Land West of Teynham (21/503906) and Land South and East of Sittingbourne (21/503914): Transport and Highways Review

client: Teynham, Doddington, Lynsted with Kingsdown and Tonge Parish Councils

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Executive Summary

Introduction

i. The report has been prepared on behalf of Teynham, Doddington, Lynsted with Kingsdown and Tonge Parish Councils by Bruce Bamber, Director of Railton TPC Ltd. The author has over 30 years' experience of working within the transport planning industry including acting as an expert witness in numerous public inquiries. He has considerable experience of working within the local area, has visited the site and met with representatives of local communities who have explained their concerns and provided details of existing transport conditions.

ii. The proposed development comprises up to 8,400 new dwellings and other land uses. The applicant calculates the development generating, in the peak hours, between 5,445 and 5,881 vehicle trips on the highway network outside the proposed development. This would equate to around 75,000 daily vehicle trips. This figure excludes induced traffic and the effects of traffic re-routing as a result of new highway infrastructure. The new trips (and induced and re-routed traffic) lead to impacts on the M2, the A2, distributor roads and many local roads in the area.

iii. The report deals with both the Combined Site (8,400 dwellings on Land South and East of Sittingbourne plus on Land West of Teynham) and the Northern Site (1,250 dwellings on Land West of Teynham) in isolation.

iv. The key findings are summarised below. The body of the report provides the analysis and evidence from which the conclusions are drawn.

Sustainable Travel Deterred by the Physical Layout of Development

v. The dispersed nature of the proposed development and its distance from facilities within Sittingbourne undermine opportunities for sustainable travel.

Barriers to Movement on Foot and by Bicycle

vi. The proposed Sittingbourne Southern Relief Road (SSRR) constitutes a significant barrier to movement by sustainable modes both for existing residents and for those living within the proposed development. The severance effect of the SSRR is the inevitable consequence of the necessity to provide a high standard, high speed road to justify the proposed provision of a new motorway junction. The SSRR's adverse severance impacts are ignored in the Environmental Statement (ES).

vii. The A2 and the proposed A2 junction serving development to the north and south constitute further barriers to sustainable movement. This is a particular problem for those to the south of the A2 seeking to access Teynham railway station and those to the north of the A2 seeking to access facilities to the south, including the proposed secondary school.

viii. Most junctions along the SSRR are proposed to be large roundabouts. These are dangerous and threatening to cyclists and are difficult for pedestrians to cross due to the width of roundabout entries and exits and the speed of traffic.

ix. The proposed 'green bridge' across the SSRR is a misnomer since it is merely a widened overbridge that forms part of a larger junction designed primarily to provide high vehicle capacity.

x. It appears that the SSRR will sever a number of public rights of way that currently provide links between Sittingbourne and settlements to the south.

Poor Bus Provision

xi. The form of the proposed development does not lend itself to an efficient and convenient bus access strategy. It is likely that after initial bus subsidies are consumed, few services would remain commercially viable.

xii. The only proposed bus priority appears to offer negligible benefit in terms of reduced journey times compared with travel by private car.

Poor Access to Rail Services

xiii. Access to rail services is poor. Teynham railway station has poor pedestrian access, very limited cycle parking, no drop-off or pick-up facilities for either cars or buses and offers only one stopping service in each direction for most of the day.

Failure to Consider Induced Traffic

xiv. Research, evidence and guidance show that the provision of significant new highway capacity, in this instance, in the form of the SSRR, the Sittingbourne Northern Relief Road (SNRR) and a new motorway junction will lead to additional induced traffic. This effect has been ignored in the transport supporting work.

Failure to Engage with Important Transport Issues

xv. The applicant has responded to numerous concerns raised by the Highway Authority by suggesting that they would be overcome at later stages of the planning process. The refusal to demonstrate, at this stage, an acceptable access strategy is a serious concern since a development of this scale has the potential to lead to severe adverse transport effects that cannot be mitigated.

Failure to Consider Poor Safety Record on Lower Road, Teynham

xvi. No consideration has been given to the very poor safety record on Lower Road, Teynham. Both the proposals have the potential to significantly worsen this problem.

Sensitivity of Lower Road and A2 Under-Estimated

xvii. The applicant's assessment of transport environmental impacts has under-estimated the sensitivity of Lower Road and the A2 through Teynham and further east and has thus under-estimated the predicted significance of the adverse impacts resulting from the proposals.

Failure to Mitigate Increased HGV Movements on the A2

xviii. The assessments predict a significant increase in HGV movements on the A2 through Teynham and further east. For the Northern Site the increase is predicted to be 707 new HGV movements per day (+56%) and for the Combined Site the increase is predicted to be 1,355 new HGV movements per day (+109%). Despite these substantial increases, no mitigation is proposed to reduce the associated adverse transport impacts.

xix. Increased HGV movements will not only lead to increased fear and intimidation but also have adverse impacts in terms of noise, vibration and air quality.

Failure to Acknowledge or Assess Severe Congestion on the A2 through Teynham and Elsewhere

xx. The A2 through Teynham is predicted to carry traffic flows that will lead to very severe congestion. The Northern Site is predicted to generate around 5,000 additional daily vehicle trips on the A2 through Teynham and the Combined Site is predicted to generate around 2,800 additional daily trips. New traffic associated with the Northern Site alone will cause the A2 to exceed its capacity. The assessment work for the Combined Site indicates that the A2 would be operating far in excess of its capacity even before development traffic is added.

Severe Impact on the Ruins Barn Road/Woodstock Road Corridor

xxi. The Combined Site is shown to lead to an extremely severe impact on the Ruins Barn Road/Woodstock Road corridor into Sittingbourne.

Potential for Rat-Running

xxii. In relation to the Combined Site, the predicted severe delays for traffic to and from Sittingbourne via the Ruins Barn Road/Woodstock Road corridor are likely to encourage rat-running through other sensitive areas such as Borden village.

xxiii. Both proposals have the potential to increase rat-running along Lower Road because of increased delays along the A2.

Summary of Impacts of the Northern Site Alone

xxiv. The Northern Site, if developed in isolation, will lead to significant increases in rat-running traffic on Lower Road, worsening an already poor safety record. It will also lead to significant increases in traffic on the A2 through Teynham (including 707 HGV movements per day), causing severe delays. The level of increased traffic on the A2 is almost double that resulting from the Combined Site. Although Teynham has a railway station, access on foot, by bicycle, by bus and by car is, and is likely to remain, poor.

Errors, Omissions and Contradictions

xxv. The transport supporting work contains numerous errors, omissions and contradictions that would need to be corrected or clarified before the applications could be considered. Details of these and further evidence supporting the issues described above are summarised in the report.

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Glossary

AADT	Annual Average Daily Traffic
CIHT	Chartered Institution of Highways and Transportation
CRF	Congestion Reference Flow
DfT	Department for Transport
ES	Environmental Statement
IEA	Institution of Environmental Assessment
KCCHA	Kent County Council Highway Authority
MfS	Manual for Streets
NCN	National Cycle Network
NH	National Highways
NPPF	National Planning Policy Framework
NTEM	National Trip End Model
PIA	Personal Injury Road Traffic Accident
PROW	Public Right of Way
RFC	Ratio of Flow to Capacity
SBC	Swale Borough Council
SMC	Sustainable Movement Corridor
SNRR	Sittingbourne Northern Relief Road
SRN	Strategic Road Network
SSRR	Sittingbourne Southern Relief Road
STS	Sustainable Transport Strategy
TA	Transport Assessment
TAG	Transport Analysis Guidance
TRO	Traffic Regulation Order

1 INTRODUCTION

The Author

1.1 The author of this report is Bruce Bamber, Director of Railton TPC Ltd. who has over 30 years of experience working within the transport planning industry for both private and public sector clients. He has dealt with the transport and access arrangements for development schemes comprising all land use types and at all scales. He has been involved with numerous local and strategic transport studies and modelling exercises. He has given evidence at many informal hearings and public inquiries, participated in Local Plan Inquiries and at a DCO Hearing. He is a Chartered Member of the Institution of Highways and Transportation and has a Masters Degree in Transport from Imperial College, London.

Introduction

1.2 Railton TPC Ltd has been instructed by local parish councils led by Teynham Parish Council, to review transport and highways information submitted in support of proposed major developments West of Teynham (ref. 21/503906/EIOUT: up to 1,250 dwellings and other land uses) and South and East of Sittingbourne (ref. 21/503914/EIOUT: up to 7,150 dwellings and other land uses). The West of Teynham site is referred to subsequently as the **Northern Site** and South and East of Sittingbourne is referred to as the **Southern Site**. The two sites together are described as the **Combined Site**.

1.3 Although the original expectation was that the two developments would be considered and potentially brought forward together, the strategy now is that the Northern Site development could come forward on its own but that the Southern Site development would only come forward in combination with the Northern Site.

1.4 The Northern Site development is proposed to come forward in association with sections of the Sittingbourne Northern Relief Road (SNRR). The Southern Site development is proposed to come forward in association with a new junction on the M2 (J5A) and a connection between the A2 and the new motorway junction, known as the Sittingbourne Southern Relief Road (SSRR).

1.5 Neither development forms part of the adopted Swale Borough Council (SBC) Local Plan[1]. Although a small part of the Northern Site development has been considered as a potential new development site as part of an Area of Opportunity in the Local Plan Review, this has not been taken forward and there is very little support for the development in terms of existing and emerging planning policy[2].

1.6 Each proposal is accompanied by a series of reports comprising Transport Assessments (TAs) for each site. These include the following:

- Executive Summary;
- Strategic Justification & Policy Context;
- Site Context – Issues & Opportunities;
- Development Proposals;
- Sustainable Travel Strategy;
- Highways Infrastructure Proposals;
- Traffic Impact Appraisal;
- Mitigation Proposals.

1.7 An Environmental Statement comprising a series of documents dealing with specific topics has been prepared for each application.

1.8 Kent County Council Highway Authority (KCCHA) responded most recently in March 2023 and has recommended a holding objection for both applications on several grounds including a lack of sufficient information to allow the highways and transportation impact of the proposed development to be assessed. National Highways (NH) is currently recommending a Holding Objection to the proposed developments on similar grounds as KCCHA. NH prepared a report assessing the proposals in January 2023 and the applicant has submitted a response to this in February 2024. NH has yet to respond to the additional information that has been submitted by the applicant.

1.9 Both applications rely on strategic traffic modelling using the SWECO Swale Transport Model. The Base Year Model (2017) was initially developed by SBC, KCC and the applicant for the purposes of assessing Local Plan proposals rather than for assessing the impacts of individual planning applications. It is understood that NH has not formally approved the model Forecasting Demand Scenarios (2037 and 2038) that have been used by the applicant as a basis for assessing the highways impact of the proposals.

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1 Bearing Fruits 2031, SBC, adopted 26 July 2017.

2 See details set out in Representations on behalf of Teynham and Tonge Parish Councils, October 2021

1.10 The following sections are included in this report:

- Section 2 considers the broad sustainability credentials of the proposed developments;
- Section 3 considers the matters that have been raised by KCCHA;
- Section 4 considers the matters that have been raised by NH;
- Section 5 focuses on the proposed development West of Teynham;
- Section 6 focuses on the larger combined development including the Southern Site;
- Section 7 provides a summary and conclusion.

2 TRANSPORT SUSTAINABILITY

2.1 This section considers the matter of transport sustainability at a strategic level. More detailed analyses of aspects of accessibility on foot, by bicycle, by bus and by train are set out in following sections.

2.2 **Figure 1** shows the proposed development and the proposed main road links and connections with the existing strategic network. The figure shows only the proposed residential and built-up areas.

2.3 It is immediately clear that the proposed development is not well related to the existing built-up areas in and around Sittingbourne. Separate sections of the proposed development are also not well related to each other. The pattern of development is ***dispersed***. It is self-evident that dispersed patterns of development do not minimise journey distances and do not facilitate movement by sustainable modes (walking, cycling and bus use). Paragraph 109 of the National Planning Policy Framework (NPPF) states, '[...] *Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes*'. The location of the proposed development and its dispersal across a wide area, poorly related to existing built-up area strongly suggests that it is not compliant with paragraph 109 of the NPPF.

2.4 The following sections examine the issue of transport sustainability in terms of individual modes.

Walking

2.5 **Figure 2** shows distances from the centre of Sittingbourne and Teynham railway station. The maximum distance isochrone shown is 2km. Although 2km is sometimes taken as the maximum distance that people are prepared to walk to destinations, the source of this is the now withdrawn PPG13 that cited the distance as a maximum car journey distance that has the potential to be replaced by walking trips. It is therefore an upper limit and should never be used to suggest that people will *typically* choose walking in favour of driving for journeys of 2km. A much more relevant figure for planning purposes and the one that defines a 'walkable neighbourhood' is 800m, described in Manual for Streets (MfS) as a distance that is comfortably undertaken on foot.

2.6 Notwithstanding the reservations about reliance on a 2km walk distance, **Figure 2** shows that only a tiny proportion of the proposed development lies within 2km of the centre of Sittingbourne. Most employment within Sittingbourne is situated north of the town centre and would therefore be even further from the various parts of the site. The vast majority of the proposed development would, if built, generate negligible walking trips to the vast majority of destinations within Sittingbourne.

2.7 The distance between the centre of the most north-easterly parcel of development and the most south-westerly is almost 6km. There is therefore no argument for the proposed development generating its own 'walkable neighbourhood' since facilities provided in one location will inevitably be inaccessible on foot for the vast majority of other new residents.

2.8 The Chartered Institution of Highways and Transportation's (CIHT's) document Planning for Walking (CIHT, 2015) states that, '*People will walk up to 800m to get to a railway station*' (para. 6.4). **Figure 2** shows the nearest railway station at Teynham. Only a tiny proportion of the proposed development lies within 1km of this station and only a few dwellings would lie within 800m. The most south-westerly parts of the proposed development lie over 7km from Teynham station and over 4km from Sittingbourne station. Travel by rail is discussed further below.

Cycling

2.9 Sittingbourne does not benefit from an existing 'culture' of cycling. The town is highly congested at times during the day, has streets that are constrained in width and by on-street parking and footways are rarely wide enough to accommodate shared and designated cycle facilities. The following table summarises current levels of cycling to work in Sittingbourne, Teynham and Bapchild:

Table 2.1: Existing Levels of Cycling

Location	Existing Cycle Mode Share*
Sittingbourne built up area	2.2%
Teynham (Lower layer super output area E01024623: Swale 016D)	1.3%
Bapchild (Lower layer super output area E01024629: Swale 013D)	0.7%

Source: Nomis Table QS701EW

2.10 The cycle mode share is expressed as a % of those travelling on foot, by bicycle, by bus, train, car driver and car passenger. It does not include those working at home or not in employment.

2.11 It is clear that within the built-up area of Sittingbourne where people have the greatest opportunities to travel to work by bicycle, only 2.2% do so. In Bapchild and Teynham the levels are even lower at 0.7% and 1.3% respectively.

2.12 Even if the proposed development is provided with excellent cycle priority within the site, the scope to increase levels of cycling in the area is extremely limited. The provision of the high capacity SSRR through the centre of the development may maximise accessibility for motor vehicles but represents a fundamental barrier to movement on foot and by bicycle. The severance effect of this highway infrastructure cannot be eliminated by the provision of a limited number of crossing opportunities.

2.13 The busy A2 corridor represents a further barrier to north-south movement between the Northern Site and the Southern Site.

2.14 Further analysis of cycling is set out in the following sections.

Bus Use

2.15 The closest existing bus service is the X3 operated by Stagecoach that runs along the A2 at an hourly frequency daily into the early evening. The CIHT document, 'Buses in Urban Development states, '*Custom and practice for many years suggests a maximum walking distance of 400m from a bus stop*' (p.18 CIHT, January 2018). The document however, goes on to explain that this should be taken as a maximum since the distance was first established when there was less competition from the private car and those with mobility difficulties will find a 400m walk either a challenge or, in some cases, impossible. The document also points out that people are more likely to walk further for high quality, frequent services. Table 4 of the document recommends that 400m is appropriate when the bus service is frequent (5 per hour or more) but that a shorter walking distance to bus stops is required when the frequency is lower.

