

Proposed Development at  
Thanington Without, Canterbury:  
Transport and Highways Review on  
behalf of Thanington Without Parish  
Council

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## Table of Contents

1. Introduction .....	1
2. Assumptions Underlying Technical Work.....	3
Traffic Growth .....	3
Trip Generation.....	4
Distribution and Assignment of Vehicle Trips .....	5
3. Traffic Modelling .....	7
Interpretation of VISSIM Modelling of Existing Situation.....	7
Interpretation of Results of 'With Development' Assessments.....	8
Modelling of Wincheap Roundabout.....	11
Modelling of Saturday Situation.....	12
4. Proposed Bus Access Strategy .....	14
5. Proposed Pedestrian and Cycle Access Strategy.....	16
6. Accident Record on the A28 Corridor .....	17
7. Timing of Proposed Mitigation .....	18
8. Environmental Assessment .....	19
9. Summary and Conclusion .....	20

## Figures

**Figure 1:** Observed Traffic Queues

## Appendices

**Appendix 1:** Census Travel to Work Data for Thanington and Martyrs Field Output Areas

**Appendix 2:** Calculation of Bus Revenue (revised)

## 1. INTRODUCTION

- 1.1. This report sets out a review of the transport and highways work that has been undertaken in support of proposed development on land at Thanington, Canterbury (Planning application ref. CA/15/01479). The work has been undertaken on behalf of the Thanington Without Parish Council.
- 1.2. The review is based on the information set out in the following documents:
  1. Transport Assessment: Thanington Park, Canterbury, Peter Brett Associates (PBA) June 2015 (project ref. 21227-5504 Rev D), prepared on behalf of Pentland Properties, subsequently referred to as the TA;
  2. Addendum to the Transport Assessment, PBA November 2015, subsequently referred to as the TA Addendum;
  3. Framework Travel Plan, Thanington Park, Canterbury, PBA, June 2015 (Project ref. 21227-5505 Rev D), subsequently referred to as the TP;
  4. Environmental Statement, Thanington Park, Canterbury, Wardell Armstrong, June 2015 (Report ref. ST14328/001), subsequently referred to as the ES;
  5. Sustainability Statement (Updated), Wardell Armstrong, October 2015;
  6. Highway Authority Response to Canterbury City Council (CCC), Kent County Council (KCC) Highway Authority, 04 December 2015;
  7. CCC Planning Committee Report, 05 January 2016;
  8. Highways England Responses 03 August 2015, 16 September 2015 and Formal Recommendation 11 December 2015;
- 1.3. Contact has been made with KCC Highway Authority to clarify the Highway Authority's current position on the application and contact has been made with CCC to explore the current position with regard to the design of the proposed new coast bound off-slip on the A2.
- 1.4. The TA (PBA, June 2015) assumed that a 600 space park and ride (P+R) would be provided on the site and all assessments were based on the traffic flows that would result from the presence of this facility. The modelling work also assumed that there would be no background traffic growth between the date of the traffic surveys (2014) and the assessment year (2022). Subsequent discussions with KCC Highway Authority led to the removal of the proposed P+R within the site, its replacement with a contribution towards the expansion of the existing Wincheap P+R and a commitment to making a contribution towards the construction of a coast bound A2 off-slip. As a result of these changes the TA Addendum sets out revised assessments that are based on an expanded Wincheap P+R and the presence of the new A2 slip road. It was also agreed that 8% traffic growth should be added to 2014 observed traffic flows to reflect growth to 2024, the future year for assessment.

1.5. This report focuses on a number of key issues:

- The acceptability of the assumptions that underlie the technical assessment work;
- The adequacy of the traffic modelling work and the interpretation of the results of this modelling;
- The assessment of the Saturday situation;
- The proposed bus access strategy;
- The proposed pedestrian and cycle access strategy;
- The accident record on the A28 corridor;
- The proposed timing of mitigation measures;
- The assessment of transport environmental impacts.

1.6. These issues are explored in the following sections. A summary and conclusion is set out in section 9.

## 2. ASSUMPTIONS UNDERLYING TECHNICAL WORK

- 2.1. The assumptions that have been used to identify trip generation, mode share, trip distribution and traffic growth are set out in the TA and the TA Addendum. A review of these assumptions reveals a number of areas of concern.

