1.0 Introduction

1.1 This Note considers the second response prepared by Highways England (HE) on the application for 1,250 houses with primary school, local centre and care facilities on land at Pump Farm and Bloors Farm, Lower Rainham. A copy of the response is included in **Appendix A**. The main points from the response are set out below.

2.0 Base Traffic Volumes and Growth

Highways England Comments

- Further request for details of TEMPRO growth factors.
- Concern that junction 2 may also be impacted.

DTA Response

2.1 The forecast increase in traffic on the strategic road network is quantified in the TA and in our previous response. These are replicated in **Table 1** below.

Table 1 – Forecast Impact on the Strategic Road Network

Junction	%	Link	AM Peak		PM Peak	
			Arrivals	Departures	Arrivals	Departures
J1	16.9%	Westbound on slip	7		30	
		Eastbound off slip		26		14
J3	15.8%	Northbound off slip		25		13
		Southbound on slip	6		28	
J4	16.8%	Eastbound on slip		2		1
		Westbound off slip	0		2	
		Westbound on slip		25		13
		Eastbound off slip	6		30	

2.2 The above traffic forecasts show the proposed impact will be a maximum of 2 vehicles per minute on any given approach which cannot be considered to be material in the context of the operation of the motorway junctions.

2.3 Regardless of the level of base traffic or background growth on the strategic road network, the information set out in **Table 1** provides an indication of the forecast traffic on the strategic network.

2.4 It is unlikely that Junction 2 of the M2 will be impacted as the main destinations would preclude the use of this junction. This is shown in the snapshot images below which show the quickest route to Maidstone (south) and Dartford (east) there would be no requirement for vehicles to use junction 2. The same route will be followed for destinations further afield.