2.16 **Figure 3** shows the 400m catchment area around existing bus services in the area. It can be seen that the hourly service that currently runs along the A2 is within 400m of around half of the development west of Teynham and a very small proportion of the development area south of the A2. A small area of development close to the south-east of the existing built-up area of Sittingbourne lies within 400m of existing bus routes.

2.17 It is clear that the vast majority of the development lies more than 400m of existing bus routes.

2.18 The proposed mitigation includes new bus services. This matter is discussed further below. At a strategic level it is worth considering whether the proposed development lends itself to bus accessibility.

2.19 A development that facilitates bus use requires the following:

- It should integrate well with existing bus services;
- Integration with existing bus services should include opportunities to improve bus patronage on existing routes;
- All development should lie within a maximum of 400m of a bus route;
- It should be designed to minimise bus journey distances and travel times;
- It should not undermine the commercial viability of existing bus services;
- It should not reduce the level of service provided for existing residents and locations;
- It should provide opportunities to give buses priority over private cars.

2.20 Given the small amount of proposed development that lies within 400m of existing bus routes suggests that any bus strategy will neither integrate well with existing routes nor significantly improve bus patronage on existing routes.

2.21 The need to introduce a number of new services in order to provide opportunities to use the bus is likely to undermine the viability of existing services in those areas where the new services are able to attract patronage from existing routes.

2.22 The dispersed arrangement of new development does not lend itself to efficient bus operations. In order to reach all parts of the development routes will necessarily be relatively long and include loops that will both lengthen journeys and require some people to travel ***away*** from their desired destination before the bus completes a loop and starts travelling towards the destination.

2.23 There are no bus priority measures within Sittingbourne that will give bus travel some advantage over travel by private car. Any bus system serving the development will suffer from this lack. There may be opportunities to introduce bus priority within the proposed development. This matter will be discussed further below.

2.24 It is clear that the location and design of the proposed development does not lend itself to convenient and efficient bus operations. The work undertaken in support of the

proposals does include further details of the proposed bus system. These details are considered further below, particularly in **Section 6**.

Train Use

2.25 It has been shown that the proposed development suffers from very poor access to train services. There is no train station within the development and the nearest station at Teynham is accessible on foot to only a tiny minority of potential new residents.

2.26 Some people may be able and willing to cycle to a train station. There are only 10 cycle parking spaces at Teynham station. These, in total, are sufficient to cater for 0.01% of the people expected to live in the proposed development. To cater for only 1% of people would require 100 cycle parking spaces. There has been no work to establish whether the small station at Teynham has any land available to allow any such expansion of provision of cycle parking.

2.27 The distance to the nearest railway stations, the lack of cycle parking and the difficulties using bus to access rail services will mean that most people will access railway stations by private car or taxi. Teynham railway station has only 20 car parking spaces and there are no dedicated facilities for passenger drop-off and pick-up. Sittingbourne railway station has around 250 car parking spaces and drop-off and pick-up facilities for taxis. All car trips to and from the station would impact on the town centre highway network worsening existing congestion and air quality.

Car Use

2.28 The overview of sustainable accessibility set out above strongly suggests that the proposed development will be largely car dependent. **Figure 1** shows clearly the key design principle that has been used to configure the location and layout of the proposals. This shows a dispersed pattern of development laid out along a high capacity spine road that connects with the M2 at its southern end and with the A2 close to its northern end. Car travel is further facilitated by the completion of the SNRR that assists in relieving some highway links within and to the north of Sittingbourne but, more importantly in relation to the current proposals, provides high quality road access to the north as well as to the south, east and west via the via motorway junction.

2.29 The development's high level of car accessibility will not only encourage more car use but will actively undermine any measures that seek to shift trips from car to sustainable

modes. Not only is the development likely to generate a high proportion of car trips to local destinations in and around Sittingbourne but it is also likely to serve as a dormitory settlement for those who wish to live close to Sittingbourne but work and undertake other activities in more distant centres accessed via the M2 and the A249.

Induced Traffic

2.30 Neither KCCHA or NH have raised the issue of induced traffic. There have been numerous studies of induced traffic[3] and it is well established that the provision of new highway infrastructure can lead to an uplift in traffic levels over and above what is predicted using standard methods. A study of the impact of the Newbury Bypass[4], similar in some ways to the SSRR in that it provided a route that avoids a congested urban centre, found that the bypass resulted in a 77% increase in traffic on the affected corridor, over four times the rate of traffic growth for the surrounding area. Other evidence suggests that for every 10% increase in vehicle capacity will generate 2% of induced traffic[5]. If it is assumed that the new M2 junction represents a doubling of M2 accessibility, then the proposed infrastructure could lead to a 20% uplift in traffic. No allowance has been made for induced traffic, indeed, the effect has not even been discussed as part of the transport supporting work.

2.31 Any unplanned additional uplift in traffic using the SSRR will not only risk premature congestion at the SSRR junctions but will undermine any future attempts to 'retrofit' the SSRR to overcome its inherent barrier effect for sustainable modes (see further discussion about sustainable modes in **Section 6** below).

3 See, for example, Deepening the Understanding of how to Address Induced Travel on the Strategic Road Network, WSP on behalf of DfT, December 2020, Latest Evidence on Induced Travel Demand: An Evidence Review, WSP on behalf of DfT, May 2018

4 See The Impact of Road Projects in England, Sloman, Hopkinson and Taylor, March 2017

5 WSP, May 2018, para. 5.3.1

3 MATTERS RAISED BY KCCHA

3.1 The latest responses from KCCHA related to both the Southern Site and the Northern Site are dated 01 March 2023.

3.2 The applicant has provided a response to the points raised by KCC in C&A's Technical Note dated February 2024. The Technical Note deals only with the points raised in relation to the Southern Site development which effectively refers to the cumulative impact of the two developments since the Southern Site is not intended to come forward in isolation. It appears that the applicant has yet to respond to KCC's concerns relating to the West of Teynham application in isolation.

3.3 The Technical Note states that a 'three tier' approach to planning has been adopted with the first being the current application with ***all matters reserved***. Paragraph 1.1.4 states that, '...*the applicant is not yet seeking determination on the form, number or location of access points to the local highway network*'. As a result of this, the majority of the points raised by KCC have not been addressed as they are deemed, by the applicant, matters of detail since, presumably, all aspects of access and transport could change at later planning stages. Those points where the applicant has declined to provide further information or clarification are shown in bold in the summary list of concerns raised by KCC below. Those that have received no response are highlighted in red:

The Southern Site

- Some transport documents uploaded to the planning portal are corrupted/incomplete;
- Existing bus service information summarised by the applicant is now out of date;
- Traffic flows summarised for the 2017 base traffic model need clarification;
- **The impact of the proposed development in terms of changes in traffic flows and highway safety on a number of additional roads within and around the development site needs to be assessed**;
- Information on the M2 J5 improvement scheme needs to be updated;
- More detail is required on sustainable transport measures, particularly those relying on as yet untested innovations;
- **A costed public transport phasing strategy is required including evidence of discussions with existing bus operators and KCC's Public Transport Team**;
- **More detail is required on how rail services can be accessed by sustainable modes**;

- **Greater emphasis is required on sustainable travel hubs and real-time information**;
- **Additional measures are required to strengthen the proposed Travel Plan**;
- **Employment Travel Plans are also required**;
- **The costs associated with Travel Plans should be identified**;
- **Targets and Objectives need to be added to the Travel Plans**;
- Further information is required to demonstrate compliance with the NPPF with regard to sustainable travel, safe and suitable access for all users and adequate mitigation;
- Additional information to demonstrate that the proposals are consistent with the Swale Draft Transport Strategy with regard to journey time reliability, support for the economic growth strategy, provision for pedestrian routes and crossings and highway safety;
- Relocation of primary and secondary schools away from their current locations adjacent to the M2;
- Further information is required regarding the modelling of the junction on the Southern Relief Road that is intended to give priority to public transport and sustainable modes;
- **Clarification is required on whether there are links between the new Relief Road from School Lane and Panteny Lane (the Masterplan suggests a link but the Saturn modelling does not)**;
- Clarification is required on how the northern part of the Southern Relief Road would operate in the absence of the Northern Site scheme;
- **Further information required on the layout of Junction B (employment land access)**;
- **Further information required on crossing facilities at Junction B**;
- **Further information required on the layout of Junction C (Broadoak Road set of junctions)**;
- **Further information is required to demonstrate how the Broadoak bridge is 'green' since vehicles appear to have priority**;
- **Further information is required about the arrangements at the Broadoak Road bus gate**;
- **Further information is required on the design of the 4-arm signalised junction at the Science Park access**;
- **Further work required to explore the possibility of enhancing the public right of way (PROW) network in the Hempstead Road area**;
- **Clarity required on how the access serving development north of junction D (Hempstead Road) is incorporated into the Saturn model**;
- **Additional information is required regarding the approach to PROW crossings**;

- **Clarification is required on how non-motorised users (NMUs) are catered for north of the Oakwood Village south access (access to Teynham railway station)**;
- **More detailed geometric data at this junction are required**;
- **NMU crossings at the Oakwood Village south access are not suitable (two-lane flares at roundabout). Further information is required**;
- **Clarification is required on the cross-sections of the Southern Relief Road between the Oakwood Village accesses**;
- **Similar clarifications and additional information are required for the Oakwood Village north access**;
- Comments on the A2 junction are those presented in relation to the Northern Site development;
- **The proposed pedestrian and cycle networks do not include access to Teynham railway station (see Framework Pedestrian and Cycle Routes). This needs to be considered**;
- **More detail about pedestrian and cycle routes, crossing facilities and integration with existing PROWs is required**;
- **Further information is required to demonstrate that it is possible to deliver a shared footway/cycleway following Ruins Barn Road**;
- **Further information is required to clarify how Hempstead Road will operate as a bus only access point**;
- The Reference Case Saturn model needs to be updated to include junction improvements that have been implemented since the model was first set up;
- The impact of the proposed development on those existing highway links that will be used by development traffic (Ruins Barn Road, Broadoak Road, Hempstead Road, Church Road, A2) need to be assessed;
- Further information is required to assess the potential impact of the development on the AONB south of the M2;
- The land use assumptions for traffic modelling need to be clarified as they do not match what is proposed;
- Scaled plans of existing junctions that have been modelled need to be supplied and mitigation schemes amended if modelling demonstrates that junctions would be over capacity;
- Further information is required regarding impact on junctions associated with the Northern Site development, including the Lower Road connection;
- Explanation of the modelling output for the Swale Way/Barge Way junction (Junction 21: waste to energy facility) and details of its proposed amended layout are required;
- Explanation of the modelling output for the Swale Way/Bingham Road junction (Junction 24) is required;

- Further work is required to provide reassurance that the proposed signalised Woodstock Road/Cromer Road/Ruins Barn Road/Tunstall Road junction will operate satisfactorily;
- Mitigation is required for the Woodstock Road/Bell Road/Gore Court Road/Park Avenue junction (Junction 58);
- Mitigation measures are required to improve sustainable access to Teynham station and to deal with potential impact on Lomas Road (western connection from Lower Road).

Northern Site

3.4 Some of the points raised in relation to the Southern Site are repeated for the Northern Site development. The following are additional points. The applicant has yet to respond to any of these points:

- Bus priority measures within the development are required;
- Further details are required for the design of the A2 junction (Junction G);
- Cycle crossing facilities are required on the eastern arm of Junction G;
- Facilities for cycling along the alignment of the existing A2 are required;
- Further consideration should be given to the design of the A2 east of Bapchild since this is currently substandard. Bus priority could be added;
- Consideration should be given to providing a dual carriageway link north of Bapchild since flows are similar to those predicted for the dual carriageway at the southern end of the Southern Relief Road;
- Further information is required regarding the arrangements for PROW crossings of the new roads north of Bapchild;
- Segregated rather than shared use cycle routes are required;
- Clarification is required regarding the proposed cross section north of Bapchild as it does not show the correct widths for a road with a central hatched area;
- Segregated cycle routes need to be provided on both sides of the road (north of Bapchild) rather than on just one;
- A two lane approach on the A2 on the western side of the Bapchild bypass junction is required as this is what is currently provided;
- Clarification is required on what appears to be a proposed modification of the recently constructed access (to Stones Farm?);
- Details are required of the link north of Bapchild and its interaction with the proposed Stones Farm attenuation pond;
- Stopping sight distances need to be provided for the A2 junction west;
- Details of the structure carrying the new section of the Sittingbourne Northern Relief Road (SNRR) over the railway and Lomas Road would be required at a later stage;

- Further north an unsegregated cycleway is acceptable but should be increased to 4m wide;
- A modal filter on Lomas Road to allow it to be used primarily for cycling should be required;
- More detail is required for Junction S (Swale Way);
- Information is required regarding Junction W which is shown to have an eastern arm although no development is currently proposed;
- Further details of design are required for Junction X (north of Bapchild);
- Details of minor accesses on the new sections of road need to be provided;
- Details are required for the junction of Hempstead Lane on the northern side of the new road and consideration needs to be given to the potential for increased rat-running along Hempstead Lane and other rural lanes to the north;
- Junction to 'retained land' to be removed;
- Junction to Hempstead Farm to be removed since another access is already available;
- Information is required as to the level of traffic using Junction T (connection with Frognal Lane) that is suggested to divert traffic from junction G (A2 east). The route to the A2 would be via the new roundabout junction associated with the Frognal Lane development;
- The form of the access onto Frognal Lane needs to be clarified;
- The impact of the proposed development on Lower Road needs to be assessed and details provided of proposed improvements with regard to non motorised users;
- The proposal to provide a vehicle connection with Frognal Lane undermines the intention to promote its use as green route (it could be used as an emergency access only). Clarification is required;
- Consideration needs to be given to relocating the primary school since it is currently located north of the internal access road that will deter travel by sustainable modes;
- Details need to be provided as to how children in the development will access secondary schools;
- Details are required to demonstrate that non-motorised users are able to cross the A2 between the two development sites;
- Improved connectivity to the west is required.

Comment on Applicant's Response to KCC

3.5 For an outline application to be acceptable it is necessary to be confident that all reserved matters are able to be resolved without unacceptable impacts. For this reason, the majority of outline planning applications will deal with access as a detailed matter. An aspect of a development such as building materials will almost inevitably allow for an acceptable outcome but access does not always lend itself to a safe and acceptable

solution. In addition, for the transport environmental impact of a development to be properly assessed it is essential that the magnitude of changes in traffic flows be established in specific locations and in relation to sensitive receptors. For this information to be established it is necessary to know, with reasonable confidence, points of access, details of changes in traffic flows in specific locations and the strategy relating to non motorised users.

3.6 KCC has quite correctly undertaken a review of the transport information that has been submitted in support of the application. The majority of transport concerns that have been raised have received the general response from the applicant that they will be dealt with at the next stage of planning, after outline planning permission has been granted.

3.7 For key aspects on access arrangements such as the number and locations of connections with the existing surrounding highway network and the feasibility of introducing measures supporting sustainable travel to meet relevant policy requirements, it is essential that sufficient work is undertaken before any planning permission is granted to avoid the unacceptable situation where adverse impacts and conflicts with policy cannot be overcome.

3.8 Further, no credibility can be given to the strategic modelling results if there is no confidence that the network that has been assessed is not representative of the network that is expected to come forward.

4 MATTERS RAISED BY NH

4.1 Comments from NH are presented in a Technical Report prepared by JSJV dated 31 January 2023. The work undertaken on behalf of NH deals with the cumulative impact of the two parts of the proposed development.

4.2 The main conclusions and recommendations of the Technical Report are that insufficient information has been submitted to enable the Secretary of State for Transport to assess whether the proposed infrastructure relating to the Strategic Road Network (SRN) is acceptable and that insufficient information has been submitted to allow NH to assess whether the impacts of the proposed development can be satisfactorily mitigated.