### Traffic Growth

- 2.2. The TA made it clear that it was considered unreasonable to add background traffic growth or any additional traffic associated with committed developments in order to derive a future year base situation. The justification for this assumption was stated as:

*'[...] It is noted that the traffic flows on the A28 corridor to the west of the A2 (blue) have not grown during recent years and have in fact steadily declined. With respect to the data to the east of the A2 it is evident that traffic flows have remained relatively constant during the previous 13 years with a modest peak during 2003 / 2004 and then a continuing decline thereafter.'* (TA, para. 9.4.2)

- 2.3. Over recent years it has been the case that traffic growth has been slow or, in some cases, traffic flows have declined as a result of the general economic slow-down. This does not mean that the trend will continue and it is clear that the traffic growth predictions derived from TEMPRO reflect the most recent expectations as to the direction and level of traffic growth. TEMPRO currently predicts growth of around 15% for the local area between 2014 and 2024.
- 2.4. It is clear from the graph presented in the TA that traffic levels have not 'stabilised' over recent years, but have declined in line with the more general economic slow-down. The graph shows that traffic levels on the A28 corridor east of the A2 have declined from a peak of 21,000 vehicles per day in 2003 to slightly less than 20,000 in 2014. This is a decline of around 5%. West of the A2 the decline has been from over 16,000 vehicles per day in 2007 to less than 13,500 in 2014. This represents a decrease of around 16%. It is therefore clear that the A28 corridor has previously carried traffic volumes significantly higher than at present and there is no reason to suppose that the corridor will not carry similar volumes in the future.
- 2.5. The 15% level of growth predicted by TEMPRO would not return traffic flows on the A28 west of the A2 back to their levels in 2007.
- 2.6. It is noted that the Highway Authority has requested that the impact of the proposed development be tested with an assumption of 8% growth from 2014 to 2014. This level of growth is only half of that necessary to return daily flows on the A28 west of the A2 to the levels observed in 2007.

- 2.7. On the basis of the above it is concluded that there is no evidence that demonstrates that it is reasonable to assume that there will be no background traffic growth between 2014 and 2024. Furthermore, the 8% 'sensitivity test' that has been undertaken at the request of the Highway Authority appears to be overly conservative and fails to reflect either the historic levels of traffic on the A28 corridor or the likelihood that background traffic levels will increase at a higher rate due to the recovery of the economy and the inevitable increase in trip origins and destinations in and around Canterbury.

### Trip Generation

- 2.8. The TA sets out trip generation rates derived from the TRICS database. The TA presents a further calculation of trip generation based on National Travel Survey (NTS) data for the local area. No base information is presented in the TA so it is not possible to check either the detailed methodology or the mathematical correctness of the calculations. Notwithstanding these concerns, NTS data is not a reliable source of information about trip generation in the form that is required to undertake transport assessment. The TA points out that the trip generation rates derived using NTS data are significantly lower than the rates derived from using data extracted from the TRICS database and concludes that this demonstrates that the rates derived from TRICS are robust (see para. 11.4.6 of TA). This statement has no credibility as NTS data are in no way either comparable with TRICS data in terms of what they show or reliable as a source of trip generation rates for new development such as that proposed at Thanington.
- 2.9. It is noted that no allowance has been made for the trip generation of the proposed primary school. This is unreasonable for two reasons. First, the school will employ a significant number of staff and a proportion of these staff will drive to and from work, adding new vehicle trips to the AM peak hour. Second, although it is stated that it is assumed that the school will serve only the site and the adjacent residential area (see para. 11.3.7) this will not be the case. National education policy positively encourages parental choice in education and this policy has recently been further strengthened by the statement that all schools will become academies. It is therefore inconceivable that there will not be movement of primary school children into the site from outside, and movement of primary school children from the site to other schools in the area. There should therefore be some allowance for this movement of pupils in the assessment that has been carried out.

## Distribution and Assignment of Vehicle Trips

- 2.10. Section 11.5 of the TA states that 2011 Census data have been used to identify the distribution of traffic and reports the results of this exercise. No background information is provided in the TA so it is not possible to check whether the work underlying the figures presented in the TA are robust.
- 2.11. The 2011 census data have been reviewed to obtain an estimate of the expected distribution of traffic originating within the proposed site. The data are attached as **Appendix 1**. Data have been obtained for the Thanington Super Output Area Mid Layer and the Martyrs Field Super Output Area Mid Layer. The former includes Thanington and the site but also includes the more rural area to the south-west. The latter includes the urban area immediately to the north-east of the site. Data have been extracted for each main mode of travel and for destinations within super output areas mid layer within Canterbury District and other districts.
- 2.12. The A2 slip roads at the next junctions to the south-east and north-west of the A28 junction are facing away from Canterbury so it would be expected that the vast majority of vehicle trips to destinations within Canterbury district will be via Wincheap and the centre of Canterbury (with the exceptions of trips to the Thanington and Martyrs Field areas). Trips to Thanet to the north-east are also more likely to route through Canterbury rather than undertaken a significantly longer journey via the A2 south-east.
- 2.13. The results of the analysis are summarised in the following table alongside the assumed distributions used in the TA:

*Table 2.1: Distribution of Car Trips (Home to Work): Percentage via Wincheap*

Transport Assessment	2011 Census Data for Super Output		
	Thanington	Martyrs Field	Average
32.8%-41.0%	46.9%	46.6%	46.8%

- 2.14. The table shows that the distribution adopted in the TA under-estimates the percentage of car trips that are likely to route via Wincheap by between 5.8% and 14%. In terms of numbers of trips these percentages represent between 21 and 57 car trips in the peak hours.
- 2.15. It is concluded that the assessments undertaken in the TA and TA Addendum underestimate the level of new car trips that are likely to use Wincheap to access

areas around Canterbury and therefore underestimate the adverse impacts of this additional traffic in terms of queues and delays.