Image 1 – Route from The Site to Maidstone

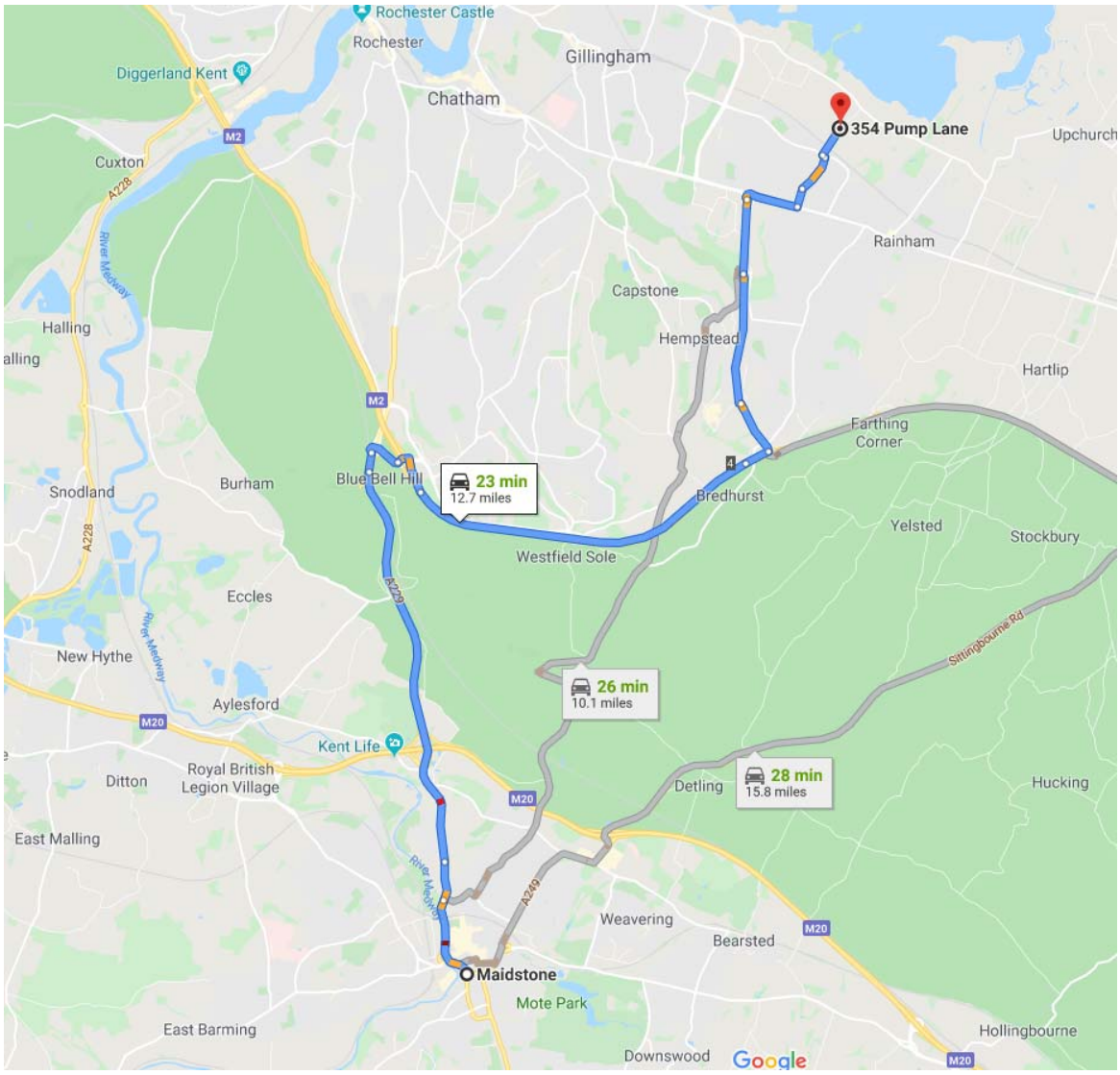
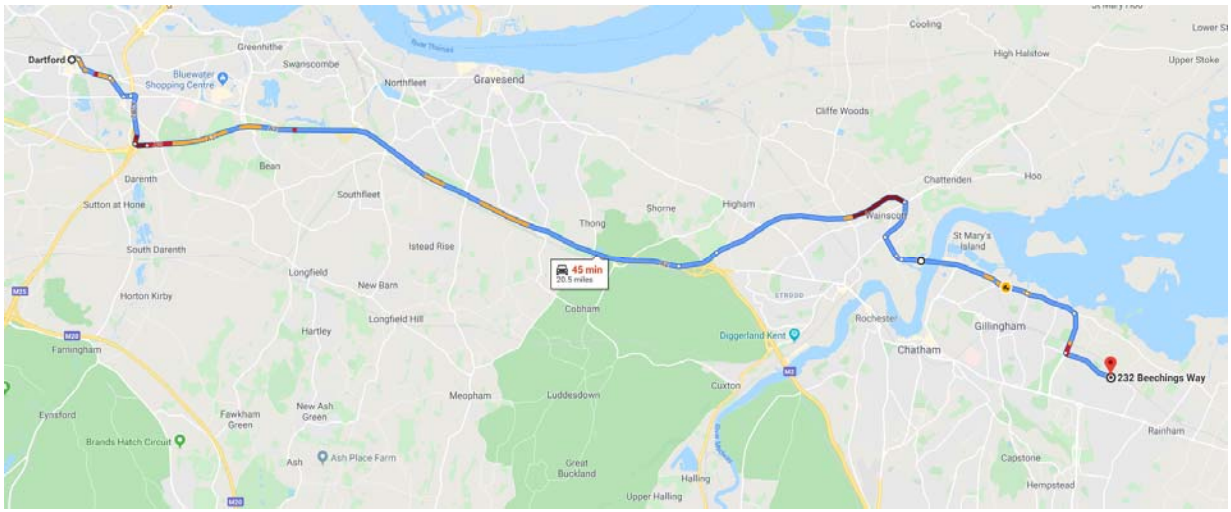


Image 2 - Route from The Site to Dartford



3.0 Committed Developments

Highways England Comments

- Further request for TEMPRO output.
- Confirmation requested from Medway on list of committed developments.

DTA Response

3.1 The TEMPRO parameters for the strategic road network were provided in the previous response. For completeness these are set out in **Table 2** for the trunk road for car driver on urban roads. These have been derived using TEMPRO7.2 and the NTM AF15 Dataset.

Table 2 – TEMPRO growth factors (Medway 018)

2019-2029	Urban Trunk Roads
AM Peak	1.1156
PM Peak	1.1185

3.2 The TEMPRO dataset has recently been updated to provide forecasts to a future year of 2050 (RTF 2018 Scenario 1 – Reference). Applying the same factors using this dataset

shows a slight reduction in growth on the trunk road network to around 10.5%.

3.3 Medway Council have confirmed in a meeting on 28th October 2019 that the list of committed developments in the TA are appropriate.

4.0 Development Trip Generation

Highways England Comments

- Concern with higher proportion of commuting trips 07:00-08:00 from NTS data and request for sensitivity test.
- Request for mode share data for output area Medway 018.
- Concern in the use of Census data for the site and proximity to bus services.