4.3 The applicant has responded to NH's comments in a Technical Note dated February 2024. The following actions have been identified by NH. A summary of the applicant's response follows each action. Actions that do not directly relate to relevant transport matters and those that are identified as completed are omitted:

- **Action 2**: Previous policy as set out in Circular 2/13 did not preclude new motorway junctions coming forward outside of the local plan process. Current policy as set out in Circular 01/22 does preclude new junctions outside of the local plan process. The applicant is asked to respond to the policy requirements. The applicant states that the matter is outside of the scope of the technical report.
- **Action 3**: There is insufficient evidence to determine whether the proposed new SRN infrastructure is '*essential for the delivery of strategic planned growth*'. The applicant states that the matter will be addressed separately;
- **Action 4**: Clarification is required on the assumptions that have been made regarding additional Local Plan growth in the strategic modelling. The applicant provides details of growth assumptions that have been used in the future year modelling;
- **Action 5**: Clarification is required on the approach to predicting background traffic growth by removing development trips from the future year NTEM predictions (Local Plan growth) and replacing them with trips associated with the proposed development. The applicant responds to this in relation to Action 4;
- **Action 6**: Circular 01/22 requires that proposals that are not consistent with the adopted Local Plan should be subject to a full assessment of their impact. The applicant considers this a matter outside the scope of the Technical Report;
- **Action 7**: Additional information is required regarding changes in flows on the M2 west of Sittingbourne with regard to the Lower Thames Crossing. The applicant does not address the point and does not confirm whether or not the work is necessary;
- **Action 8**: Justification is required to support the assumptions that have been made about modal shift resulting from the Sustainable Transport Strategy (STS). The

applicant states that this justification has already been provided in the Transport Assessment (Appendix B of Volume 7);

- **Action 9**: Clarification is required as to how non-motorway traffic is expected to use the proposed J5a. The applicant refers to the removal of the roundabout on the J5a eastbound on-slip implying that non-motorway traffic will leave leave the relief road at Junction B before reaching J5a;
- **Action 10**: Justification is required regarding the use of base models rather than future reference case models to inform generated traffic distribution. The applicant explains that this is the case but does not justify the approach;
- **Action 11**: Detailed drawings are required to demonstrate the compliance of proposed junctions with relevant standards. The applicant supplies these;
- **Action 12**: Costing information for the SRN infrastructure is required to demonstrate compliance with NH assessment procedures. The applicant resists providing this information on the basis that the infrastructure is entirely funded by development;
- **Action 13**: Model input files are required. The applicant supplies these to NH;
- **Action 14**: Costing information for SRN infrastructure is required to demonstrate benefit to the economy (TAG compliance). The applicant states that this information would be provided at later planning stages;
- **Action 16**: STS objectives should be revised to reflect the need to reduce vehicular demand on the SRN. The applicant argues that there is no policy requirement to target modal shift specifically on the SRN;
- **Action 17**: Additional information is required on proposed bus routes to access the wider area. The applicant repeats the response to Action 16 and acknowledges that there would be opportunities to enhance bus services to the north and south;
- **Action 18**: Further information is required to demonstrate how the STS will influence the mode choice for journeys on the SRN. The applicant refers to responses to other actions and to the move away from a 'predict and provide' approach to a vision-led approach;
- **Actions 19 and 20**: Explanation is required for not applying rural design standards up to Junction B and to explain the rationale for changing from rural to urban standards. The applicant refers to the latest drawings and provides a justification.
- **Action 21**: Drawings are required showing the extent of proposed KCC/NH adoption areas and the changes from existing highway boundaries. The applicant refers to a meeting where this matter was discussed;
- **Action 22**: A residual capacity diagram is required to show whether the proposed J5a would require upgrading in the near future. The applicant considers that this information is already available;
- **Action 23**: AM and PM flow diagrams, including HGV percentages are required for all links. The applicant provides these (2038 with development);
- **Action 24**: Merge/Diverge diagrams are required. The applicant provides these;

- **Action 25**: Justification is required for the choice of merge/diverge arrangements. The applicant provides an explanation that includes reference to design considerations that arise as a result of upstream increases in traffic demand;
- **Action 27**: Clarification is required as to whether the junction design allows for additional slip road lanes. The applicant provide confirmation;
- **Action 28**: Design exceptions need to be tabulated. The applicant describes and justifies exceptions;
- **Action 29**: Drawings should be updated to show connections and land uses. The applicant refers to a relevant drawing;
- **Action 30**: A plan is required showing proposed speed limits and their extents. The applicant provides a drawing;
- **Action 31**: Consideration needs to be given to removing non-motorway traffic form J5a. The applicant explains that the removal of the roundabout on the eastbound on-slip overcomes this issue;
- **Action 32**: Clarification is required on land available for visibility splays. The applicant provides a plan;
- **Action 34**: A 50/50 internal/external split of secondary school trips should be tested and the expected phasing of the secondary school to be clarified. The applicant presents an assessment using the 50/50 split. The school will be subject to 'earlier delivery'.
- **Action 35**: The assumptions about home-school-home and home-school-work percentages should be tested given that changes may have occurred since COVID. The applicant presents a sensitivity assessment;
- **Action 40**: Turning counts at key junctions are requested. The applicant provides these;
- **Action 41**: Screenshots of modelled flows are required to allow traffic flow diagrams to be verified. The applicant provides these;
- **Action 42**: Junction modelling files are requested. The applicant provides these to NH;
- **Action 43**: Drawings of J5a and Junction B are required showing geometric data. The applicant provides these;
- **Action 44**: Clarification is required on how HGV proportions have been calculated. The applicant states that the information is based on Kent Science Park mode splits;
- **Action 45**: Clarification is required on the assumptions that have been made about trip generation rates. The applicant clarifies.

Comment on NH Comments and Applicant Responses

4.4 The applicant has undertaken work in greater detail with regard to the parts of the proposed development that directly affect the SRN and will require approval from NH. It

is noted that the applicant does not respond to NH comments by way of referring to the outline nature of the current application as it does for KCC's comments.

4.5 The key concerns raised by NH are whether the new junction on the M2 is justified and the impact that the new junction in combination with the proposed development will have on the SRN. Relevant policy relating to the SRN as set out in DfT Circular 01/22 states, '*Where* [a new connection to the SRN has not been identified at the plan-making stage and all reasonable options to deliver modal shift have been exhausted] *has not occurred, there will be no new connections on those sections of the network designed for high speed traffic*' (see paras. 19 and 20 of Circular 01/22). As summarised above, the applicant has yet to provide a clear justification for the proposals in the context of policy that prohibits the new motorway junction.

4.6 The issue of the mode shift resulting from the STS is considered further below as this will have general relevance to the development's transport and transport environmental impacts.

5 REVIEW OF NORTHERN SITE

5.1 This section considers the transport impact of stand-alone development of the Northern Site. The technical work that forms the basis of this review is set out in the documents submitted by the applicant dated January 2024. These comprise five documents that make up the Transport Assessment and the Transport Section of the ES Main Text.

Transport Assessment

Strategic Modelling

5.2 It is not possible to undertake a review of the strategic traffic modelling undertaken in support of the application since no report has been prepared by the applicant detailing the strategic modelling of the traffic associated with the Northern Site (only extracts and headline outputs included in the TA).

Committed Development

5.3 It is not possible to review the way in which committed development traffic has been added into the 2038 Reference Case traffic model since the relevant modelling report is not available.

5.4 Committed developments in the vicinity of the proposed development are shown on the plan attached as **Figure 2**. These total over 1,500 dwellings.

5.5 Table 3.3 of the TA (Jan 2024) identifies only two committed developments; Land west of Church Road (380 dwellings) and Land off Swanstree Avenue (135 dwellings). It appears that the two developments have been interchanged. It is not clear whether this error has been carried over into the strategic modelling. It would be a significant cause for concern if the wrong numbers of generated trips had been allocated to the wrong zones in the strategic model. It is not possible to check the modelling assumptions since the modelling report is not available.

5.6 It is not clear whether Land at Stones Farm (580 dwellings), Land between Frognal Lane and Orchard View (298 dwellings) and Land at Station Road (130 dwellings) have been included. This needs to be clarified by the applicant.

Committed Infrastructure

5.7 Paragraph 3.3.7 of the TA identifies a number of committed highway schemes that have been incorporated into the 2038 Reference Case. These do not include the new roundabout junction on the A2 at Claxfield Road providing access to the development at Land between Frognal Lane and Orchard View (app. ref. 16/507689). Given that the proposed development, in combination with the completion of the SNRR, will lead to significant increases in traffic flows on the A2 east of the proposed development[6], the impact on the new roundabout junction on the A2 west of Teynham needs to be properly assessed.

Highway Safety

5.8 Section 4.3 of Volume 3 of the TA (Jan 2024) provides a summary of personal injury road traffic accidents (PIAs) for the A2, Swale Way, the A249 and the M2. No assessment has been undertaken of the record of highway safety on local roads.

5.9 Lower Road, Teynham is a narrow country lane with no street lighting, tight bends, blind crests, no footways, some long straight sections and is generally subject to the national speed limit (60mph). A short section through Teynham is subject to a 30mph speed limit, is street lit, has footways and on-street parking in places. Observations on site reveal that some vehicles currently travel at very high speeds in the vicinity of the proposed development. These observations are supported by information provided by local residents. It is understood that, because of safety concerns, KCC is currently undertaking a route study, including surveys of vehicle speeds. The results of this survey are not currently available.

5.10 **Figure 4** shows PIAs on Lower Road (and surrounding roads) over the most recently available 5 year period (2018-2022 incl.). There have been 22 PIAs in total comprising 18 slight PIAs, 2 serious PIAs and 2 fatal PIAs.

5.11 Table 7.19 of the Environmental Statement[7] (Main Text) identifies 2038 18 hour traffic flows on Lower Road to be 4,267. If this is assumed to be in the region of current 24 hour traffic flows, the total network-km travelled along this section of Lower Road is 14,935 km per day and 5.5 mill km per year. The number of observed PIAs represents an accident rate of 0.8 per mill km. The national average accident rate for rural roads is

6 See Figures 5.8 and 5.9 of the TIA and Table 5.1 of the TIA (+328 pcus in the AM peak hour and +446 pcus in the PM peak hour)

7 Hempstead Park North, Environmental Statement Addendum: Volume 1, Main Text, Entram, January 2024

0.19 per mill km[8]. In terms of fatal PIAs, the rate on Lower Road is 0.07 per mill km compared with the national average of 0.01 per mill km. **The accident rate on Lower Road is over four times the national average rate in terms of all PIAs and seven times the national rate in relation to fatal PIAs**.

5.12 Paragraph 4.3.1 of the TA Volume 3 Site Context (Jan 2024) states, '*An overview of collision data for the area around the site, inclusive of the most important corridors of the wider Sittingbourne area […] has been undertaken*'. Lower Road must be considered an important corridor since it lies along the northern boundary of part of the site and a new access is proposed linking the site to Lower Road via Frognal Lane. Lower Road runs through Teynham, the settlement most directly affected by the proposals. Further, Lower Road is currently used as a rat-run for those wishing to avoid congestion on the A2 and the work undertaken by the applicant indicates that congestion on the A2 through and east of Teynham will be increased as a result of the proposals. Despite the obvious need to undertake an assessment of highway safety on Lower Road, none has been undertaken. This is a serious flaw in the supporting technical work.

5.13 The modelling work suggests that traffic flows along Lower Road will decrease as a result of the proposed development[9]. If this were the case, the number of PIAs may decrease. A decrease in PIAs would not necessarily translate into an improvement in accident rates. Indeed, if less traffic were to use the route, it may be that rat-running traffic would take the opportunity to increase speeds and thus both increase the rate of accidents and the severity of those that occur.

5.14 The next section considers the issue of projected traffic flows on Lower Road since this not only affects highway safety but also has implications for the use of Lower Road by sustainable and vulnerable highway users.

Traffic Flows on Lower Road, Teynham

5.15 The projected decrease in traffic flows on Lower Road resulting from the proposed development is a counter-intuitive outcome for the following reasons:

- Local traffic travelling to and from origins and destinations accessed from Lower Road will continue to use Lower Road;

8 See https://www.gov.uk/government/statistical-data-sets/reported-road-accidents-vehicles-and-casualties-tables-for-great-britain#road-type-ras03

9 See Table 5.1 of TA Vol 7, January 2024

- There are no proposals to close any part of Lower Road to vehicular traffic. Hempstead Road is proposed to be severed south of the Bapchild Bypass but this is unlikely to lead to any significant reduction in traffic flows on Lower Road. Any driver wishing to use Lower Road as a rat-run to avoid the A2 will be provided with better quality alternatives to Hempstead Road by either using the link between the Bapchild Bypass and the northern section of Hempstead Road or through the proposed development;

- The development itself will generate a significant level of traffic wishing to travel east along the A2 corridor. For motorists within the site the use of Lower Road is particularly attractive since to access the A2 from the site requires drivers to travel first up to a mile west to access the A2;

- The SNRR does nothing to relieve Lower Road. Indeed, it facilitates movement to and from the A2 corridor east of Sittingbourne and the greater the congestion of the A2 corridor east of Sittingbourne the greater the likelihood of Lower Road (and other routes) being used as rat-runs. Paragraphs 5.53-5.60 below show that it is predicted that the A2 through Teynham will operate over capacity as a result of the Northern Site, thus increasing the attractiveness of Lower Road as a way to avoid A2 delays.

5.16 The applicant fails to explain the irrational modelling results for Lower Road. It appears likely that the proposals are likely to significantly increase traffic on Lower Road and thus exacerbate existing poor highway safety.

Cycling on Lower Road, Teynham

5.17 National Cycle Network Route No. 1 (NCN1) currently bypasses the section of Lower Road in the vicinity of the site:

Plan 5.1: National Cycle Network Route 1

5.18 NCN1 does not currently function as a direct and convenient east-west route. There are no alternative recommended east-west cycle routes passing the site identified on the Explore Kent map of walking and cycling routes. At present neither Sustrans (NCN routes) nor Kent County Council identify any cycle routes in the vicinity of the site that could assist cyclists in accessing either Sittingbourne or Faversham. Lower Road would constitute a convenient and largely flat route east-west between Sittingbourne and Faversham, a realistic alternative to using the A2 that is congested in places, carries significant numbers of HGVs and has sections where vehicles travel at relatively high speeds. Some cyclists already choose to use Lower Road rather than negotiate the A2 or the longer detour route to the north. Existing and possible new cyclists would not, however, be able to safely use Lower Road if it were to continue to carry fast moving rat-running traffic at current or elevated levels in the future.

5.19 KCC, in its consultation response refers to a possible modal filter on Lomas Road[10]. The applicant makes no reference to this in any of the supporting documentation. There has been no work to explore whether a traffic regulation order (TRO) to restrict the passage of motor vehicles at some point along Lomas Road would be possible.

5.20 Table 7.15 of the ES Main Text document identifies 18 hour traffic flows on Lower Road in 2038 without development of 2,662 vehicles (2-way)[11]. A typical conversion factor from 18 hour flows to peak hour flows is around 10%. This would suggest a prediction of around 266 vehicles in the peak hours.

5.21 Table 5.1 of the TA Volume 7 provides a summary of the strategic modelling outputs. For the 2028 situation without the proposed development traffic flows on Lower Road west of Teynham are predicted to be 351 in the AM peak hour and 361 in the PM peak hour[12]. East of Teynham flows are predicted to be lower at 141 vehicles in the AM peak hour and 140 in the PM peak hour.