- 2.16. It should be noted that the TA and TA Addendum also fail to present any source data underlying the calculation of the distribution of non-residential traffic movements. There is therefore the possibility that the non-residential elements of the development will also generate more new traffic movements on Wincheap, thus exacerbating the under-estimate of adverse impact on Wincheap.



### 3. TRAFFIC MODELLING

#### Interpretation of VISSIM Modelling of Existing Situation

- 3.1. Section 9.6 of the TA describes the output from the VISSIM model for the existing situation. It is stated that, '*Overall the baseline mode [sic] is considered to concur well with the situation observed on site and the traffic flow data that have been collected*' (para. 9.6.11 of the TA).
- 3.2. The traffic model is presented as a 'black box' and it is not possible, from the data available, to gain any understanding about what assumptions have been used to specify the way in which the model operates. It is not possible to assess whether aspects of the modelling such as assumed link capacities are robust, whether flows have been correctly input, whether flows have been input directly from observed flows during each surveyed period, whether there have been assumptions about a 'profile' of traffic movements during the modelled periods, what assumptions have been made about signal timings, whether allowance has been made for the use of pedestrian crossings and how queues on the side arms, particularly on the A2 off-slip have been handled in the model. The similarity of modelled queuing appears to observed queuing on the A28 is used in the TA to infer that the model is fit for the purpose of assessing the impact of development traffic and proposed changes to the highway network.
- 3.3. The TA reports observations of significant queuing at a number of key locations. In the AM peak hour significant queuing it observed at the following locations:
- Queues of over 50 vehicles on the A28 eastbound at the A2 London bound on-slip signals. This queue reaches back to beyond the point midway between the St Nicholas Road and Strangers Lane junctions;
  - A queue of up to 9 vehicles on the A28 westbound at the A2 London bound on-slip signals. This queue extends back to the A28/London bound on-slip signal junction;
  - Queues of up to 23 vehicles on the A2 London bound off-slip. This queue occupies almost half of the slip road and extends to the point at which it is proposed to introduce the new site access junction;
  - Queues of up to 15 vehicles on the A28 westbound at the A2 London bound on-slip signals. This queue extends back to the A2 coast bound on-slip junction;
  - Queues of up to 15 vehicles on the A28 westbound at the A2 coast bound on-slip junction. This queue extends back to the Homersham junction;
  - Queues of up to around 90 vehicles on the Rheims Way arm of the Wincheap roundabout;
  - Queues of up to 19 vehicles on the Wincheap arm of the Wincheap roundabout;
- 3.4. In the PM peak hour significant queuing it observed at the following locations:

- Queues of 50 vehicles on the A28 eastbound at the A2 London bound on-slip signals. This queue reaches back to beyond the point midway between the St Nicholas Road and Strangers Lane junctions;
- A queue of up to 9 vehicles on the A28 westbound at the A2 London bound on-slip signals. This queue extends back to the A28/London bound on-slip signal junction;
- Queues of up to 24 vehicles on the A2 London bound off-slip. This queue occupies almost half of the slip road and extends to the point at which it is proposed to introduce the new site access junction;
- Queues of 13 vehicles on Ten Perch Road at the A2 Coast bound on-slip junction. This queue extends back to the internal roundabout junction to the north;
- Queues of up to 20 vehicles on the A28 westbound at the A2 Coast bound on-slip signals. This queue extends back beyond the Homersham junction;
- Queues of up to around 55 vehicles on the Rheims Way arm of the Wincheap roundabout;
- Queues in excess of 45 vehicles throughout the PM peak hour on the A28 east arm of the Wincheap roundabout;
- Queues in excess of 15 vehicles throughout the PM peak period on the Wincheap arm of the Wincheap roundabout.

3.5. The above queue observations are summarised on the attached **Figure 1**.

3.6. The modelled area excludes the Wincheap roundabout. The reason for excluding this key junction from the modelled area is not explained in the TA or TA Addendum. The results of the 2014 surveys indicate that there are queues of up to between 15 and 19 vehicles on the Wincheap arm of the Wincheap roundabout in the peak hours. The queue observation for the PM peak hour indicates that the queue on Wincheap was never less than 15 vehicles during the entire duration of the PM peak hour. The omission of the junction from the modelled network will lead to unrepresentatively optimistic results since the queues on the Wincheap arm are very likely to have a significant detrimental impact on the operation of the A28 Wincheap corridor.