DTA Response

4.1 The peak hour of 07:00-08:00 has been reviewed. The same methodology has been applied for deriving commuting and business trips during this peak period based on the trip rates in the TA. The person and vehicle trips are shown in **Table 3** below. These are higher than total trips in the AM peak (08:00-09:00) and comparable to the number of trips in the PM peak (17:00-18:00).

Table 3 – Person Trip Rates

07:00-08:00	Arrivals	Departures	Totals
Person Trip Rates	0.123	0.467	0.590
Person Trips	154	584	738
56% NTS	86	327	413
67% Mode Share	58	219	277

4.2 Based on the same trip distribution as included in the TA, the impact of trips at the various motorway junctions is shown in **Table 4**.

Table 4 – Forecast Strategic Network Impact 07:00-08:00

Junction	%	Link	AM Peak (07:00-08:00)	
			Arrivals	Departures
J1	16.9%	Westbound on slip	10	
		Eastbound off slip		37
J3	15.8%	Northbound off slip		35
		Southbound on slip	9	
J4	16.8%	Eastbound on slip		2
		Westbound off slip	1	
		Westbound on slip		35
		Eastbound off slip	9	

4.3 The number of trips on any given link during the pre-AM peak are comparable to the forecast number of trips on the strategic network during the PM peak (**Table 1**). There will be a maximum of 37 movements per hour on a given link which cannot be considered material in the context of the operation of the strategic network.

4.4 The mode share data for Medway 018 is set out in the submitted TA and replicated below in **Table 5** below.

Table 5 – Mode Share Journey to Work Data (Medway 018)

Mode Share (excluding work from home)								
Under-ground	Train	bus	car driver	car passen ger	Motor-cycle	bicycle	on foot	other
0.1%	4.4%	6.2%	67.0%	6.8%	1.2%	2.2%	11.5%	0.6%

4.5 The strategy for improving bus services to the site is included in section 4.5 of the submitted Transport Assessment. It is proposed to provide bus services through the site. Therefore, bus services will be available within walking distances of residents and the site will share similar characteristics in respect of accessibility to the existing settlement.

5.0 Development Trip Distribution

Highways England Comments

- Agree use of Medway 018 is acceptable for determining distribution.
- Concern with potential of impact at junction 2.
- Further information on the locations of local Medway work destinations.

DTA Response

5.1 As set out above it is unlikely that there will be an impact at junction 2. In any event, if a proportion of journeys take this route this will only reduce the overall impact at other locations.

5.2 The internal areas referred in Appendix B of the previous response are located adjacent to the site. The super output areas are included in the appendix and are shown in the images below. Trips have been assigned accordingly to these areas on the local network.