5.22 Despite there being much evidence that there will be significant traffic flows on Lower Road with development, the prediction is that traffic will cease[13]. For this to be the case, Lower Road must be closed to traffic. In none of the transport supporting documents is there any suggestion that Lower Road will be closed to traffic. The Scheme Overview drawing (Drg. No. 16-023/6000D rev. C) attached as Appendix A of the TA Volume 6 (Highways Infrastructure Proposals) clearly shows that the Bapchild Bypass is expected

10 See KCC Consultation Response, 01 March 2023, p.18

11 ES Main Text, page 90, link Ref. 53.

12 See TA Volume 7, page 18, link ref. 16

13 See TA Volume 7, page 18, link ref. 16

to link to the northern section of Hempstead Lane. This is confirmed in Figure 4.7 of the TA Volume 4 (Development Proposals) that shows the junction in more detail. Drivers are therefore expected to be able to access Hempstead Lane and Lower Road directly from the Bapchild Bypass. Since there is no proposal to close or restrict access along Lomas Road, drivers would also be able to reach Lower Road by this route.

5.23 Lower road is currently dangerous, particularly for vulnerable highway users such as cyclists. It appears likely that the proposed development will lead to an ***increase*** in traffic on Lower Road, rather than the dramatic decreases that the strategic model is predicting. The evidence that is available suggests that proposed sustainable access strategy is deficient in relation to Lower Road.

Proposed Treatment of Frognal Lane/Lower Road Junction

5.24 Drawing No. 16-023-6015 in Appendix A of the TA Volume 6, Highways Infrastructure Proposals (January 2024) shows a change in priority at the Lower Road/Frognal Lane junction. Visibility at the junction is constrained by the presence of a high brick wall on the south-eastern side of the junction. The drawing shows forward visibility for vehicles travelling from Lower Road east to Frognal Lane of 18m, suitable for a road carrying traffic at 15mph. There has been no assessment made of whether vehicles will indeed travel at or below this speed. The issue is particularly important since it is proposed to provide a toucan crossing just to the south of Lower Road. Pedestrians using the crossing could be put at risk if forward visibility for drivers travelling from east to south is insufficient to allow them to stop in time if there is someone on the crossing.

5.25 It has been stated above that Lower Road currently suffers from a poor accident record. Some vehicles currently travel at high speeds in the vicinity of the Frognal Lane junction. The change in priority of the Lower Road/Frognal Lane junction could introduce a significant new risk as drivers travelling east on Lower Road fail to give way at Frognal Lane and potentially collide with vehicles travelling north on Frognal Lane that have priority.

Access to Teynham Railway Station

5.26 Issues surrounding the general inaccessibility of train services have been outlined in **Section 2** above. Only a very small proportion of the Northern Site site lies within a convenient walking distance (800m) of Teynham railway station.

5.27 Those who might choose to walk to the station would have to negotiate poor pedestrian access. There are no footways on the northern side of Lower Road east and west of the

station access and only a very short, narrow section of footway is provided at the station access set back on the western side of the access leading into the parking area. Crossing Lower Road is made more hazardous because the Station Road junction is located directly opposite the station access:

Photo 5.1: Looking North into Teynham Railway Station Access

5.28 There has been no work to demonstrate that pedestrian access at the station can be improved.

5.29 The station is provided with five Sheffield-type cycle stands capable of accommodating ten bicycles. The stands are located on the westbound platform and are uncovered. At the time of the site visit (midday Thursday 02 May 2024) there were no bicycles present suggesting that cycle access is not currently popular. The stands take up a small amount of space where the platform is widened close to the ticket office. It is not clear whether any further bicycle parking could be provided without obstructing the platforms. Bicycle parking could be provided within the car park area but would lead to a reduction in car spaces.

5.30 The car park currently has 20 marked car parking spaces. Parking is free of charge. . The station has no dedicated vehicle turning area and cars dropping off or picking up would need to manoeuvre between the car park and access. At the time of the site visit three vehicles were parked outside of marked bays reducing the already limited manoeuvring area. Turning vehicles at the station access conflicts with pedestrian and cycle movements and also represent a hazard for other vehicles arriving at the station whose drivers are afforded limited visibility between the access and the car parking area.

5.31 It would be impossible for a bus to access the station itself. Any bus passengers dropped off or picked up on Lower Road would need to negotiate the hazardous pedestrian route described above.

5.32 In conclusion, Teynham railway station has very poor pedestrian, cycle and bus access. There has been no work to demonstrate whether access by sustainable modes could be improved.

5.33 In the absence of improvements for sustainable modes it is likely that most people would access the station by car, parking either on street on surrounding roads or by being dropped off or picked up, a situation that would lead to severe safety hazards due to the constrained space available for manoeuvring within the station and conflicts with vulnerable highway users and other vehicles.

Transport Environmental Impacts

5.34 Chapter 7 of the ES Main Text (Entram, January 2024) sets out an assessment of the transport environmental impact of the proposed development.

Derivation of Daily Traffic Flows

5.35 Paragraph 7.16 of the ES Main Text states that daily traffic flows (18hr and Average Annual Daily Traffic Flows (AADT)) have been derived by factoring the peak hour flows output from the strategic traffic model. It is stated that, '*This factoring used a combination of DfT from Manual Classified Counts and Automatic Traffic Counts that included peak hour and daily flow volumes at a number of key locations across the network*' (para. 7.16 of ES Main Text). No information is provided to show where counts have been undertaken and how those counts have been used to derive factors that are deemed appropriate for converting peak hour to daily traffic flows.

5.36 To assess transport environmental impacts it is important to ensure that traffic flows are reliable. This is particularly true for those sensitive links and locations in close proximity to the proposed development that are most likely to experience significant impacts. Lower Road is a highly sensitive location since it has a poor accident record, it is and is expected to be used by vulnerable highway users and it lacks footway and pedestrian crossing facilities in places. It has been shown above that the projected traffic flows on Lower Road cannot be correct. The results and conclusions of the transport environmental assessments cannot, therefore, be correct.

Study Area

5.37 Paragraph 7.19 identifies Lower Road as one of the seven 'corridors' that constitute the study area. As already shown, the failure to model realistic future traffic flows on Lower Road invalidates the work that has been undertaken on this corridor.

Approach to Assessment of Transport Environmental Impacts

5.38 Paragraph 7.6 of the ES Main Text refers to the IEA Guidelines. These are used as a basis for the assessment of transport environmental impacts. However, no acknowledgement has been given to Rule 1 of the EIA Guidelines that states:

> **Include highway links where traffic flows will increase by more than 30% (or the number of heavy vehicles will increase by 30%) [and] Include any other specifically sensitive areas where traffic flows have increased by 10% or more**

5.39 The following table summarises the results of the assessment of severance for some particularly sensitive areas affected by the proposals:

Table 5.1: Transport Environmental Impact: Severance

Highway Link	Sensitivity	Change in Traffic Flow	Magnitude	Significance
Lower Road	medium	-49%	low	neutral or slight
A2 through Teynham	medium	+29% - 31%	negligible - low	neutral or slight
A2 through Ospringe	medium	+13% - +16%	negligible	neutral or slight
Swanstree Avenue	high	+19%	negligible	slight
Lynsted Lane	medium	+23%	negligible	neutral or slight

Source: extracts from Tables 7.2, 7.19, 7.21 of ES Main Text

5.40 Lower Road is identified as having medium sensitivity on account of it passing through a residential area. No account has been taken of a number of factors that should have informed the assessments:

- the very poor accident record along the road;
- the absence of footways in some areas requiring pedestrians to walk within the carriageway, and
- the particularly poor pedestrian access arrangements at Teynham Railway Station where there are no footways on the northern side of the road at the station access,

there are no pedestrian crossing facilities provided and pedestrian crossing is made even more difficult by the presence of the Station Road junction directly opposite the station access.

5.41 The sensitivity of Lower Road should have been identified as 'High' rather than 'Medium'.

5.42 It has already been pointed out that the predicted reduction in traffic flows on Lower Road makes no sense in relation to the proposed site access arrangements and the other proposed highway infrastructure works.

5.43 The A2 through Teynham is identified as having medium sensitivity. Again, the assessments fail to acknowledge a number of factors that would suggest that the A2 through Teynham is of higher than 'Medium' sensitivity:

- The presence of an Air Quality Management Area;
- The significant level of congestion currently experienced by drivers during peak hours and at other times during the day;
- The presence of cars parked on footways restricting the width available for pedestrians and potentially forcing some vulnerable users such as parents with pushchairs to walk within the carriageway;
- The presence of vulnerable highway users such as school children at some times of the day;
- The lack of controlled pedestrian crossing facilities (there is only one signal controlled crossing on the A2 in Teynham).

5.44 The level of change in traffic flows is predicted to exceed 30%. The level of adverse impact on the A2 through Teynham, given its high sensitivity is likely to require mitigation. At present no mitigation is proposed.

Increase in HGVs on A2

Operational Phase

5.45 From the Grovehurst Interchange to J7 of the M2 via the A249 and M2 (via J5 of the M2, the Stockbury Interchange) is 28km. Via the SNRR the distance would be around 16km. The SNRR route would therefore become an attractive alternative for HGVs travelling between the Isle of Sheppey (and the industrial areas to the north of Sittingbourne) and areas to the east.

5.46 The flow diagrams attached as Appendix A of the TA Volume 7 show the following percentages and numbers of HGVs travelling along the A2 to the east of the new SNRR (Corridor 5):

Table 5.2: HGVs on A2 Between SNRR and Teynham

	AM Peak		PM Peak	
	% EB/WB	**No.**	**% EB/WB**	**No.**
2038 Reference Case	5%/3%	51	1%/2%	24
2038 with Development	5%/5%	85	1%/3%	38
Change		+67%		+58%

5.47 Table 7.22 of the ES Main Text identifies an increase in HGVs on the A2 through Teynham of 707 or 56%. Table 7.23 identifies the fear and intimidation magnitude on the A2 through Teynham as Moderate in the Base Case increasing to Great in the With Development Case. Paragraph 7.163 of the ES Main Text states that this results in a ***permanent moderate to large adverse impact***. The level of impact would be increased if the sensitivity of the A2 through Teynham were to be classified as high as argued above.

5.48 The data and assessments that are presented clearly indicate that the proposed development will lead to a significant increase in fear and intimidation on the A2 through Teynham (and further east). Despite this, the section of the ES that identifies Residual Impacts concludes, '*The mitigation measures are anticipated to result in no change to the perception of fear and intimidation experienced by people walking along the adjacent footways or waiting at bus stops on corridors 5 and 6. Therefore, the impact magnitude will remain great, resulting in a permanent moderate to large adverse effect*' (para. 7.183). This not only misrepresents the assessments that are set out in the document but dismisses the need for mitigation.

5.49 The significant increases in HGV movements on the A2 through Teynham and further east will not only have impacts in terms of fear and intimidation but will also have adverse effects in terms of increased noise and vibration and poorer air quality.

Construction Phase

5.50 The assessment of transport environmental impacts during the construction phase is cursory (paras. 7.137 to 7.144). Paragraph 7.142 states, '*Although the traffic flow volumes on the surrounding network would likely cover the full range of thresholds as set out in the IEA guidelines, the locations where pedestrian movements will be most prevalent will have traffic flows in the lower thresholds*'. No evidence is presented to elaborate on or support these vague statements.

5.51 There is no prediction of the number of HGV movements that would be generated during construction or any information provided on the period over which elevated HGV flows would be present. There is also no consideration given to the potential level of impacts if the construction were undertaken before or after the SNRR were constructed. If construction work begins before the SNRR is open, the impact of construction traffic on the A2 and local roads and communities will be increased. If construction occurs after the SNRR is open, the impact of construction HGVs may be reduced but the overall impact of HGVs may be further increased as the SNRR encourages HGV movements to transfer from the much longer route via the A249 and M2.

5.52 Despite the lack of evidence and the acknowledgement that impacts would cover the whole range of thresholds, the conclusion drawn in paragraph 7.173 states, in relation to fear and intimidation, '[…] *the residual magnitude of impact will be a temporary neutral effect*'. The failure to properly undertake an assessment of transport environmental impacts during construction is a serious flaw in the work.

Total Flows on A2

5.53 Chapter 7 of the ES provides information about both existing and predicted traffic flows on the A2 through Teynham. The following table extracts some key information from the ESs for the Northern and Combined Sites:

Table 5.3: Daily Traffic Flows on A2 through Teynham (18 hr)

Scenario	Northern Site	Combined Site
2017 Base	16,317[1]	17,706[2]
2038 Reference Case	18,493/20,392[3]	25,992[4]
2038 with Dev	23,860/25,401[3]	28,810[4]
Difference	+5,367/5,009	+2,818

Sources: [1] Table 7,15 ES Chapter 7 (Northern Site), [2] Table 7.15 ES Chapter 7 (Combined Site), [3] Table 7.19 ES Chapter 7 (Northern Site), [4] Table 7.19 ES Chapter 7 (Combined Site).

Note: Where two flows are shown, these are for different points on the A2 in Teynham (west/east of Station Road)

5.54 It is immediately evident that the 2017 Base Flows presented for the two developments do not agree. This discrepancy needs to be explained.

5.55 The 2038 Reference Case flows are shown to be significantly higher with the combined Site than with the Northern Site. Since both should be based on the same set of development assumptions the flows should be the same. This discrepancy needs to be explained.

5.56 The increase in traffic caused by the Northern Site alone (+5,367/+5,009) is shown to be much higher than (almost double) the increase associated with the Combined Site (+2,818).

5.57 Existing traffic flows on the A2 through Teynham are already very high and lead to congestion during some parts of the day. The congestion is the result of heavy traffic flows passing through a busy village centre with parked vehicles in places, pedestrian crossing, buses stopping and numerous side roads and premises with frontage access.

5.58 The applicant has undertaken no assessment of the potential change in traffic environment in the centre of Teynham resulting from the proposed development.

5.59 The concept of Congestion Reference Flows (CRF) is a method used to assess whether roads of different standards are capable of accommodating certain levels of daily traffic[14]. The A2 through Teynham has a maximum width of around 7.3m. This is reduced in places due to on-street parking. A single carriageway Principal Road with a width of 7.3m has a CRF of 23,000 vehicles per day. When the CRF exceeds this level '...*the effect on traffic is likely to be one or more of the following: flow breaks down with speeds varying considerably, average speeds drop significantly, the sustainable throughput is reduced and queues are likely to form*'[15]. Table 5.3 above shows that the Northern Site causes the CRF to be exceeded on the A2 through Teynham. For the Combined Site the CRF is exceeded even before development traffic is added.

5.60 If the A2 through Teynham were a 'rural road' (the type of road for which the CRF approach was developed) the predicted future flows would present a significant problem in terms of congestion. Traffic flow through the village is, however, interrupted and constrained by on-street parking, pedestrians crossing the road, numerous side roads and frontage accesses, bus stops and larger vehicles servicing shops and commercial premises. The capacity of the A2 in the built-up area of Teynham will therefore be less than than predicted using the CRF method and congestion will be evident at lower levels

14 See Annex D of TA 46/97 Traffic Flow Ranges for Use in the Assessment of New Rural Roads (DfT, February 1997 – withdrawn now but no better or more appropriate methodology currently exists)

15 See Para D.1 of Annex D of TA 46/97

of flow (i.e. a road of a given width/standard in an urban setting has a lower capacity than a road with the same width/standard in a rural setting).

5.61 From the evidence available it appears highly likely that the Northern Site alone would lead to very severe congestion on the A2 through Teynham (and elsewhere) and the Combined Site would severely worsen the congestion predicted to be already present on the A2.

5.62 This is further evidence that Lower Road will be used more intensively as a rat-run avoiding the A2 as a result of the proposed development.

6 REVIEW OF COMBINED SITE

Strategic Modelling

6.1 As is the case with the Northern Site, it is not possible to undertake a review of the strategic traffic modelling undertaken in support of the application since no detailed forecast modelling report has been prepared. The TA contains, in Appendix A, a Technical Note entitled, Strategic Modelling Technical Note but this is a summary document and does not provide the level of detail to enable the reader to understand the assumptions that underlie the work. For example, it is not possible to understand how Highsted Road has been incorporated into the model (see below) or how the way the model has assigned traffic has been affected by assumptions about links and junction capacities or the way allowance has been made for bus priority or pedestrian and cycle crossings.