3.7. The TA at paragraph 7.2.6 states that, '*The traffic signal junctions at and around the A2 are highly sensitive to the way that queues form in the reservoirs between the stop lines.*' This fact appears to have been ignored in the TA Addendum and there has been no consideration of the implications of this sensitivity.

### Interpretation of Results of 'With Development' Assessments

3.8. The TA Addendum contains a summary of the most recent modelling work. The results that are presented in the TA Addendum are reproduced in the table below. The future

year situations are those that assume that there is 8% background growth along the A28 corridor since it is not considered reasonable to assume no background growth:

Table 3.1: Results of VISSIM Modelling: Journey Times along A28 Corridor

Scenario	AM Peak				PM Peak			
	eastbound		westbound		eastbound		westbound	
	min	max	min	max	min	max	min	max
2014 Base	05:24	14:46	04:48	05:04	06:40	08:41	04:53	04:59
2024 Base sensitivity	05:20	19:44	04:41	05:05	07:05	11:07	04:59	05:16
2024 with Dev no mitigation	07:26	27:57	05:01	05:26	07:45	17:12	07:23	08:11
2024 with Dev with mitigation*	07:26	27:57	05:01	05:26	07:45	17:12	07:23	08:11

\*mitigation includes new A2 coast bound off-slip and P+R extension

- 3.9. The journey times relate only to the length of the A28 between the Milton Manor roundabout (west) to a point just beyond Simmonds Road (east). This section of the A28 has a length of 2.66km (1.65 miles).
- 3.10. The conclusion of the section presenting the results of the modelling work in the TA Addendum states that, '*the VISSIM modelling demonstrates that the Thanington signals would continue to operate in a scenario that includes development traffic and / or a sensitivity assumption of 8% background growth*' (TA Addendum, para. 5.9.1). This statement is meaningless since it says nothing about whether the signals will operate within capacity or without unacceptable queues.
- 3.11. The conclusion goes on to state that, '*In each scenario the reconfigured London bound off slip can be managed via signal timings to avoid queues forming that would interfere with operation of the A2 mainline*' (TA Addendum, para. 5.9.2). This follows a complete absence of any information relating to the modelled queues on the London bound off-slip in the preceding text and no information to suggest that any test has been made of the ability to manage queues in this way, or to identify whether such management would have a detrimental impact on the A28 corridor. The queue observations reported in the TA indicate that the A2 off-slip signals currently experience queues of over 20 vehicles in both AM and PM peak hours. The proposed development is predicted to increase traffic flows arriving at the A28/A2 off-slip signals by 222 vehicles in the AM peak hour and 205 vehicles in the PM peak hour. These represent increases of 36.2% and 49.5% in the AM and PM peak hours respectively. Given that 2014 Base flows lead to queues that extend almost half the length of the existing slip road it would be expected that the

TA Addendum would have dealt with the issue of traffic queuing back towards the A2 in some detail. However, the issue is dismissed by the statement:

*'... [the management of signal timings] will be subject to further detailed design discussions with Highways England during the detailed design process.'* (TA Addendum, para. 5.9.2)

3.12. This is an issue that should not be left to the detailed design process since it is of fundamental importance in identifying the acceptability of the scheme. The implication is that it will be possible to adjust green times at the A28/A2 slip road signals to prioritise movement from the A2 off-slip onto the A28. This will have the effect of increasing queues and delays along the A28 corridor and potentially increasing the adverse impacts of queuing between signals and in the reservoirs between stop-lines. No modelling of the potential adverse impacts of adjusting signal timing to avoid queuing back onto the A2 has been reported. The need to avoid traffic queuing back onto the A2 for safety reasons will make it very hard, if not impossible, to optimise the coordination of signals along the A28 corridor (as suggested in para. 5.9.4 of the TA Addendum, final bullet point) and is likely to lead to additional adverse impacts along the A28 corridor in terms of queues and delays.

3.13. The summary in the TA Addendum goes on:

*'The eastbound journey time from Milton Manor to Wincheap roundabout would increase during the morning peak through the addition of development traffic and / or background traffic growth.'* (TA Addendum, para. 5.9.3)

3.14. Again, the summary is almost meaningless since no effort has been made to quantify the level of increase in queues and delays resulting from the modelling exercise. The modelling shows that maximum journey times increase from 14:46 to 27:57 in the eastbound direction between 2014 and 2024. The proposed A2 southbound off-slip and P+R expansion are shown to have no effect on this increase in journey time. A journey time of 27:57 represents an average speed of 3.5mph over the modelled section of the A28. The effect of traffic growth and the proposed development is to almost double the journey time along the A28 into Canterbury from the Milton Manor roundabout compared with the 2014 situation. This increase makes no allowance for increased delays at the Wincheap roundabout or any changes in signal timings to avoid excessive queues on the A2 off-slip.