Image 3 – Medway 018

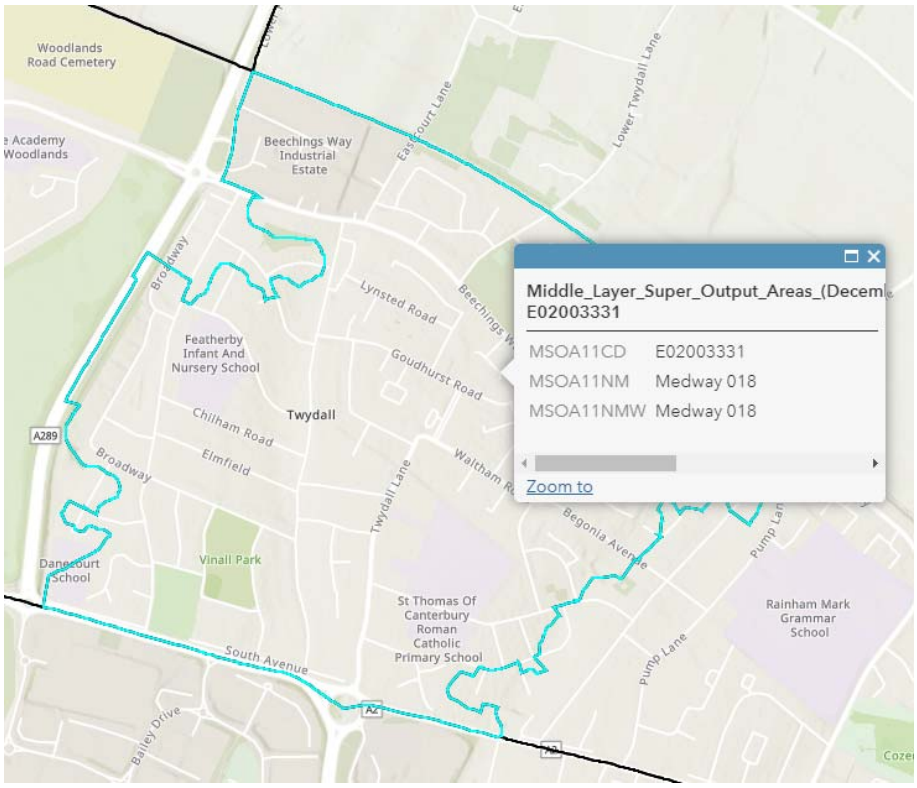


Image 4 – Medway 023

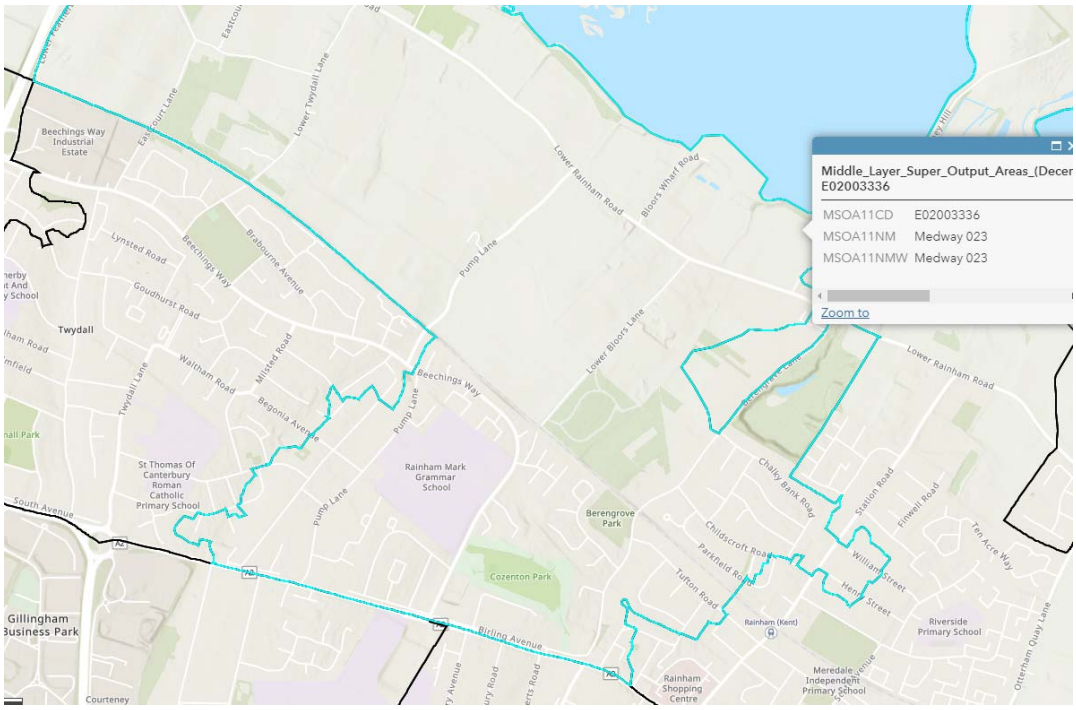
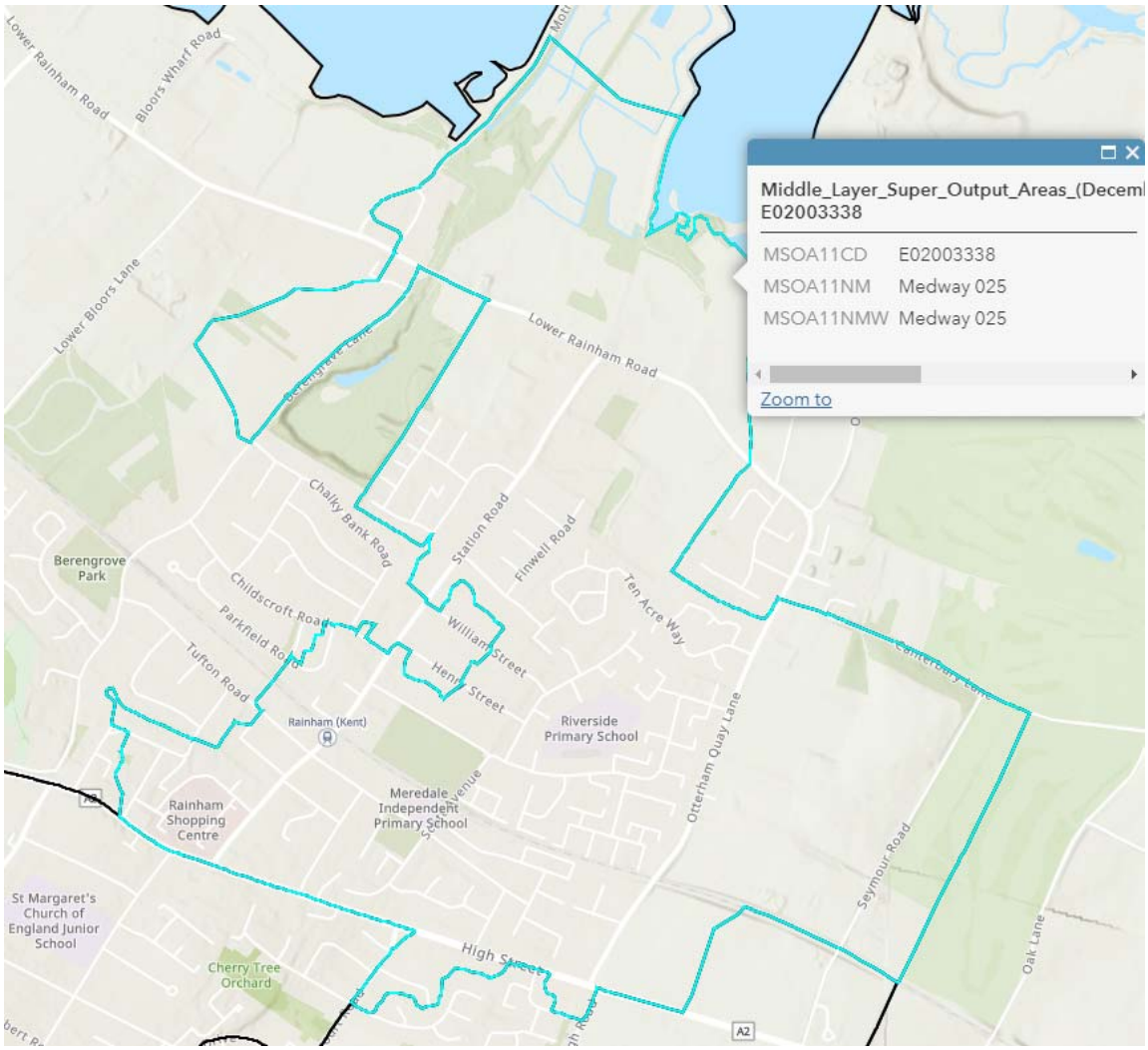