Severance and Sustainable Travel

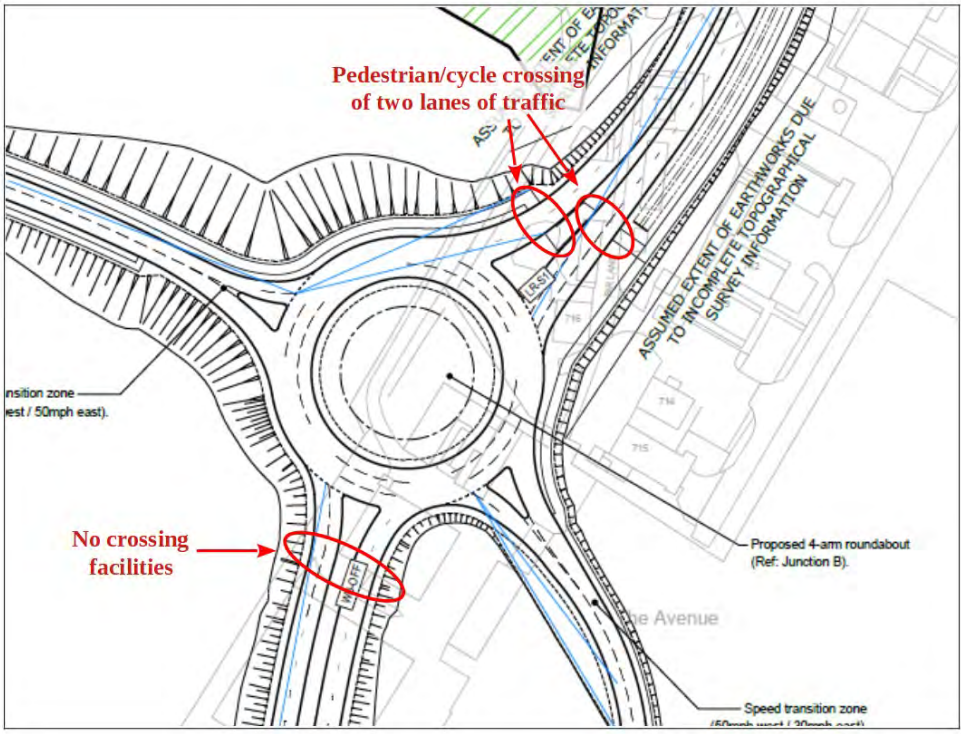
6.2 The overall concept of the proposed development relies very heavily on the provision of significant new highway infrastructure. The SSRR is located through the centre of the proposed development so as to maximise vehicle access. The SSRR is labelled a 'Sustainable Movement Corridor' (SMC) in the transport supporting documents. This label is both inaccurate and misleading since the SSRR is primarily designed for vehicle movement and the overall effect of it is to 'build in' a barrier to movement on foot and by bicycle.

6.3 The following paragraphs review of the various proposed sections of the SSRR as set out in Volume 6 of the TA (May, 2021). The review serves to demonstrate the priority given to vehicles and the problems that the SSRR represents to those using sustainable modes:

Kent Science Park South Junction

6.4 The following plan shows the proposed roundabout junction providing access to Kent Science Park south:

Plan 6.1: Kent Science Park South Junction (extract from Drg. No. 16-023/2011D)

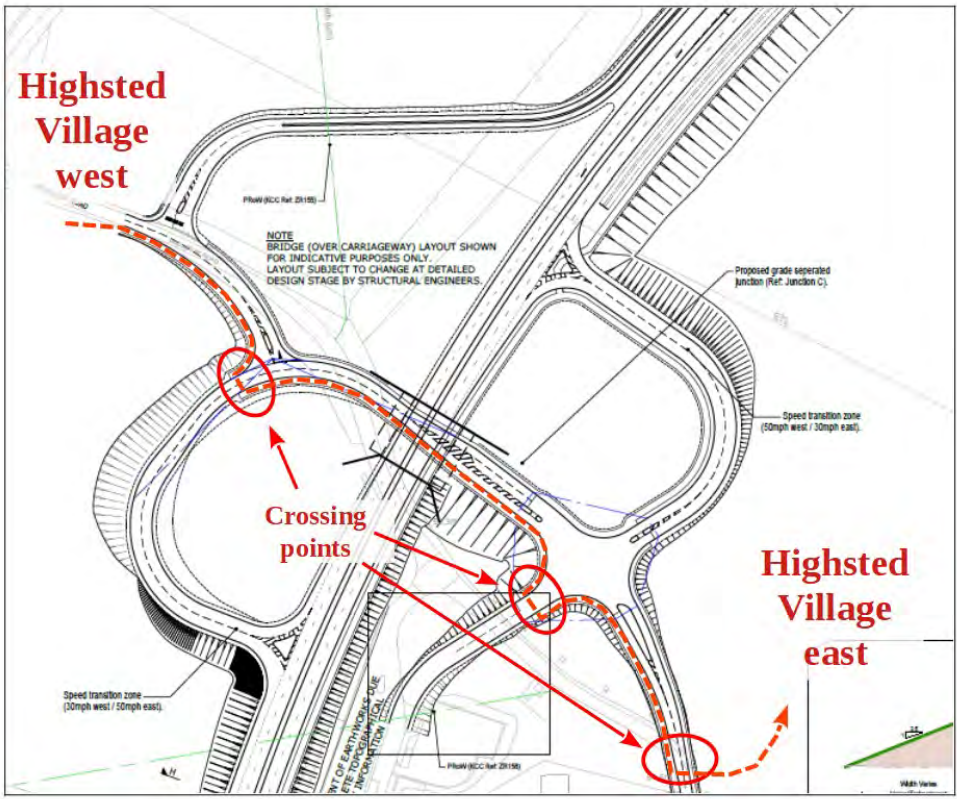


6.5 Kent Science Park lies to the east of the SSRR in this area and most of Highsted Village lies to the west. No crossing facilities are provided to the south of the junction and none to the north until the Commercial Access to Highsted Road (see below). All pedestrians and cyclists would be required to use the uncontrolled crossing points of the north and southbound dual-carriageway arms of the junction. Crossing two lanes of potentially fast moving traffic at roundabout entries and exits is highly threatening for even the most able bodied and confident pedestrian. The crossings would represent a significant barrier to sustainable travel and would be unusable or highly dangerous for vulnerable groups.

Commercial Access Junction to Highsted Road

6.6 The following plan shows the proposed junction arrangement:

Plan 6.2: Commercial Access Junction to Highsted Road



6.7 Parts of Highsted Village are located to the east and west of the SSRR. Although the supporting information refers to the bridge over the SSRR as a 'green bridge' it does not function as a convenient and direct route for pedestrians and cyclists. Although pedestrians and cyclists may, with the redesign of the bridge, have a segregated route crossing over the SSRR, there are then three road crossing points to negotiate. A genuine 'green' route would provide direct and convenient pedestrian and cycle access without having to negotiate the complicated road layout. The junction is essentially designed to provide high vehicle capacity with the potentially widened bridge an afterthought (and not even shown of the drawing).

6.8 There are no other pedestrian or cycle crossing points north of this junction that might offer a more direct route between the eastern part of Highsted Village and the south of Sittingbourne.

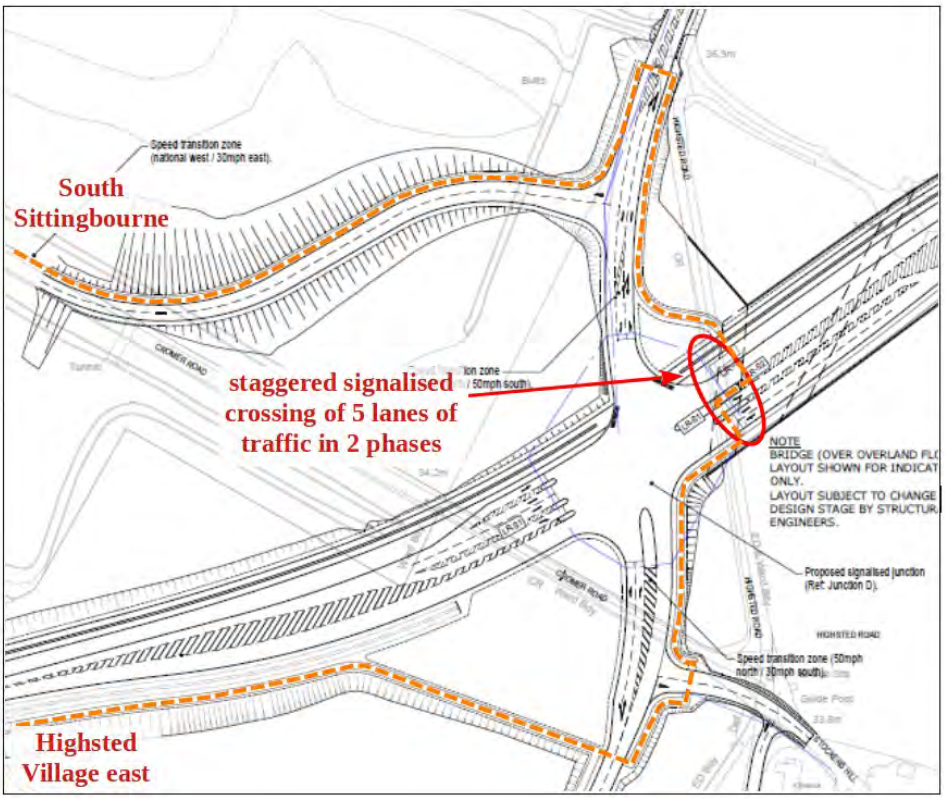
6.9 A bus and cycle link is shown on the northern side of the SSRR between this junction and the Church Street junction. Given that the SSRR has no frontage access and few junctions, it is unclear how the segregated bus route could offer a significant journey time advantage over a route using the main carriageway since it appears likely that

general traffic will, in any case, flow quite freely along this bypassed section of the SSRR.

Highsted Road Junction

6.10 The proposed junction is shown on the following plan:

Plan 6.3: Highsted Road Junction



6.11 The route shown in orange for cyclists between south Sittingbourne and Highsted Village east illustrates the priority given to vehicles at this junction and the limited and convoluted routes available for sustainable modes.

6.12 Pedestrians and cyclists are also faced with significant waits at the SSRR since they are forced to cross in two stages.

6.13 No further crossing points of the SSRR are proposed between this junction and the roundabout junction at the south of Oakwood Village (Church Street junction).

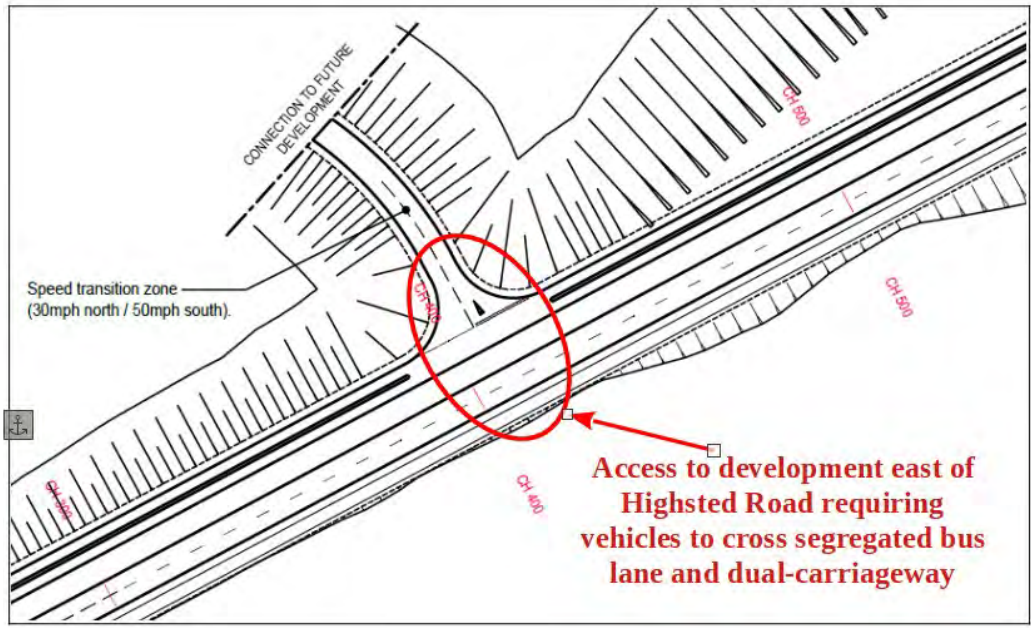
6.14 It is noted that the operational assessments of this junction are missing from Appendix E of the TA Vol. 7. It is therefore impossible to assess what assumptions have been made about the frequency of use of the pedestrian facilities and impossible to assess the

delays that are predicted to be faced by pedestrians seeking to cross the SSRR at this point. These operational assessments need to be provided by the applicant.

Vehicle Access to Development East of Highsted Road

6.15 The scheme drawings identify an access connecting the SSRR with the proposed development east of Highsted Road:

Plan 6.4: Access to Development East of Highsted Road

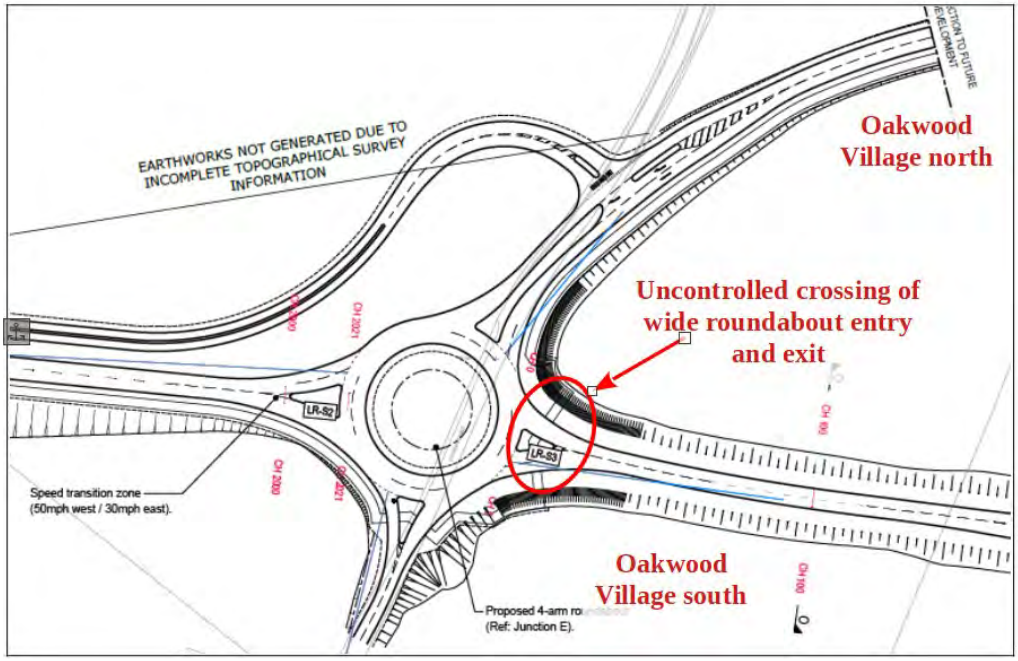


6.16 The junction as shown would not be acceptable. This aspect of the overall access strategy has not been thought through. It is proposed to limit the use of the northern section of Highsted Road to buses and cyclists (see Figure 6.2 of TA Volume 5). General vehicle access therefore needs to be to and from the south either via the Highsted Road junction or Cromer Road to access Sittingbourne directly. If there is to be another junction in the location shown above it is necessary to demonstrate that it can operate safely and satisfactorily.