3.15. It is noted that Ten Perch Road currently experiences queues extending back to the internal roundabout junction during the PM peak hour. The new A2 off-slip and the P+R extension are predicted to generate an additional 312 vehicles approaching the A28/Ten

Perch Road junction during the PM peak hour. This represents an increase of 46.9% over and above the 2024 sensitivity Base flows or an increase of 50.1% compared with 2014 Base flows. Given that the approach to the junction from the north is currently operating at or close to capacity in the PM peak hour, this very significant increase in traffic flows is very likely to lead to significant queues and delays on this arm. No work has been undertaken to predict the extent of this queuing and to assess whether the capacity constraint at the junction raises the possibility of traffic queuing back onto the A2 from the proposed new slip road. It is noted that the distance between the A2 bridge over the river Stour and the existing Ten Perch Road/The Boundary roundabout is 200m. This is significantly less than the length of the existing northbound off-slip. Any scheme for a new off-slip that includes a widening of the A2 over the river will incur significant additional costs. There is no indication that the level of contribution offered towards the new slip road would cover any such widening.

- 3.16. A request has been made to CCC for information about the design of the new slip road but the response has been that there is no scheme currently available within the public domain. Given the central importance ascribed to the delivery of the new A2 slip road and the clear indications that the Ten Perch Road junction is currently operating close to or at capacity during the PM peak hour it is a serious omission that there is currently no certainty as to whether the slip road can be delivered with the proposed contribution and whether any such scheme could operate without leading to serious safety implications for the A2.
- 3.17. Overall, in relation to the modelling work it is concluded that the TA and TA Addendum are severely lacking in that they provide very little key information about the assumptions that have been made in undertaking the work, they fail to consider the impact of increased congestion at the Wincheap roundabout and the implications of possible essential manipulation of signal timings at the A28/A2 off-slip on the operation of the A28 corridor, they fail to assess the implications of the proposed new slip road and P+R extension on traffic queuing on Ten Perch Road and back towards the A2 from the north, the conclusions that are drawn from the work are bland to the extent being meaningless and the overall conclusion that the development will not have a severe impact appears to be inconsistent with the very significant increases in journey times predicted in an eastbound direction during the AM peak hour.

### Modelling of Wincheap Roundabout

- 3.18. The modelling of the Wincheap roundabout reported in section 10.4 of the TA entirely fails to present a robust and reliable representation of the operation of this junction. The

failure of the modelling of this junction is both simultaneously acknowledged and dismissed in the TA and it is concluded that the modelling, *'does nevertheless demonstrate that the roundabout junction would operate with sufficient capacity if it were a stand alone junction'* (para. 10.4.9 of TA). This statement cannot be justified since it is clear that the junction does not operate as a 'stand alone' junction.

- 3.19. Given the highly sensitive nature of this junction and the fact that it currently operates over capacity in both peak hours, the failure to present any reliable modelling of the junction is considered a major omission from the assessments. As stated above, the junction has also been omitted from the subsequent VISSIM work that is reported in the TA Addendum. Again, this does not appear to be justifiable, given the fact that the junction lies on the only route between the development and the city.
- 3.20. The section of Wincheap between the Wincheap roundabout and Homersham is a conservation area. By definition, this makes the route more sensitive than 'typical' radial routes providing access to town and city centres. In environmental terms the impact of increased congestion in conservation areas is greater than in other areas. This fact is not acknowledged in the TA, TA Addendum or ES. This issue is discussed further below.

### Modelling of Saturday Situation

- 3.21. The TA Addendum states that no detailed assessment of the impact has been undertaken for the Saturday situation because the traffic flows along the A28 corridor during the weekday peak hours are similar to those along the corridor during the Saturday peak period (section 6.2 of TA Addendum). The graphs presented in the TA Addendum show that west of the A2 Saturday eastbound flows are slightly lower than the weekday AM peak flows but higher than weekday PM peak flows. Saturday westbound flows are higher than weekday AM peak flows but slightly lower than PM peak flows. Combined 2-way Saturday flows are shown to be higher than weekday AM peak flows and similar to weekday PM peak flows. East of the A2, eastbound Saturday flows are higher than both weekday AM and PM peak flows and westbound Saturday flows are higher than weekday AM peak flows but slightly lower than weekday PM peak flows. In terms of 2-way flows, Saturday flows are higher than both weekday AM and PM flows. Furthermore, the Saturday flows remain higher than both weekday AM and PM peak flows for 5-6 hours of the day. The TA Addendum combines flows both east and west of the A2 to derive a combined graph. The text states that the peak Saturday flows are less than the weekday PM flows although it is clear from the graph that this is

not the case. The justification for not undertaking a Saturday assessment is not therefore valid.