Image 5 – Medway 025



6.0 Modelling

Highways England Response

- Concern no modelling of the SRN has been undertaken.
- Once the other issues have been addressed, HE will in a better position to understand where SRN modelling may be required.
- It may be appropriate to consider the proposals within the Medway Local Plan Traffic Modelling. However, this is still under development.

DTA Response

6.1 The forecast number of trips on the strategic network have been quantified using an appropriate methodology. HE have requested considerable additional information which has been provided by DTA. Based on the forecast traffic impact on the strategic road network, which is modest, it is not considered junction modelling is warranted.

6.2 Medway have undertaken their own modelling on the surrounding network using their AIMSUN model which includes the strategic road network (Subnetwork 1). They have confirmed that only subnetworks 2, 3 and 7 experience any material change on flows and therefore the strategic road network is not affected.

Appendix A

Jacqueline Aggiss

From:	Bowie, David <David.Bowie@highwaysengland.co.uk>
Sent:	31 October 2019 11:38
To:	gunner, hannah; planning.representations@medway.gov.uk
Cc:	Planning SE; Bradley, Alistair; Jenkins, Daniel; Bown, Kevin; Jacqueline Aggiss; Simon Tucker; Michael.Birch@rapleys.com; Duncan.Parr@rapleys.com
Subject:	MC/19/1566 - Land Off Pump Lane, Rainham, Kent, ME8 7TJ. FAO Hannah Gunner
Follow Up Flag:	Follow up
Flag Status:	Completed

For the Attention of: Hannah Gunner, Medway Council

Planning Application No.: MC/19/1566

Site: Land Off Pump Lane, Rainham, Kent, ME8 7TJ

Development: residential development comprising approximately 1,250 residential units, a local centre, a village green, a two-form entry primary school, a 60-bed extra care facility, an 80-bed care home and associated access (vehicular, pedestrian, cycle).