Church Street Junction

6.17 The following plan shows the proposed junction:

Plan 6.5: Church Street Junction

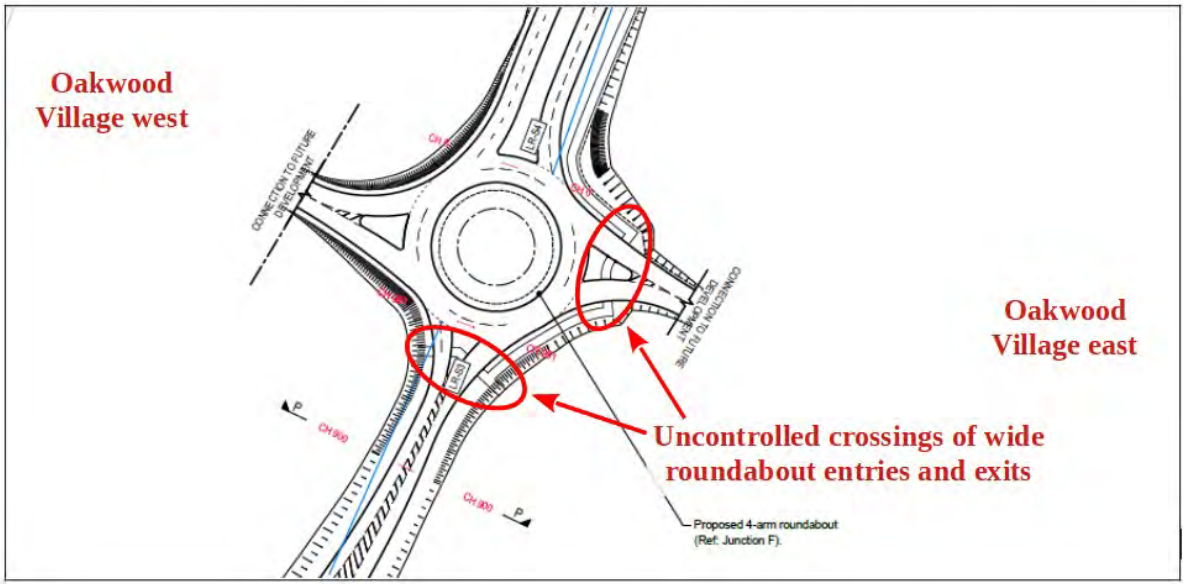


6.18 In order to travel between Oakwood Village north and south it would be necessary to negotiate uncontrolled crossing points at a two-lane westbound roundabout entry and a wide roundabout eastbound exit. This arrangement would represent a significant barrier to sustainable travel and would be highly dangerous for vulnerable highway users.

Oakwood North Junction

6.19 A roundabout junction is proposed providing access to the northern parts of Oakwood Village:

Plan 6.6: Oakwood North Junction

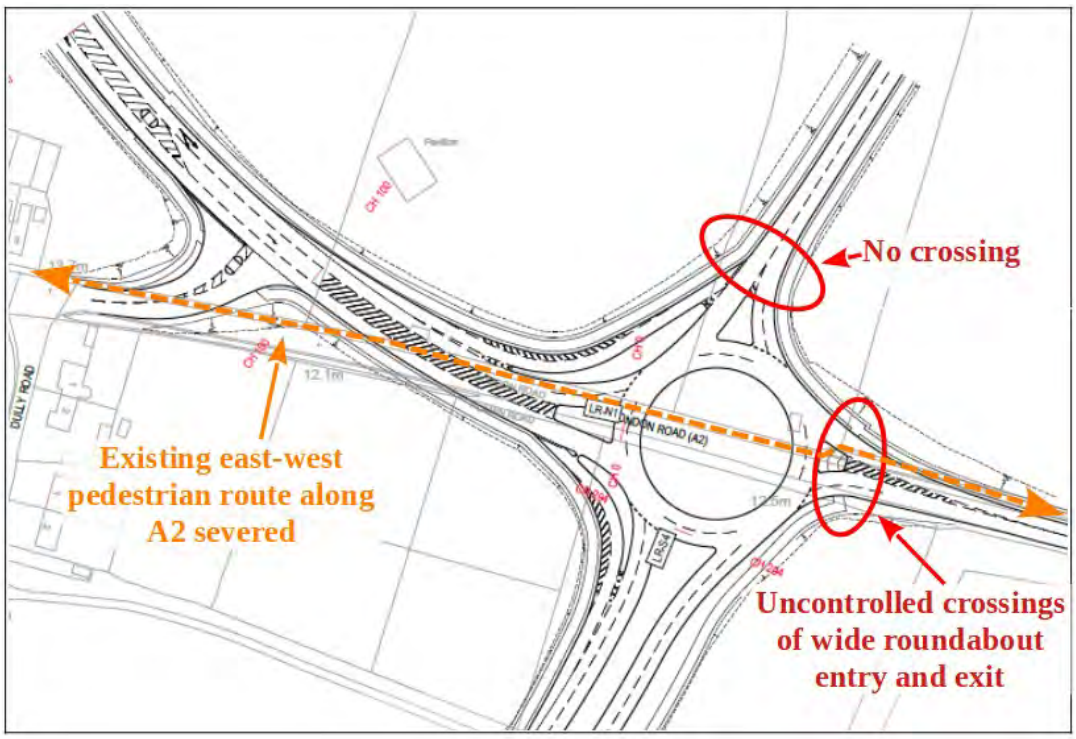


6.20 The proposed arrangement provides priority to vehicles and makes pedestrian and cycle movements both difficult and hazardous where uncontrolled crossing facilities are provided close to roundabout entries and exits.

A2 Junction

6.21 A roundabout junction is proposed to connect the SSRR to the A2:

Plan 6.7: A2 Junction



6.22 North-south movements on foot and by bicycle are made very difficult and dangerous by the introduction of the uncontrolled crossings on the eastern side of the roundabout. This arrangement introduces a significant level of severance between the northern and southern parts of the proposed development. Access to Teynham railway station, for example, is made difficult for those on foot and using bicycles travelling between the station and development south of the A2. New residents living north of the A2 would find it almost impossible to access, on foot, the proposed new school located to the south-west of the roundabout.

6.23 The existing pedestrian footway route that follows the northern side of the A2 is entirely severed as it becomes impossible to travel east-west without crossing roads that are not provided with designated facilities.

6.24 The majority of junctions along the SSRR are large roundabouts. These are threatening and dangerous for cyclists using the carriageway. Cyclists and pedestrians are provided with no controlled crossing facilities at these roundabout junctions. Severance caused by these large roundabouts is particularly severe at the A2 junction (both north-south and east-west) and between the eastern and western sides of Oakwood Village.

6.25 One grade separated crossing of the SSRR for pedestrians and cyclists is proposed at the commercial access junction to Highsted Road. Despite the crossing being labelled a 'green bridge', the junction is designed primarily for vehicle movement and pedestrians and cyclists are required to cross a number of roads with no controlled crossings.

6.26 The other main junction at Highsted Road is again primarily designed to maximise vehicle capacity and pedestrians and cyclists are forced to undertake convoluted routes subject to significant delays at a staggered signalised crossing of the SSRR.

6.27 The use of the term 'Sustainable Movement Corridor' (SMC) to describe the SSRR route is both inaccurate and misleading as the proposed SSRR represents a very significant barrier to sustainable travel. Vehicle capacity on links and at junctions is prioritised over safe, convenient and direct pedestrian and cycle routes. The development is primarily designed for motor vehicles with sustainable modes relegated to secondary status. This conclusion is perhaps unsurprising given the overriding need of the applicant to justify the provision of a new motorway junction.

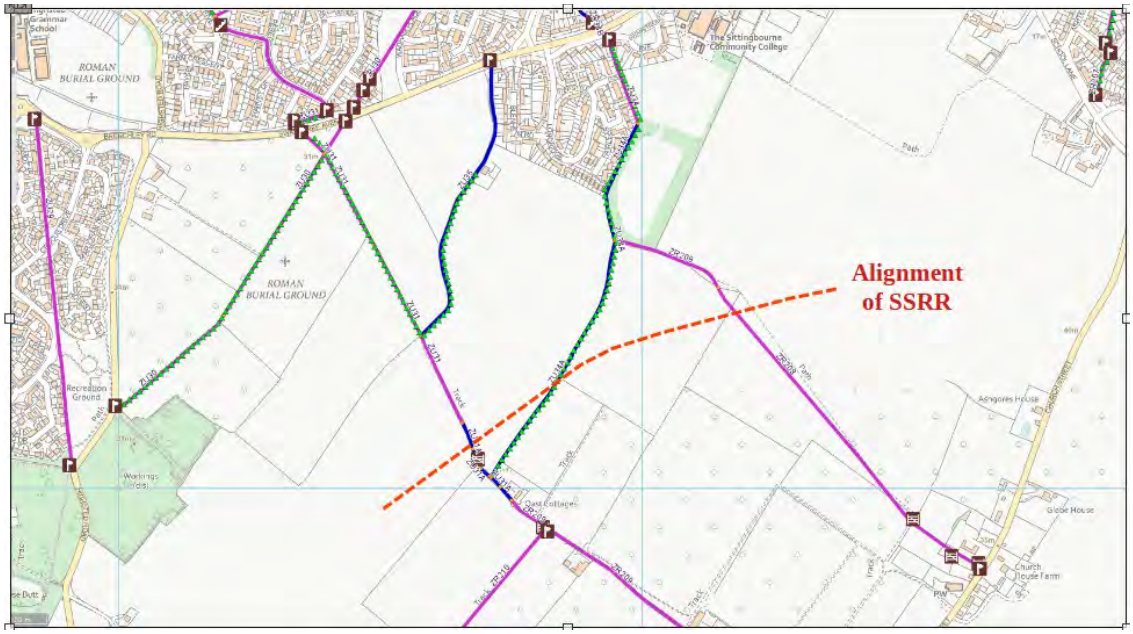
6.28 The applicant is likely to respond to this issue by stating that improved pedestrian and cycle crossing facilities will be provided at later stages of the planning process. This will not overcome the fundamental barrier effect of a higher speed, high capacity distributor road passing through the centre of the development. At grade signalised crossings on 50mph roads are hazardous and in many areas the SSRR is either in cutting or on embankments, making it more difficult to meet accessibility standards in terms of gradients. Grade-separated crossings (footbridges or subways) present both barriers in terms of additional gradients and security concerns.

6.29 It is not possible to create a permeable urban environment that is conducive to walking and cycling around a high capacity, high speed vehicle link.

Severing of Existing Rights of Way

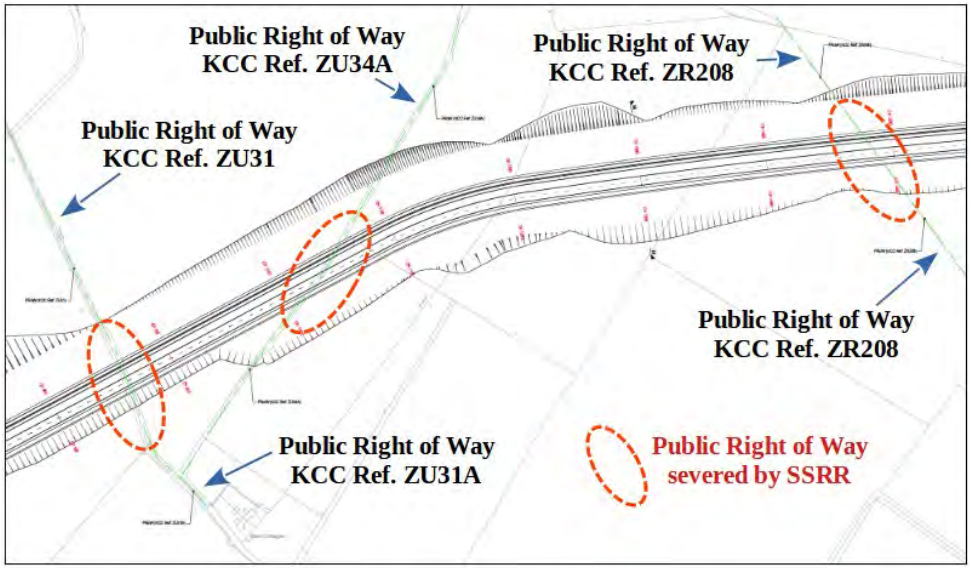
6.30 There are currently three public rights of Way (PROWs) linking Swanstree Avenue with areas to the south including Highsted, Rodmersham and Rodmersham Green:

Plan 6.8: Public Rights of Way south of Swanstree Avenue



6.31 The plan shows that the SSRR crosses all three of these PROWs. The existing rights of way provide the most direct walking routes between villages to the south of Sittingbourne and key facilities within the town such as the secondary school on Swanstree Avenue. The following plan extracted from the TA Vol. 6 shows in more detail the proposed SSRR in this area:

Plan 6.9: SSRR Severing Public Rights of Way

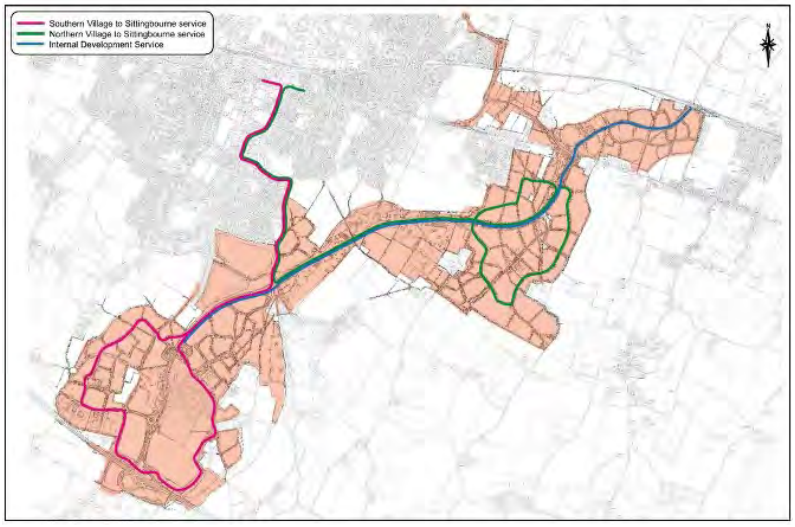


6.32 There is no mention of how these existing PROWs will be maintained in either the TA Volume 5 Sustainable Transport Strategy or the Transport Chapter of the ES Main Text. The work undertaken to date suggests that the proposals will have a significant adverse impact in terms of severance in this area yet the issue has been entirely ignored.

Proposed Bus Accessibility

6.33 Figure 5.1 of Vol. 5 of the TA provides an indication of a potential 'Longer Term' Conventional Bus Route Pattern:

Plan 6.10: Proposed Bus Services



source: Figure 5.1 of TA Vol. 5

6.34 It is worth noting that a total of three new bus services are identified. It is not possible to design a single bus service that links Oakwood Village, Highsted Village and the Northern Site to the town centre that remains efficient and convenient (and thus viable). It is not possible to design a single service that can link both villages and also connect to the town centre, hence a third service to offer this linkage.

6.35 The strategy that is proposed provides no direct link between the Northern Site and the town centre.

6.36 The 'loops' within Oakwood and Highsted Villages, although necessary in order to reduce bus stop walking distances to reasonable levels will mean that some residents will have to endure long bus diversions the 'wrong way' around the loop unless services in both directions are provided. If services run only one way (clockwise for example) they become unattractive for around half of potential passengers and if they run both

ways the frequency in each direction will inevitably have to reduce making the services less attractive to everyone.

6.37 The necessity for a number of routes to provide reasonable service 'coverage' and the 'one-way loop' problem will inevitably reduce the potential to provide frequent services. The CIHT document, 'Buses in Urban Developments' (CIHT, January 2018) examines the relationship between the frequency of bus services and the distance that people are prepared to walk to them[16]. The standard assumption of a maximum 400m walk to bus stops is recommended when the frequency of service is 5 per hour or better. When less frequent services are provided the recommended walk distance reduces to 300m. The need to provide multiple bus services will inevitably reduce the frequency at which a viable service can continue. People will be less inclined to walk to infrequent services and overall patronage would fall further undermining the viability of services.