3.22. The approach adopted in the TA Addendum is also not acceptable since it ignores the fact that turning movements at junctions on the A28 may well be very different during the Saturday period compared with the weekday peak period. In particular, the vehicle movements into and out of Ten Perch Road are likely to be significantly higher on Saturdays, due to the presence of a significant amount of retail development accessed via Ten Perch Road. Movements on Ten Perch Road will be increased further by the presence of the proposed new slip road and the P+R extension. Given that queues are already observed on Ten Perch Road during the weekday situation, and the critical importance of the new slip road and P+R extension as forms of mitigation for the proposed development, the failure to consider, in detail, the Saturday situation is considered a serious failure of the work.

#### 4. PROPOSED BUS ACCESS STRATEGY

- 4.1. It is proposed to make a contribution towards the provision of a bus service for the proposed development. A calculation of the expected change in revenue stream set against the costs of bus provision is set out in paras. 7.2.3 to 7.2.9 of the TA Addendum. The TA Addendum is quite correct when it states that, '*It is important that a proposed stand-alone bus service is viable in its own right*' (TA Addendum, para. 7.2.3). If this is not the case, the service is likely to cease once subsidy has been removed, the development will have very poor bus accessibility and those who rely upon the bus service will be severely disadvantaged.
- 4.2. The level of bus patronage that is assumed for the purposes of the calculation is 9.3%. This figure is based on work presented in section 14.2 of the TA. The figure of 9.3% relates to a situation where a large P+R site is located within the development thus allowing residents and those working in the development to benefit from a 10 minute bus headway. The removal of the P+R from the site will mean that the frequency of bus service will be reduced. The TA Addendum identified a 20 minute headway. The work presented in the TA identifies an average bus mode share of 7.3% with a headway of 20 minutes. This is based on an existing mode share of 5.1% with an uplift due to an increase in bus frequency. In reality the proposed development will have a bus frequency of 3 per hour (assuming this can be achieved) which is similar to the existing frequency of buses in the Thanington estate in the AM peak hour and slightly higher for the rest of the day. The graph presented in the TA indicates that the bus mode share for a bus frequency of 3 per hour is less than 5%. No source census data are presented in the TA in support of this base mode share. The data attached as **Appendix 1** suggests that the existing bus mode share for the Thanington area is 3.1% and for the Martyrs Field area 5.6%. An average of these two areas gives a baseline bus mode share of 4.4%. This corresponds closely with the level of bus patronage predicted using the graph presented in the TA and is considered the most robust basis for calculating potential bus revenues.
- 4.3. The calculation of bus revenue set out in the TA Addendum also applies an average national bus mode share of 7% that is used to calculate annual numbers of bus journeys. This figure needs to be adjusted downwards to reflect the fact that the bus mode share at the Thanington site will be lower than the national average.
- 4.4. **Appendix 2** contains a revised calculation of bus revenues based on the most likely bus mode share of 4.4%. The total annual revenue is calculated as £187,664. This is not sufficient to support two buses and is likely to lead to a reduction in level of service



to one bus (a headway of 40 minutes) which will, in turn, lead to a reduction in revenue with a further potential knock-on effect in terms of making even the one bus unviable.

- 4.5. The TA Addendum assumes that a bus is able to make a round trip into Canterbury and back in 40 minutes. This is based on *existing* journey times along the A28. The output from the modelling exercise shows that at peak times it could take almost 30 minutes for a bus to travel between the site and a point west of the Wincheap roundabout. It is therefore very unlikely that a bus service could provide the level of service in the peak hours required to achieve the assumed level of patronage.
- 4.6. It is concluded that the proposed bus service is both financially unviable in the longer term and the assumed level of service with the provision of two buses is unachievable, particularly during peak periods. The bus access strategy has not been properly revised since the removal of the P+R site from the development and even if it were, the site offers little opportunity to introduce a long term bus service between the site and the centre of the city.