Highways England's Ref: 85118 #8020

Dear Hannah,

Further to our response to the above application dated 17 July 2019, we have received a response directly from the applicant's agent on 20 August 2019, which was also copied to Medway Council Planning.

Highways England ("we") have been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and are the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such works to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

We will be concerned with proposals that have the potential to impact on the safe and efficient operation of the SRN. In this case our interest relates to the M2, and potentially the A2, A249 and M20.

We understand that the proposal/site is **not** in the Medway Local Plan 2003.

The emerging Medway Local Plan for 2018 to 2037 is still being developed with the publication of the draft plan due in December 2019. It is not clear if the site will be part of the new emerging Medway Local Plan for 2018 to 2035.

We have therefore assessed the site on the following basis in accordance with NPPF, C2/13 and the Highways England guidance on working with applicants.

Previously, we reviewed the following document related to this application and responded on 17 July 2019:

- David Tucker Associates, 21 March 2019, *Land at Pump Farm and Bloors Farm, Lower Rainham, Final Transport Assessment* ("the TA").

In this response, we review the following document:

- David Tucker Associates, 14 August 2019, *Land at Pump Farm and Bloors Farm, Lower Rainham, Response to Highways England* ("the August 2019 submission").

Review of the August 2019 Submission

I summarise our 17 July response to the TA below, followed by the relevant content of the August 2019 submission; followed by our response to the August 2019 submission.

Site Access

We are content that the site does not have and will not require *direct* access onto the SRN.

Base traffic volumes and growth

We previously commented as follows:

- The TA has no details of base traffic data for the SRN;
- TEMPRO growth factors have only been determined for urban roads, not strategic roads,
- TEMPRO output needs to be provided so we can verify if the selection parameters are accurate.
- For base and future traffic volumes on the SRN, use of the Medway Local Plan Traffic Modelling may be appropriate. This is still under development; please see further comments below under "Modelling".

The August 2019 submission addresses this as follows:

- The TA included forecast development traffic on the SRN at junctions 1, 3 and 4 of the M2.
- The "*impact of the proposals on base traffic levels on the M2 will be indiscernible*".
- The DfT website provided base flow data on the M2 within the vicinity of junctions 2, 3 and 4 shows an annual average daily flow of in the region of 70,000 and 100,000 vehicles.
- If TEMPRO factors are applied this will reduce the percentage impact of development traffic.
- "*On the basis of the forecast traffic impact on the SRN, full modelling of individual junctions is not warranted, and therefore TEMPRO factors are not necessary*".
- For completeness, 10-year growth factors for Medway 018 (selecting urban and trunk roads) are 1.1156 for the AM peak and 1.1185 for the PM peak.

In response, we comment as follows:

- As noted further below in this response, for various reasons we cannot yet be confident that the "*impact of the proposals on base traffic levels on the M2 will be indiscernible".*
- ***Furthermore, junction 2 may be impacted also.***
- ***See comments below regarding TEMPRO also.***
- If we reach agreement on the other parameters of this assessment, it should be noted that ***a reduced percentage impact of the development traffic, due to background traffic growth, is not necessarily an acceptable argument against further assessment.*** Where there is exiting congestion, a small proportional impact can make a large difference, as a small volume of traffic would consume a large proportion of any available capacity (if any capacity is available).
- ***Our previous comments therefore still apply.***

Committed developments

We previously commented as follows:

- We requested that Medway Council confirm, or otherwise, that the list of committed developments in Paragraph 6.1.3 of the TA is complete and that the stated development types and quantums are correct?
- As noted above, we need some details of the TEMPRO growth for the SRN in order to determine their accuracy and also then to assess the validity of the point in paragraphs 6.1.4 and 6.1.5 of the TA, i.e. the assertion that no account needs to be made of the committed development traffic because TEMPRO growth already accounts for a greater level of growth.
- Also, as noted above, use of the Medway Local Plan Traffic Modelling may be appropriate once agreed and finalised with the council.

The August 2019 submission addresses this as follows:

- A response is awaited from Medway Council in respect of the TA which will confirm the position in respect of committed development.
- Within the TA, the committed development sites were reviewed within the immediate vicinity and total around 900 dwellings. The extent of additional housing growth included within TEMPRO for

Medway is for 11,380 households. This is significantly higher than the committed development quantum and therefore no further uplift is required.

