework). Findings have suggested that there may be sufficient merit in progressing the scheme through a full Business Case appraisal. Timeframes for this process could align with a review of the Local Plan, at which point the scheme's deliverability will be better known.
- 2.3 The October 2019 addendum study highlighted opportunities to undertake further modelling work to further strengthen the Local Plan impact and mitigation narrative presented in the THIA studies to date. This additional modelling work was presented in a series of technical notes issued in January-October 2020 and is referenced in more detail in the sections below (Documents 2-4).

Document 2: Assessing Implications of Mode-Shift on Junction Capacity Technical Note (January 2020)

- 2.4 The THIA modelling utilised a fixed-demand approach to forecasting traffic flows. This was understood to meet NPPF guidelines for a strategic transport appraisal of Local Plan impacts and offered a good degree of modelling transparency.
- 2.5 The approach, however, presented a worse-case depiction of forecast traffic demand in peak hours. To further strengthen the evidence base, an assessment of mode-shift amongst Local Plan development trips to existing sustainable alternatives (walking, cycling, passenger transport) was undertaken.
- 2.6 The sensitivity testing suggested that there was scope for a 15% reduction in Local Plan development trips (on average) at junctions as a result of potential mode-shift. This was, however, dependent on there being available capacity on the existing public transport network to accommodate growth in demand from new developments.
- 2.7 Whilst this represented a small reduction in overall forecast traffic flows at junctions, it was concluded that further improvements made to public transport accessibility in Basildon Borough would be expected to encourage a broader scope of mode-shift away from private car use amongst both Local Plan development trips and background traffic flows.

Document 3: Review of Earlier THIA Modelling Technical Note (January 2020)

- 2.8 A review of the 2018 THIA modelling was undertaken to better understand the impact of the proposed A127 grade-separated junction on traffic flows through Wickford, to re-evaluate the impact of Local Plan development on the Nevendon Interchange, and to further validate the assumptions made in the modelling around sustainable mitigation impact.
- 2.9 Findings revealed that the proposed A127 junction led to a moderate reassignment of background traffic away from the A132 route through Wickford and to the A130/A127 strategic routes – thus explaining the reductions shown in the THIA Part 2 (March 2018).
- 2.10 A review of the 2018 THIA confirmed the forecast modelling of flows at the Nevendon Interchange to be reasonable, and that the approaches to the junction itself would not be impacted significantly by development trips from nearby Local Plan sites in Wickford and North Benfleet – despite perceived congestion at the junction.
- 2.11 Instead, delays were identified along Nevendon Road and Christopher Martin Road in the vicinity of the Interchange. Surrounding congestion in the local area has been considered within the A127 Air Quality Management Plan Outline Business Case.
- 2.12 The final part of the review considered the threshold used in the 2018 THIA to determine the point at which infrastructure provision was considered in addition to sustainable measures to mitigate the impact of Local Plan development at junctions. The review considered the level of unmet peak hour demand modelled at a junction identified at the capacity threshold, and then evaluated the extent to which this demand might reasonably be accommodated by sustainable measures. Through this evaluation it was determined that the threshold values could be considered reasonable.

Document 4: Review of Church End Lane/A132 Junction Technical Note (October 2020)

- 2.13 The purpose of the technical note was to provide an expanded and contextualised evaluation of future traffic conditions predicted at the junction of Church End Lane with the A132, following findings from the October 2019 addendum study that it would likely remain over-capacity at the end of the Local Plan period, despite provision of proposed mitigation.
- 2.14 The January 2020 mode-shift modelling study suggested that the provision of further bus, rail, walking and cycling infrastructure and/or services would likely result in a modest reduction in development trips through the Church End Lane / A132 junction. However, there would seem to be scope for a further reduction in traffic at the junction through mode-shift amongst existing local (background) trips.
- 2.15 The importance placed on new sustainable transport links would likely be shaped by the extent to which the wider peak periods could accommodate excess demand from the peak hours, and the tolerance levels considered acceptable by the public and local authorities, for extended periods of congestion at the junction. There would also be an expectation that a proportion of excess peak hour demand would re-route away from the A132 to avoid congestion.
- 2.16 Whilst neither re-routing or peak spreading is desirable, the extent to which excess modelled demand would take the form of peak hour queuing at the junction, would be expected to be smaller than the junction capacity modelling suggests.