## 5. PROPOSED PEDESTRIAN AND CYCLE ACCESS STRATEGY

- 5.1. The proposed pedestrian and cycle access strategy relies heavily on the improvement of the farmer's underpass. Without this link all residents and workers on the site who cross the A2 will have to do so either via the existing Thanington estate or the existing narrow and 'blind' alleyway that connects the eastern end of Cockerling Road with the western side of the A28/A2 junction. This latter route, although more direct, presents issues with personal security and accessibility due to its restricted width. No improvement to this alleyway is proposed despite it being a key route between a major development and a large number of key destinations.
- 5.2. The pedestrian route along the A28 is both unpleasant, being immediately adjacent to a very busy road and inconvenient in that to reach the centre of Canterbury it is necessary to cross at least three major signalised junctions and numerous uncontrolled junctions.
- 5.3. The route via the farmer's underpass avoids most busy roads and crossings and offers an opportunity to reach the local primary school and the nearest railway station more directly. However, it is proposed to complete the improvements to the A2 underpass only after the occupation of the 200<sup>th</sup> dwelling. Given the key role that this route plays in achieving pedestrian and cycle connectivity with the city and local destinations, this delay in provision is entirely unacceptable.

## 6. ACCIDENT RECORD ON THE A28 CORRIDOR

- 6.1. The accident record along the A28 corridor is reviewed in section 8 of the TA. It is noted that 8 personal injury road traffic accidents (PIAs) have been recorded over a 5 year period at the Ten Perch Road/A28 junction. These are listed and the report concludes that, *'It is evident that the crashes above are generally caused by poor driver (or pedestrian) discipline at the traffic signals'* (TA, para. 8.3.4). The author of the TA has both over-generalised in his conclusion and clearly misunderstands the nature of PIA data. It is not possible to imply causation from the level of information provided on each incident. In all cases there are several identifiable contributory factors associated with the PIA. The author has made no attempt to identify common contributory factors and has instead made a general assumption about driver or pedestrian error.
- 6.2. A cluster of PIAs such as this may indicate serious safety issues with the configuration or operation of the signalised junction and it is possible that the changes in traffic flows associated with the proposed development and the new A2 slip road and P+R will exacerbate these problems. No attempt has been made to undertake this analysis at this junction which not only displays what appears to be a poor safety record but is likely to experience very significant changes in traffic flows as a result of the proposed development.

## 7. TIMING OF PROPOSED MITIGATION

- 7.1. The proposed timing of mitigation measures and other commitments is set out in Table 8-1 of the TA Addendum. It has already been stated that it is unacceptable to delay the improvement of the farmer's underpass until the occupation of the 200<sup>th</sup> dwelling.
- 7.2. It is noted that the contribution towards the new A2 slip road is proposed by the 450<sup>th</sup> occupation. At present it is not known whether the slip road can be delivered, what implications it will have on the operation of the A28 corridor and what the cost of the scheme will be. It is not, therefore possible, either to state whether the proposed level of contribution will be sufficient to bring the scheme forward or whether the scheme will be feasible in any case. There appears to be a risk that 450 dwellings could be occupied on the site without any new slip road being constructed. Given that the new slip road constitutes the main 'benefit' that is set against the adverse impacts of the additional traffic associated with the proposed development it is not acceptable to proceed with the development until there is a reasonable level of certainty that the new slip road is achievable and that its cost can be met from available funding sources (not necessarily only from the proposed development). This certainty does not appear to have been achieved at this stage.

## 8. ENVIRONMENTAL ASSESSMENT

- 8.1. The transport chapter of the Environmental Statement comprises a summary of the Transport Assessment. This approach is not acceptable since it fails to present a proper assessment of the potential transport environmental impacts. The Institute of Environmental Assessment's, '*Guidelines for the Environmental Assessment of Road Traffic*' identifies a number of categories of potential impact including pedestrian amenity, severance, pedestrian safety and pedestrian delay. The process of environmental assessment requires the identification of those most likely to suffer adverse impacts as a result of changes in road traffic i.e. 'sensitive receptors'. No sensitive receptors such as schools, community centres, children's playgrounds, GP's surgeries, churches or roads with sub-standard footways are identified, the potential adverse impacts on these receptors are not assessed and there is no consideration given to changes in light and heavy vehicle flows on sensitive links on a daily basis during *both* construction and operational phases of development. The environmental impact during construction has the potential to be significant since heavy vehicles will be drawn through the existing Thanington residential area (the proposed site access from the A2 slip road is currently only required before the first occupation of the site so it will not be available for the bulk of HGV movements during site preparation, groundworks and the initial phase of construction).
- 8.2. The presence of the conservation area along Wincheap increases the need to undertake detailed assessments of the potential adverse transport environmental impacts of the proposed development since the conservation area is, by definition, more sensitive than other roads.
- 8.3. It is concluded that the approach that has been adopted towards the assessment of transport environmental impacts is severely lacking and fails to recognise the fact that the process of transport assessment is not the same as the process of assessing transport environmental impact.