6.38 The segregated bus priority route that is proposed between the Commercial Access to Highsted Road (Junction C) and the Church Street Junction (Junction E) makes the bus services between these points highly inaccessible for anyone wishing to travel to or from areas to the south of the segregated bus route. The SSRR serves as a significant barrier to pedestrian movement to and from bus services. Areas to the west of Oakwood Village and areas to the east of Highsted Village would have extremely poor bus accessibility for this reason.

6.39 For the above reasons it is concluded that the proposed bus access strategy is poor and is likely to lead to a very low level of bus patronage.

6.40 The extremely high level of new highway capacity will serve to make bus services relatively less attractive than the use of the private car and further undermine any aspiration to develop an efficient, convenient and viable public transport strategy for the development.

Impact on Ruins Barn Road/Woodstock Road Corridor

6.41 For someone living in Highsted Village, the journey into Sittingbourne via the SSRR and A2 would be around 8km. To travel via the Ruins Barn Road/Woodstock Road route would be around 4km. The only direct route for general traffic between Highsted Village and the centre of Sittingbourne is via the Ruins Barn Road/Woodstock Road route. It is therefore inevitable that the proposed development will generate a very substantial

16 See Table 4 of CIHT, 2018

increase in traffic on this route. The route is too far to walk and would be extremely threatening to most cyclists due to the lack of cycling facilities, the heavy traffic flows and the congestion on links and at junctions.

6.42 This obvious adverse impact of the proposed development is confirmed by the modelling that has been undertaken. The following results are those presented in Tables 61 to 6.6 of Vol. 7 of the TA:

Table 6.1: Change in Operational Performance of Junctions on Ruins Barn Road/Woodstock Road Route

Woodstock Rd/Cromer Rd/Tunstal Rd (Junction 32)*

	Without development				With development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
Tunstal Rd	1.34	**64**	1.29	**49**	2.91	**118**	33.95	**137**
Cromer Rd	0.93	**7**	1.03	**16**	1.45	**52**	2.05	**90**

***Note**: Operational assessments are for 2037

Woodstock Rd/Bell Rd/Gore Ct Rd (Junction 58)*

	Without development				With development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
Bell Rd	0.97	**14**	0.64	**2**	0.99	**17**	0.64	**11**
Woodstock Rd	0.94	**9**	1.32	**117**	2.09	**537**	1.32	**537**
Park Ave	0.70	**2**	0.38	**0.6**	0.72	**2**	0.38	**2**
Gore Ct Rd	1.34	**87**	0.90	**6.8**	1.22	**64**	0.9	**146**

***Note**: Operational assessments are not provided in Appendix 5 of the TA Vol 7

6.43 A comparison of queue lengths without and with the proposed development shows very significant worsening of operational performance resulting from the proposed development. At the Woodstock Road entry to the Bell Road/Gore Court Road junction the queues increase in the AM peak from 9 vehicles to 537 vehicles and in the PM peak from 117 vehicles to 537 vehicles. The route is clearly unsuitable for the very significant increases in traffic flows that are predicted with the proposed development.

6.44 The extremely high delays on the Ruins Barn Road/Woodstock Road corridor are likely to lead to rat-running. The most likely route would be through the village of Borden.

There has been no assessment of the possible implications of traffic being displaced by long delays. The strategic model does not appear to include a link between the proposed development and Borden south of Sittingbourne (Tunstall Road/Hearts Delight Road). If this is the case, the model would be incapable of examining possible rat-running in this area.

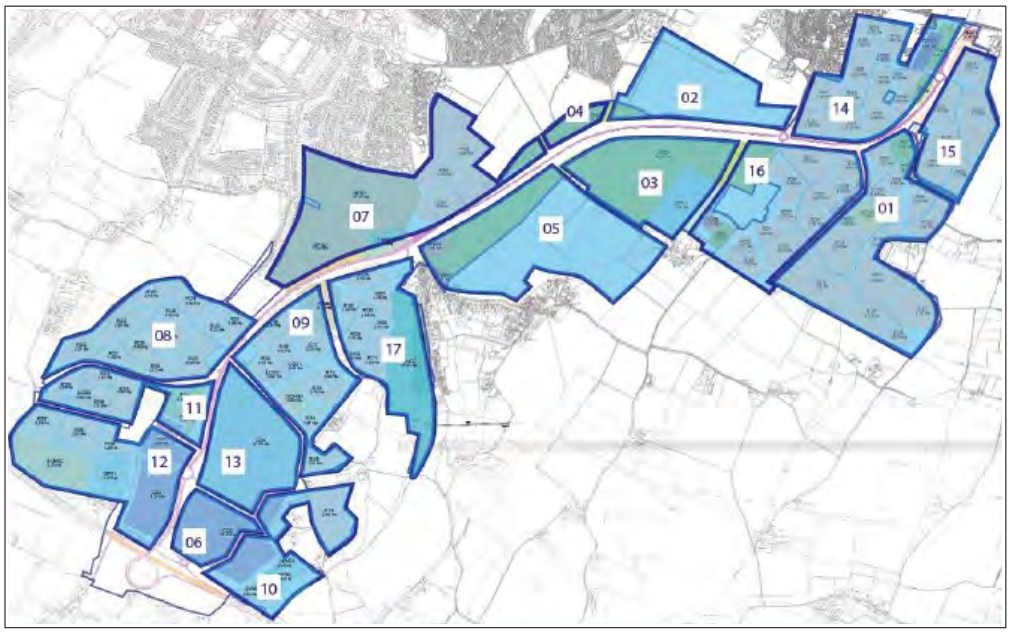
6.45 It should be noted that the operational assessments that are attached as Appendix 5 of the TA Vol. 7 have not all been updated from the previous 2037 situation to 2038. Despite this, many of the 2037 results have been transposed into the summary tables in the main text of the document and labelled as 2038. The results of the Woodstock Road/Bell Road/Gore Court Road assessments are missing from Appendix 5. These are serious omissions and errors and need to be addressed before the planning applications can be properly assessed.

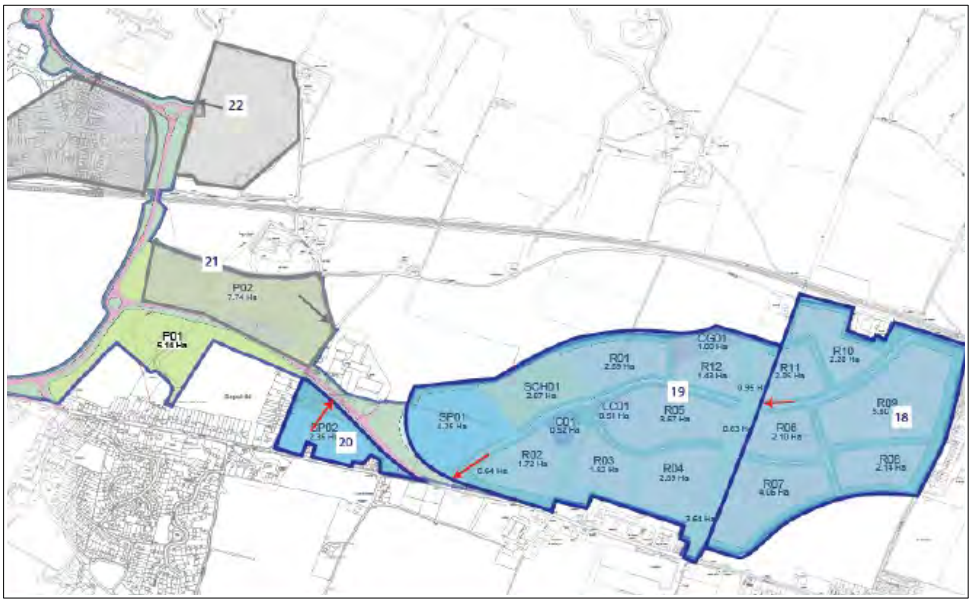
Trip Generation Assumptions

6.46 The Technical Note that is attached as Appendix B of the TA Volume 7 sets out the assumptions that have been used to calculate the number of generated trips and the modes by which those trips are undertaken.

6.47 The assumptions about how residents will travel within the proposed development are based on a matrix of movements between 22 development zones:

Plan 6.11: Development Zones





source: Figures 3.1 and 3.2 of Appendix B of TA Vol. 7

6.48 A review of the matrices of trip movements (Annex B of Trip Generation Assumptions Technical Note[17]) reveals the following:

- Table 3.14 predicts 4,810 external residential trips in the AM peak hour and 4,670 external residential trips in the PM Peak hour. Table 3.15 predicts 1,071 external employment trips in the AM peak hour and 775 external employment trips in the PM peak hour. Total external trips in the AM peak are therefore 5,881 and PM peak trips are 5,445. Although the applicant does not calculate the number of daily external trips generated by the proposals, an approximate number can be obtained by assuming that the peak hours typically constitute around 15% of daily flows. If 15% of daily flows is 11,326 (5,881+5,445), then daily external vehicle trips would be around 75,000 vehicle trips per day;

- Table 3.5 assigns all secondary school trips to Zone 12 (just north of M2 Junction) yet Table 3.6 allocates secondary school arrivals to Zone 15 (just south of A2 junction). The latest Parameter Plan for Oakwood Village (Drg. No. 2782-475P) shows the secondary school located south of the A2 but west of the SSRR in Zone 14;

- It has been assumed that 6% of residents will work from home and this percentage has been used to reduce movement within and between 'villages'. The application of this factor is, however, inappropriate since trips are based on trip rates that already allow for working from home. The methodology that has been used

17 Trip generation Assumptions Technical Note, C&A May 2021 (Appendix B of TA Vol7)

assumes that the level of working from home within the new development will be 6% higher than at present;

- Table 4.2 is a matrix of internal vehicle movements between zones. No equivalent matrices are provided for other modes of travel. Table 4.1 is an 'Example of Internal Sustainability Process – Employment'. No matrices for the other trip purposes are provided. If these were provided it would be possible to understand the predicted overall movements of people on foot, by bicycle and by public transport within the development;

- Table 4.8 indicates that Zone 1 generates a total of 625 external vehicle trips in the AM peak hour (464 from Zone 1 and 161 to Zone 1). Tables 3.16 - 3.19 indicate that Zone 1 generates 708 external trips by all modes in the AM peak hour. This suggests that it has been assumed that 13% of external trip will be made by modes other than the private car. Sittingbourne itself currently has a combined bus and bicycle mode share for journeys to work of 4.6% and Bapchild and Teynham have a combined bus and bicycle mode share of 2.4%[18]. Given the many barriers to cycling and bus use described above, the external non-car mode share assumptions appear overly optimistic;

- The Forecast Traffic Flow Diagrams in Appendix C of the TA Vol. 7 (for the Combined Site) shows 184 vehicle trips on the access road serving development on the Northern Site in the AM peak hour. In contrast, Appendix A of the TA Vol. 7 for the Northern Site shows 480 vehicle trips on the access road. Given that the quantum of development is at least similar, the discrepancy between these figures needs to be explained;

- The predicted traffic flow on the Northern Site access road (184 vehicle trips in the AM peak) represents a trip rate of around 0.15 per dwelling. This would suggest an internalisation of around 70% on the basis of a typical AM peak hour vehicle trip generation rate of 0.5 trips per dwelling. This level of internalisation cannot be correct. This discrepancy needs to be explained.

6.49 It is concluded that it is impossible to properly assess the methodology that has been used to calculate trip rates and mode shares and the information that is available contains a number of contradictions and errors.

18 See Nomis Table QS701W for E01024629 and E01024623 (Bapchild and Teynham) and for Sittingbourne Built Up Area

Base Traffic Flows

6.50 It is noted that base year traffic flows in Table 7.15 of the ES Main Text for the Combined Site do not agree with the base year traffic flows set out in the equivalent Table in the Northern Site ES Main Text document. Both sets of data are for 2017 (although the title of the Table for the Combined Site refers to 2016). This discrepancy needs to be explained.

6.51 A similar discrepancy is evident in the respective Tables 7.17 that purport to show 2038 Reference Case 18 hour flows. Again, this needs to be explained.

Impact on Highsted Road

6.52 Table 7.19 of the ES Main Text indicates that the proposed development will lead to an increase in 18 hour traffic flows on Highsted Road of 4,245 vehicles (+215%). The proposed access strategy is to close Highsted Road to general traffic so that it can be used for bus priority and cycle use. It appears that the modelling may not have allowed for this closure. Paragraph 5.5.3 of the Strategic Modelling Technical Note (Appendix A of the TA Vol. 7) states that a highway link to Highsted Road is modelled and Figure 5.3 of the Technical Note appears to confirm this.

6.53 If the traffic that is currently modelled using Highsted Road were to be diverted to alternative routes, it is possible that significant additional adverse impacts could arise.

6.54 The diagrams showing 2038 traffic flows without and with development attached as Appendix C of the TA Vol. 7 show no traffic on Highsted Road, no connection between Highsted Road and Swanstree Avenue to the north and no section of Highsted Road north of Swanstree Avenue. This is not consistent with the tabulated data that show a significant increase in traffic on Highsted Road.

6.55 The modelling needs to be amended to be consistent with the access strategy.

Failure to Assess Severance of SSRR

6.56 As described above, the SSRR serves as a barrier to movement between east and west parts of both Highsted Village and Oakwood Village and between proposed development north and south of the A2. Table 7.2 of the ES Main Text inserts ‘n/a’ in both the ‘nature of receptor’ and ‘receptor sensitivity’ boxes.

6.57 The fact that the development will be new does not make it immune to transport environmental effects. If the proposed school south of the A2 were currently present and the SSRR and SSRR/A2 junction were proposed, the impact on that school would likely be large adverse due to the sensitivity of the receptor, the very large increases in traffic flows and the barriers faced by those living to the east and north accessing the school on foot. By being 'blind' to impacts that would be suffered by those living and undertaking activities within the new development, adverse impacts risk being built in with no mitigation.

6.58 Further severance caused by the closure of existing rights of way as described above is also ignored in the ES.

Failure to Assess Impact of HGV Flows

6.59 It is likely that the SSRR will be used by significant flows of HGVs. These will pass through the centre of both Oakwood Village and Highsted Village and will add to the severance effects of the SSRR. No assessment has been made of the impact of these HGVs on those living in and moving around the proposed development and those who are currently using the local highway network to travel between Sittingbourne and settlements to the south and east.

6.60 Table 7.22 of the ES Main Text indicates that 18 hour HGV flows on the A2 through Teynham would rise from 1,247 in the base situation to 2,602 with development, an increase of 1,355 or 109%. The following table compares the change in HGVs through Teynham associated with the Northern Site with that associated with the Combined Site:

Table 6.2: HGVs on A2 through Teynham

	Northern Site		**Combined Site**	
	No.	**magnitude***	**No.**	**magnitude***
2038 Reference Case	1,260	moderate	1,247	great
2038 with Development	1,967	great	2,602	great
Change	+707 (+56%)		+1,355 (+109%)	

* see Tables 7.23 (Fear and Intimidation Indicators) in respective ES Main Texts

6.61 It is evident that although base HGV flows of HGVs are ***higher*** with just the Northern Site (1,260 compared with 1,247 for the Combined Site), the magnitude of impact is described as lower (moderate compared with great for the Combined Site). It is also evident from the Combined Site ES Main Text (Table 7.23) that road sections with lower

HGV flows than the A2 through Teynham (e.g. B2006 E of A249 with a daily flow of 1,932 HGVs) are ascribed an ***extreme*** magnitude of impact.

6.62 The methodology that has been applied to assess the impact of the change in HGV movements through Teynham with the Combined Site leads to ***no net change*** in the transport environmental impact of HGVs despite a 109% increase.

6.63 It is concluded that the assessment of the transport environmental impact of increases in HGV movements on the A2 through Teynham is inconsistent, incorrect and fails to identify very significant increases the implications of which are, as a result, overlooked.

Impact on A2 through Teynham

6.64 It has already been shown in paragraphs 5.50 to 5.57 that the Combined Site would lead to a significant worsening of severe predicted future congestion on the A2 through Teynham and elsewhere.