In response, we comment as follows:

- We agree with the general principle that TEMPRO growth can subsume committed development traffic. ***However, in this particular case we cannot be certain that this applies until we review the TEMPRO output (as previously requested), so we can verify if the selection parameters are accurate, in particular the study area extent (and potentially other parameters). Also, the growth factors for SRN and urban roads separately should be provided.***
- ***As before, we also request confirmation from Medway Council that the list of committed developments in Paragraph 6.1.3 of the TA is complete and that the stated development types and quantums are correct.***

Development trip generation

We previously commented as follows:

- The residential trip generation is determined in the TA by:
  - TRICS *person* trip rates; National Travel Survey (NTS) data to determine percentages of AM and PM peak trip for each purpose; Census 2011 Journey to Work Statistics for Middle Super Output Area Medway 018, to determine mode share for each journey purpose separately.
  - A degree of internalisation is applied to the residential trips, as described in section 5.9 and the resulting external residential trips are then summarised in Table 31.
- The care facilities trip generation is determined in the TA by TRICS vehicle trip rates.
- We requested the NTS data and Census 2011 Journey to Work Statistics, to verify the quoted percentages.
- The NTS data in Table 17 (journey purpose splits) could vary across locations.
- We requested details of the geographical extent of the Middle Super Output Area Medway 018, used to determine mode share. If this includes locations with much better access to non-car transport than the proposal site, then this could be under-estimating the probable car mode share of the proposal.
- Use of TRICS *vehicle* trip rates, with careful selection of TRICS sites based on similar characteristics to the proposal site, may be more accurate and should at least be used for comparison. These similar characteristics should include on- and off-street parking provision; non-car transport provision; local population, vehicle ownership, location type, as well as the age of the surveys and sample sizes.

The August 2019 submission addresses this as follows:

- NTS data and Census 2011 Journey-to-Work data are provided in Appendix B of the August 2019 submission.
- NTS data is "*based on national figures and no equivalent dataset is available for specific regions*".
- The development trips on the SRN are limited to commuting and business trips on the basis that trips associated with other trip purposes will be local to the site.
- The numbers of commuting and business trips are summarised in the August 2019 submission in the table under paragraph 4.2 (which is also Table 47 of the TA). These are determined from the data in Appendix B, which also includes assessment of traffic distribution.
- The extent of the MSOA for Medway 018 is illustrated in Image 1 in the August 2019 submission. "*The area included is immediately adjacent to the proposed site and includes the built up residential area immediately to the south*".

In response, we comment as follows:

- We have reviewed the NTS 0502 data in Appendix B of the August 2019 submission and checked it against the Table 17 of the TA. While the combined proportions of commuting and business trips are correctly recorded in Table 17 for the periods 8 to 9am (24%) and 5 to 6pm (37%), these may not necessarily be the peak hours on the SRN. The period 7 to 8am could feasibly be very busy also; and in this period, the NTS data show that combined proportions of commuting and business trips are 56%, i.e. over twice as much. Therefore, application of this methodology could more than double the number of development trips per hour during critical AM peak period.
- As mentioned before, there is also the additional concern that the NTS data are national averages, not local. While this could of course mean that this data source is *over*-estimating impact, it may

also be under-estimating the impact and we need to consider the potential worst-case scenario. While we need to be reasonable, it must also be considered that there is existing congestion at various M2 junctions and the proposal is not in the Local Plan; therefore, we need to be particularly careful to assess the impact more thoroughly.

- ***Regarding both points related to the NTS data, sensitivity testing would be appropriate in this instance, or the use of a different data source as we suggested in our previous response.***
- ***We also previously requested the Census 2011 Journey to Work Statistics for Middle Super Output Area Medway 018, which was used in the TA to determine mode share for each journey purpose separately. Appendix B does not include this; it only includes the directional data for the traffic distribution assessment. <u>This request is still outstanding</u>.***
- The geographical extent of the Middle Super Output Area Medway 018 includes streets served by several bus services. Many homes in this area would have a bus stop within a very short distance, served by several bus routes, whereas residents of the proposed site would have to walk much further. This could make a real difference to mode shares and therefore, as commented previously, this methodology could be under-estimating the probable car mode share of the proposal. ***In order to verify the use of this data source for mode share, we would recommend that funding of a bus service within close proximity to most houses of the development (ideally 400 metres, in line with planning guidance) could be secured through a S106 Agreement, in the event that this development is approved in future.***
- ***Overall, we cannot yet agree to the stated trip generation of the TA.***

Development trip distribution

Different methodologies are applied for different journey purposes. The majority of trips in the critical AM peak are for commuting, business, escorted education and education.