Document 5: Basildon Local Plan Update Sensitivity Testing

- 2.17 In addition to the above reports, previously identified in the 2020 update note (EX008), Basildon Borough Council has commissioned further transport modelling evidence to explore the proposals in the Basildon Town Centre Regeneration Strategy (September 2020) and in light of the recent major town centre planning applications. This study will look to integrate the latest development and infrastructure assumptions into the strategic Local Plan modelling and assess the impact on previous findings and conclusions stated in the THIA concerning development impact and required mitigation.

3. A127 Air Quality Modelling and Assessment

Document 6: Basildon Local Plan Air Quality Review (May 2020) - PSD014

- 3.1 The Basildon Local Plan Air Quality Review (May 2020) was published as a post-submission document (PSD014) by Basildon Borough Council along with their Climate Change and Air Quality Topic Paper in September 2020.
- 3.2 During 2019, pollution climate modelling was undertaken and determined that there were exceedances on the A127 between east and west Basildon, and roads leading to the business area to the south (East Mayne and Upper Mayne). These areas were shown to have poor air quality that breaks national safe limits ($40\mu\text{g m}^{-3}$ max annual mean). To address this, an outline business case was submitted to Government (Joint Air Quality Unit (DEFRA/DfT)) in April 2019, which included introducing a 50-mph speed limit along the section of the A127 (between Fortune of War and Pound Lane junctions), as well as proposing cycling, electric charging points and travel planning measures to support a shift to more sustainable modes.
- 3.3 As a result of the business case submission, Defra directed Essex County Council and Basildon Borough Council to urgently progress the plans for the 50mph speed limit in June 2019. This has now been approved and is in the process of being implemented. Defra also directed ECC and Basildon BC to undertake a baseline modelling exercise to identify if any charging Clean Air Zone options (excluding the A127 itself) could bring about compliance in the shortest possible time. An Outline Business Case is being prepared for an alternative to a charging CAZ, which will be considered by Defra in early 2021.
- 3.4 Given the identification of these issues and prior to examination of the Basildon Local Plan, a review of submitted Local Plan development in 2019 and forecast traffic growth assumptions used across both transport and air quality modelling studies has been undertaken. Whilst transport modelling uses Local Plan development projections, air quality modelling works with National Trip End Model (NTEM) local growth assumptions. Both approaches are considered appropriate for their relevant studies, but both present different levels of growth in Basildon – raising concerns around compatibility.
- 3.5 The divergence between NTEM growth forecasts used in the original Basildon AQMP modelling and those determined for the Local Plan modelling, raised concerns that emissions in Basildon may have been underestimated. The results of a comparative exercise has shown that the original air quality modelling approach and conclusions around growth were acceptable and that NO₂ compliance thresholds are likely to be achieved in 2023 in the absence of mitigation measures.
- 3.6 Modelling in a 2020 assessment year has nevertheless determined that new annual mean NO₂ exceedances in Basildon may occur as a result of additional Local Plan growth in the submitted Local Plan. The results indicated that the subsequent increase in the traffic would create new reportable exceedances at receptors adjacent to PCM network as well as other receptors which would be

required to be considered for AQMP. These locations may need closer attention in the short to medium term.

4. Engineering Studies

- 4.1 Finally, design and engineering studies are being undertaken that expand on work undertaken to-date in identifying measures necessary to accommodate Local Plan development. Specific tasks involve engineering reviews of preliminary mitigation scheme designs, and safety-led audits of existing routes to determine further infrastructure required to accommodate future housing and employment. The reports will be made available shortly.

Document 7: Basildon LP Pound Lane, Bowers Gifford Technical Note

- 4.2 This technical note outlines the mitigation required to make Pound Lane (including the junctions at either end), more suitable for the additional traffic expected as a result of development growth.
- 4.3 A list of recommendations is provided, covering safety and capacity improvements along with potential upgrades to facilitate sustainable transport.

Document 8: Basildon LP A127 Junction with Cranfield Park Road Technical Note

- 4.4 This technical note outlines the mitigation required to make the junction of Cranfield Park Road and the A127 (Eastbound), more suitable for the additional traffic expected as a result of development growth.
- 4.5 A list of recommendations is provided covering safety and capacity improvements.

Document 9: Basildon LP Frithwood Lane Billericay Technical Note

- 4.6 To support Local Plan development a new road is proposed between the A176 and the A129, via the existing junction of Frithwood Lane and Tye Common Lane. This technical note comprises an outline design exercise for two options for the route through the Frithwood Lane corridor.