## 9. SUMMARY AND CONCLUSION

- 9.1. This report sets out a review of the transport and highways work that has been undertaken in support of proposed development on land at Thanington, Canterbury (Planning application ref. CA/15/01479). The work has been undertaken on behalf of the Thanington Without Parish Council.
- 9.2. The review is based on the information that is available in the public domain. Contact has been made with KCC Highway Authority to clarify the Highway Authority's current position on the application and contact has been made with CCC to explore the current position with regard to the design of the proposed new coast bound off-slip on the A2.
- 9.3. A review of the assumptions underlying the assessment of the transport impact of the proposed development has identified a number of areas of concern. The applicant maintains that no traffic growth should be assumed along the A28 up to 2024 although a sensitivity assessment has been undertaken on the basis of 8% growth at the request of the Highway Authority. Historic data show that traffic flows along the A28 in the vicinity of the development have been up to 16% higher than existing flows and it is quite reasonable to assume that traffic levels will return to historic levels with the recovery of the economy and other development in the area. The assessments that have been undertaken may therefore underestimate the amount of background traffic growth that may occur between now and 2024.
- 9.4. No allowance has been made in the assessments for vehicle movement associated with staff at the proposed primary school or parents bringing children to the school from outside the development. The trip generation of the development has therefore been underestimated.
- 9.5. No supporting data are provided to show how the vehicle distribution has been calculated. A review of 2011 census data suggests that amount of development traffic that uses the A28 corridor between the site and the city centre may have been underestimated by between 5.8% and 14.0%. The adverse impact of the proposed development has therefore also been underestimated.
- 9.6. The modelling of the impact of the proposed development has been undertaken using a VISSIM model. Little detail is provided on the assumptions that have been used to set up and run this model. The model area excludes the Wincheap roundabout and this is a serious weakness since the junction has a significant effect on the operation of the corridor as a whole. The results of the modelling work indicate that journey times into Canterbury could be almost doubled during the AM peak hour as a result of

the development. The proposed new slip road and P+R extension have no ameliorating impact on these increased delays. The work reports no information on queuing on either the existing A2 off-slip or the proposed A2 off-slip, both of which will experience very significant increases in vehicle flows as a result of the development or associated mitigation. The highly sensitive nature of these slip roads and the need to avoid queuing back onto the A2 mainline may require modifications to the signal timings at the A28 junctions that will increase queues and delays along the A28 corridor. No assessment of these potential impacts is reported.

- 9.7. The modelling of the Wincheap roundabout is severely lacking and no reliable assessment of the potential impact of the proposed development on this junction is provided.
- 9.8. No modelling of the Saturday situation is undertaken. This is a serious failure since the evidence shows that traffic flows on Saturdays are higher than those on weekdays and, more importantly, the pattern of vehicle movements on Saturdays will be significantly different with the likelihood of higher flows on Ten Perch Road that provides access to the large retail area as well as receiving additional traffic from the proposed new slip road and the P+R extension.
- 9.9. The proposed bus access strategy is mathematically incorrect since no amendment has been applied to reflect the removal of the P+R site from the development and the associated reduction in bus frequency. A revised assessment of bus revenue shows that it will not be financially viable to support two buses and there is further doubt as to whether any bus service would be viable between the site and the city centre in the future. The bus access strategy is therefore unlikely to be successful and could lead to a situation where those who rely on the bus service are severely disadvantaged.
- 9.10. The proposed pedestrian and cycle access strategy is unacceptable since the improvement of the farmer's underpass, that constitutes the key pedestrian and cycle route between the site and local destinations, will not be provided until the occupation of the 200<sup>th</sup> dwelling. This improvement should be undertaken before the first occupation.
- 9.11. The analysis of the accident record along the A28 fails to properly assess the cluster of accidents at the A28/Ten Perch Road junction and the potential increase highway risk with the predicted significant changes in traffic flows at this junction.
- 9.12. It appears that 450 dwellings could be occupied on the site before any contribution towards the new A2 off-slip is made. At present there is no certainty that the new slip road scheme is feasible and the proximity of the A2 bridge over the river Stour

suggests that there is a significant risk that the cost of the slip road may be significantly higher than initially assumed. There is therefore significant uncertainty surrounding the feasibility and deliverability of the new slip road. Given the critical importance of this scheme to off-set the proposed development's adverse impacts it is currently premature to progress the proposed development.

- 9.13. The assessment of transport environmental effects is severely lacking and is not in accord with relevant guidance. This failure is exacerbated by the fact that Wincheap falls within a conservation area between the Wincheap roundabout and Homersham.
- 9.14. Overall it is concluded that the transport supporting work contains serious errors, omissions and weaknesses in terms of traffic modelling, the proposed bus access strategy, the timing of the improvement of the farmer's underpass and the transport environmental assessment. On the evidence that is available it appears likely that the proposed development will lead to severe adverse impacts in terms of queues and delays, highway safety and adverse impacts on vulnerable road users.