Secondary education trips have been distributed according to the locations of nearby schools and assumed splits between them.

Primary school pupil and staff trips have been distributed according to 2011 Census journey to work data for the Middle Super Output Area (MSOA) of Medway 018.

The commuting and business vehicle trips have also been distributed based on the 2011 Census journey to work data for the Middle Super Output Area (MSOA) of Medway 018.

We previously commented on the above as follows:

- We requested the Census 2011 Journey to Work Statistics, to verify the quoted percentages.
- We requested details of the geographical extent of the Middle Super Output Area Medway 018, as this could have quite varied distribution in reality.
- We said that, on receipt of the above information, we will review the distribution further. We will also check that the methodology does not double-count the reduction in trips due to internalisation (as noted under “Development trip generation” above).

The August 2019 submission responds as follows:

- Census 2011 Journey to Work Statistics are provided in Appendix B.
- The geographical extent of the Middle Super Output Area Medway 018 is shown in Image 1.
- The numbers of commuting and business trips are summarised in the August 2019 submission in the table under paragraph 4.2 (which is also Table 47 of the TA). These are determined from the data in Appendix B of the August 2019 submission.

In response, we comment as follows:

- We agree that the geographical extent of the Middle Super Output Area Medway 018 is acceptable for determination of trip distribution (although we have raised concerns above regarding its use for trip *generation*).
- ***We have the following queries regarding the distribution of commuting / business trips in the peak:***
    - ***While the use of Census 2011 Journey to Work directional percentages is reasonable, it is likely that traffic commuting to destinations to the west may use either Junction 2 or Junction 1; we will consider the potential worst case for each junction in in our assessment of potential impacts.***

- ***Regarding the internal Medway locations in Appendix B, we ask that the applicant's agent provide a map of these locations, so that we can assess the accuracy of this methodology.***

- Upon receipt of the above requested information, we will complete our review of the development trip distribution, based on this information.

Modelling

We previously responded as follows:

- No modelling of the SRN has been undertaken; the TA states that this is not considered necessary because the "*the impact on any single link will be a maximum of 30 trips during the peak hour*".
- Please refer back to our above comments on various aspects of the TA's methodology. When these are addressed, we will be in a better position to understand whether or not SRN modelling may be required.
- We need to consider the cumulative impact with committed developments and/or background traffic growth too.
- There is existing congestion at various M2 junctions. Also, the proposal is not in the Local Plan and we therefore need to be particularly careful to assess the impact more thoroughly.
- It may be appropriate to consider this proposal within the Medway Local Plan Traffic Modelling. This is still under development, and Highways England are involved in this process.
- The number of additional trips at a junction is more important than the additional trips on a *link*, due to the interaction of links at a junction.

The August 2019 submission does not address this, and instead maintains that, based on the forecast additional traffic onto the M2, a detailed assessment of the SRN is not warranted.

In response, re-iterate that we have outstanding concerns regarding the methodology of the assessment; and therefore, our previous comments on modelling still apply.

Mitigation

We will consider the need, if any, for mitigation measures when the above comments and queries have been addressed and we are in a position to understand fully the potential SRN impacts.

We may also comment on construction traffic impact, if appropriate, which could be addressed by a construction traffic management plan.

Summary and Conclusions

Overall, we have reviewed the TA and the August 2019 submission and note that the development has the potential to result in a significant amount of AM and PM peak hour trips. However, there is not yet a definite indication of the impact upon the SRN and we therefore cannot determine if the proposal will materially affect the safety, reliability and / or operation of the SRN (the tests set out in DfT Circular 02/13, particularly paragraphs 9 & 10, and DCLG NPPF, particularly para 109).

Please note that this email does not constitute a formal recommendation from Highways England. We will provide a formal recommendation when we can be confident that the application is in its final form. In the meantime, we would ask that **the planning authority does not determine the application** (other than a refusal), ahead of us receiving and responding to the required/requested information. In the event that the authority wishes to permit the application before this point, we would ask the authority to inform us so that we can provide substantive response based on the position at that known time**.**

Finally, I note that a Technical Note has been upload to the councils planning portal on the 21st October which is dated the 17 October 2019, I will now consider its contents and advise further if the matters raised above have not been addressed. You will note that I have also copied our response to the applicant's agent and transport advisors. If they or you have any queries, please contact us at planningse@highwaysengland.co.uk.

Kind regards,

David
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