Impact on Ruins Barn Road Corridor

6.65 Table 7.19 of the ES Main Text shows a 101% increase in traffic on Ruins Barn Road resulting from the proposed development. The increase in traffic on Woodstock Road is shown as 56% although the absolute increase in daily vehicles is similar (+8,954 on Ruins Barn Road and +8,941 on Woodstock Road).

6.66 The magnitude of impact on Woodstock Road is identified as 'Low' (see Table 7.20 of ES Main Text) since the increase in shown to be in the range 30% - 60%. If the 2038 Reference flows presented for Woodstock Road (12,369 vehicles) are used as a basis for calculating change, then the percentage increases to +72% equivalent to a 'Medium' magnitude of impact. The discrepancies between the 2038 Reference Case models used for the Northern Site and the Combined Site therefore appear to have a significant impact on the conclusions that can be drawn from the figures.

6.67 Paragraph 7.160 of the ES Main Text states, '*On Ruins Barn Road, there will be a* [sic] *impact of moderate or large significance and on Highstead Road this impact will be slight or moderate. In both cases, the proposed development envisaged significant embedded mitigation that would see these routes subject to significant change, such appraisal against existing conditions is of less relevance*'. The 'embedded mitigation' on Ruins Barn Road comprises widening the road to 6.5m and providing a shared footway cycleway on its north-western side up to a point approximately 275m south of the Cromer

Road/Tunstall Road junction. No 'embedded mitigation' is proposed to the north of this point despite the ES showing significant adverse impacts along much of this corridor.

6.68 There are no existing dedicated cycle facilities that could be used by cyclists from the proposed development after they rejoin the main carriageway of Ruins Barn Road. The route is currently threatening to cyclists due to high vehicle flows, parked vehicles and numerous side roads and accesses. The situation will only be worsened by the very large increases in traffic flows generated by the proposed development.

6.69 Although the modelling work identifies very large increases in traffic flows on Woodstock Road and Woodstock Road feeds directly into Bell Road, predicted flows on Bell Road south show a ***decrease*** as a result of the proposed development:

Table 6.3: Predicted Changes in Traffic Flows on Woodstock Road and Bell Road South

	Woodstock Road	Bell Road South
2038 no development	16,076	15,643
2038 with development	25,017	14,279
change	8,941	-1,364
% change	+56%	-9%

Source: Table 7.19 of ES Main Text

6.70 If traffic flows on Woodstock Road are predicted to increase so significantly, and Woodstock Road connects directly with Bell Road south on the route into the town centre, it is difficult to understand why there would be a decrease in traffic on Bell Road south. It might be that the vast majority of additional traffic is being routed onto Gore Court Road but the same data source suggests indicates that the increase on Gore Court Road is +2,811, only around 30% of the increase on Woodstock Road.

6.71 The absence of any increase in traffic on Bell Road south as a result of the proposed development needs to be explained, particularly as Bell Road south has high sensitivity to changes in traffic flows due to the presence of a school and the hospital.

Transport Environmental Impacts during the Construction Phase

6.72 It is immediately obvious from reviewing the short section of the ES devoted to construction traffic that there has been no careful consideration given to the potential for adverse transport environmental impacts during the construction phase since the section in the ES Main Text is almost identical to the section dealing with construction of the

Northern Site. For the same words to be written for two entirely different developments that will impact on different parts of the highway network and affect different sensitive receptors in different ways over different timescales demonstrates the extreme blandness of the assessments.

6.73 The same conclusion is reached as that for the Northern Site proposals set out above; '*The failure to properly undertake an assessment of transport environmental impacts during construction is a serious flaw in the work*'.

7 SUMMARY AND CONCLUSION

Introduction

7.1 Railton TPC Ltd has been commissioned by local Parish Councils to review the latest transport work submitted in support of a planning application for up to 1,250 dwellings and other uses on Land West of Teynham (the Northern Site) (ref. 21/503906) and an application for this development in combination with a further development of up to 7,150 dwellings and other uses on Land to the Southern Site (ref 21/503914).

7.2 The author of the report is Bruce Bamber BSc MA MSc MCIHT, Director of Railton TPC Ltd. He has over 30 years of experience working as a transport planning professional.

General

7.3 An overview of the transport sustainability of the proposals concludes that they do not lend themselves to sustainable travel. The proposed development is ***dispersed*** and almost all of it lies beyond a reasonable walking distance of Sittingbourne town centre. Even within the new development itself, any new facilities will be accessible on foot to only a minority of new residents since the development stretches over around 6km.

7.4 Although cycling facilities could be provided within the new development, the overall level of use of bicycles is likely to be very low since Sittingbourne and the surrounding areas currently display very low levels of cycling. Existing local roads are generally narrow, congested and unsuitable to encourage new cyclists.

7.5 The development itself suffers from a significant severance effect caused by the busy Sittingbourne Southern Relief Road (SSRR). This bisects both Highsted Village and Oakwood Village and offers few crossing opportunities. The ‘built in’ severance of the SSRR has been ignored in the assessment of transport environmental effects.

7.6 The A2 presents a further severance for the proposed new development and this severance effect is significantly worsened by the proposed access arrangement for development north and south of the A2.

7.7 The development does not encourage bus use since the vast majority of the new housing and other uses would lie well beyond a reasonable walking distance of existing bus services on the A2 and any conceivable system of new bus routes would be unable

to provide the kind of fast and efficient services that could attract significant patronage and maintain commercial viability.

7.8 Travel by train to and from the proposed development would be constrained by the relative inaccessibility of both Teynham and Sittingbourne railway stations and the extremely limited potential to overcome Teynham station's very poor pedestrian accessibility, its lack of cycle parking, extremely limited parking facilities and no designated area for drop-off and pick-up.

7.9 Both developments have a fundamental reliance on additional highway infrastructure for private cars (and heavy vehicles). Indeed, a high capacity, high speed SSRR is necessary to justify the proposed new motorway junction. The prioritisation of vehicle movements not only undermines measures aimed at encouraging sustainable travel but is likely to lead to significant levels of induced traffic. Research undertaken for the Department for Transport suggests that, in general, every 10% of additional highway capacity leads to an uplift of 2% in traffic levels, over and above that predicted using conventional traffic models. A doubling of access to the M2 with the new junction would generate an additional 20% of traffic on this basis. This effect has not been considered.

7.10 Both Kent County Council Highway Authority (the Highway Authority) and National Highways (NH) have recommended holding objections on the basis of insufficient information. The applicant has responded to the majority of comments and concerns raised by the Highway Authority by drawing attention to the fact that the planning applications are outline with the implication that outstanding transport concerns could be resolved later in the planning process. The proposed new junction on the M2 serving the development is contrary to current NH policy. The applicant has yet to submit information to demonstrate how the proposals could be made policy compliant.

7.11 The applicant's refusal to commit to an access strategy and assess its acceptability raises numerous concerns. Without knowing where the new development will access onto the existing network it is impossible to reliably assess transport and transport environmental impacts. For a large and complex development that sits adjacent to congested, constrained and sensitive areas it is necessary to demonstrate that there exists an acceptable access strategy. To permit development before a safe and satisfactory access strategy has been identified risks permanent harm or a planning permission that is not implementable.

7.12 The work that has been undertaken fails to assess the impact of the proposed development on the new roundabout that is currently being constructed on the A2 west

of Teynham to provide access to the committed development of 298 dwellings on Land between Frognal Lane and Orchard View.

Concerns Relating to the Northern Site

7.13 There has been no assessment undertaken of the poor highway safety record on Lower Road, Teynham (an accident rate four to seven times the national average). Given that Lower Road is currently used as a rat-run for motorists seeking to avoid congestion on the A2 corridor and the predicted significant increases in traffic along the A2 east of the site, a reasonable conclusion would be that the proposed development will significantly ***increase*** traffic flows on Lower road and thus exacerbate the poor safety record.

7.14 The technical work suggests that traffic flows on Lower Road west of Teynham will reduce to zero as a result of the development. This prediction is contradicted by the proposed access strategy that maintains the Lomas Road/Lower Road corridor of vehicle movement and allows vehicles to join Lower Road from the new Bapchild Bypass.

7.15 The potential for adverse safety impacts on Lower Road is increased further by the aspiration to use Lower Road as a safe and convenient cycle route that allows cyclists east-west movement between Sittingbourne and Faversham without having to negotiate the heavy and fast moving traffic flows on the A2.

7.16 The proposed change in priority at the Lower Road/Frognal Lane junction risks leading to collisions between vehicles travelling east on Lower Road and vehicles travelling north on Frognal Lane and collisions between vehicles turning from east to south and pedestrians and cyclists using the proposed toucan crossing.

7.17 Teynham railway station is only accessible on foot to a very small proportion of the proposed development. Its accessibility by sustainable modes is poor and the scope for improvement appears very limited.

7.18 As part of the assessment of transport environmental impacts, both Lower Road and the A2 through Teynham are classified as having **Medium** sensitivity. Both links should be classified as having **High** sensitivity. Lower Road has a very poor accident record, it has very poor pedestrian facilities at Teynham Station and a lack of footways in other places. The A2 through Teynham is congested, it is an AQMA, cars park on footways and there are very limited safe pedestrian crossing facilities.

7.19 It is predicted that traffic flows on Lower Road west of Teynham will reduce to **zero** with development. This change cannot be explained since vehicle access to Lower Road will be maintained via both Lomas Road and via Hempstead Road.

7.20 The modelling work predicts that the proposed development will lead to a significant increase (around +30%) in traffic on the A2 through Teynham and further east. Despite this, the assessments suggest that the impact will be 'neutral or slight'. This conclusion is not justifiable since it does not reflect the sensitivity of Teynham to increased traffic flows.

7.21 The modelling work for the Northern Site identifies a very significant increase in HGV movements (+56%) on the A2 through Teynham and further east leading to permanent moderate to large adverse impacts. Despite this, no mitigation is proposed.

7.22 The A2 through Teynham is predicted to carry traffic flows that will lead to very severe congestion. The Northern Site is predicted to generate around 5,000 additional daily vehicle trips on the A2 through Teynham. This will cause the A2 to exceed its capacity.

7.23 The assessments of transport environmental effects during the construction phase of development is cursory and severely lacking. It provides no reassurance that the works and development will not lead to unacceptable impacts.

Concerns Relating to Combined Site

7.24 The labelling of the SSRR as a 'Sustainable Movement Corridor' is both inaccurate and misleading since its design is driven primarily by a need to accommodate large volumes of fast moving traffic.

7.25 Segregated pedestrian and cycle facilities are proposed in some locations along the SSRR but routes are dictated by the alignment of the SSRR whose design is driven by the need to prioritise vehicle movement.

7.26 The majority of junctions along the SSRR are proposed to be large roundabouts. These are highly dangerous and threatening to cyclists using the carriageways. Crossings on the arms of large roundabouts deter pedestrians and cyclists due to width of the carriageway and the speed of traffic.

7.27 The 'Green Bridge' is a misnomer since, rather than providing a convenient, safe and direct route for pedestrians and cyclists, is merely a widened overbridge serving on and off slip roads on the SSRR. Pedestrian and cyclists are not given priority and must give

way to traffic at various junctions incorporated into an overall design that is itself driven by the need for high vehicle capacity.

7.28 The only controlled crossing of the SSRR is proposed at the Highsted Road junction. This does not prioritise pedestrian and cycle movements as the crossing is staggered and would cause significant delays for these groups. The overall route for pedestrians and cyclists through the junction is convoluted, again because of the junction having been designed for vehicle capacity.

7.29 The proposed SSRR/A2 junction constitutes a significant barrier to north-south movements on foot and by bicycle and leads to the loss of the existing east-west pedestrian route along the A2. It would be extremely difficult for residents in the West of Teynham development to access the proposed school south of the A2 on foot.

7.30 The proposed SSRR is shown to sever three existing public rights of way (PROWs) linking existing settlement south of Sittingbourne to Swanstree Avenue and other facilities within Sittingbourne. There has been no assessment of the impact of this proposal.

7.31 The potential to improve a lamentable lack of permeability across the SSRR for pedestrian and cyclists is extremely limited and cannot overcome the proposed development's fundamental conflict with the principles of good urban design.

7.32 The proposed bus accessibility strategy is deficient since it requires multiple services to link dispersed parts of the proposed development to the town centre and to each other.

7.33 The proposed segregated bus route is inaccessible to those wishing to travel to and from areas to the south of the SSRR such as those on the western side of Oakwood Village and the eastern side of Highsted Village.

7.34 The form of the development makes an efficient, convenient and viable bus strategy impossible and this, in combination with substantial new capacity for general traffic, will make the development predominantly car dependent.

7.35 The work undertaken by the applicant shows that the proposed development will have an extremely severe impact on the Ruins Barn Road/Woodstock Road route. Future year queues and delays on this route are predicted to be severe. Since this is the only direct connection between the site and Sittingbourne, high levels of congestion could lead to displaced impacts, particularly through Borden.

7.36 Modelling shows the Combined Site to lead to a very significant increase in HGV movements (+109%) on the A2 through Teynham. Errors and inconsistencies in the ES have meant that the effects of this increase have been ignored.

7.37 The A2 through Teynham is predicted to carry traffic flows that will lead to very severe congestion. Combined Site is predicted to generate around 2,800 additional daily trips. The assessment work for the Combined Site indicates that the A2 would be operating far in excess of its capacity even before development traffic is added.

7.38 As with the work undertaken for the West of Teynham development, the assessments of transport environmental effects during the construction phase of development is cursory and severely lacking and provides no reassurance that the works and development will not lead to unacceptable impacts.

Overall Conclusion

7.39 It is currently impossible to assess the transport impact of the proposals since important background information, from which key results are drawn, is missing. There are also numerous discrepancies in the technical work that require clarification.

7.40 The overall transport design concept is fundamentally flawed since the organisation of the development around the SSRR and both north and south of the A2 leads to be severe community severance.

7.41 Movement by sustainable modes is constrained and deterred by the physical layout and location of the development, by the barrier effects of the SSRR and the A2 and by the deliberate provision of significant capacity for private cars, an essential requirement to justify the proposed new M2 junction.

7.42 The work that is available for scrutiny suggests that the proposed development will have significant adverse impacts on Lower Road, on the A2 through Teynham and on the Ruins Barn Road/Woodstock Road corridor into Sittingbourne. Further adverse impacts are likely in relation to the closure of public rights of way and on other areas such as Borden that could be used as rat-runs.

Discrepancies and issues that cannot be assessed because of a lack of supporting information:

7.43 The Transport Assessment (TA) relies on the Swale Transport Model (STM). It is not possible to review the assumptions that underlie this model since no Traffic Forecast Report, detailing assumptions and modelling parameters has been prepared.

7.44 There are over 1,500 committed dwellings in the vicinity of the site. From the information that has been submitted it is not possible to confirm whether or not all of these have been taken into account in the traffic modelling work.

7.45 Information provided in the Northern Site TA suggests that the two committed developments that are stated as having been allowed for, have been interchanged. This needs to be clarified.

7.46 The operational assessments for the signalised Highsted Road junction are not available for scrutiny.

7.47 The latest operational assessments appear to be a mix of 2037 and 2038 scenarios. These need to be consistently 2038 scenarios.

7.48 A predicted ***reduction*** in flows on Bell Road south resulting from the Combined Site appears inconsistent with a very substantial increase in traffic flows on Woodstock Road that feeds directly into Bell Road south. This needs to be explained.

7.49 It is impossible to assess the methodology that has been used to derive trip generation and mode share since the work contains contradictions and omissions.

7.50 Predicted traffic flows on the Northern Site access road provided in the two TAs do not agree. The discrepancy needs to be explained.

7.51 The Base traffic flows and predicted future Reference Case traffic flows used to assess transport environmental impacts of the Northern Site and Combined Site do not agree. This discrepancy needs to be explained.

7.52 The predicted impacts on Highsted Road need to be explained.