

TRANSPORT ASSESSMENT ADDENDUM



SYSTRA

CASTLE POINT PLAN

TRANSPORT ASSESSMENT ADDENDUM

IDENTIFICATION TABLE

Client/Project owner	Castle Point Borough Council
Project	Castle Point Plan
Study	Transport Assessment Addendum
Type of document	Final Report
Date	22/08/2025
Reference number	GB01T23H92
Number of pages	45

APPROVAL

Version	Name		Position	Date	Modifications
1	Author	Tom Hodgson	Consultant	14/08/2025	Draft for Comment
	Checked by	Adam Hogg / Hazel Morton	Associate / Associate Director	20/08/2025	
	Approved by	Hazel Morton	Associate Director	20/08/2025	
2	Author	Tom Hodgson	Consultant	22/08/2025	Final for Issue
	Checked by	Hazel Morton	Associate Director	22/08/2025	
	Approved by	Hazel Morton	Associate Director	22/08/2025	

TABLE OF CONTENTS

1.	INTRODUCTION	5
2.	STRATEGIC MODELLING	6
2.1	CHANGES TO THE 2043 “WITH DEVELOPMENT” SCENARIO MODELS	6
2.2	FLOW DIFFERENCE	6
2.3	VOLUME/CAPACITY	9
2.4	QUEUE LENGTH	13
2.5	SUMMARY	17
3.	UPDATED LOCAL MODEL TESTING	19
3.2	LONDON ROAD/HIGH STREET JUNCTION	19
3.3	LONDON ROAD/NEW ROAD	21
3.4	SCRUB LANE/ RECTORY ROAD/NEW ROAD	24
3.5	RUSHBOTTOM LANE/LONDON ROAD/HIGH ROAD	26
3.6	LONDON ROAD/KENTS HILL ROAD/KENTS HILL ROAD NORTH	28
3.7	NORTHWICK CORNER ROUNDABOUT	31
3.8	LONG ROAD/FURTHERWICK ROAD/OAK ROAD	33
3.9	RAYLEIGH ROAD/LONDON ROAD/BENFLEET ROAD/KILN ROAD	36
4.	ECC LOCAL TRANSPORT PLAN 4	39
4.1	ROLE OF ECC’S LOCAL TRANSPORT PLAN 4 (LTP4) – “A BETTER CONNECTED ESSEX” (PUBLISHED FOR CONSULTATION 31 JULY 2025)	39
5.	EXPANDED BUS STRATEGY	41
6.	SUMMARY & CONCLUSION	44

LIST OF FIGURES

Figure 1.	Benfleet / Hadleigh Flow Difference AM Peak	7
Figure 2.	Canvey Flow Difference AM Peak	7
Figure 3.	Benfleet / Hadleigh Flow Difference PM Peak	8
Figure 4.	Canvey Flow Difference PM Peak	8
Figure 5.	Volume/Capacity Benfleet & Hadleigh BAU AM	9
Figure 6.	Volume/Capacity Benfleet & Hadleigh Sustainable AM	10
Figure 7.	Volume/Capacity Benfleet & Hadleigh BAU PM	11
Figure 8.	Volume/Capacity Benfleet & Hadleigh Sustainable PM	11
Figure 9.	Volume/Capacity Canvey Island BAU AM	12
Figure 10.	Volume/Capacity Canvey Island Sustainable AM Scenario	12
Figure 11.	Volume/Capacity Canvey Island BAU PM Scenario	13
Figure 12.	Volume/Capacity Canvey Island Sustainable PM Scenario	13
Figure 13.	Queue Length Benfleet & Hadleigh BAU AM Scenario	14
Figure 14.	Queue Length Benfleet & Hadleigh Sustainable AM Scenario	14
Figure 15.	Queue Length Benfleet & Hadleigh BAU PM Scenario	15
Figure 16.	Queue Length Benfleet & Hadleigh Sustainable PM Scenario	15
Figure 17.	Queue Length Canvey Island BAU AM Scenario	16
Figure 18.	Queue Length Canvey Island Sustainable AM Scenario	16
Figure 19.	Queue Length Canvey Island BAU PM scenario	17
Figure 20.	Queue Length Canvey Island Sustainable PM scenario	17
Figure 21.	London Road/High Street Existing Junction Layout	20
Figure 22.	London Road/New Road Existing Layout	22
Figure 23.	Rectory Road/Scrub Lane/New Road Existing Layout	24
Figure 24.	Rushbottom Lane/London Road/High Road Existing Layout	27
Figure 25.	London Road/Kents Hill Road/Kents Hill Road North Existing Junction Layout	29
Figure 26.	Northwick Corner Roundabout Existing Junction Layout	31
Figure 27.	Long Road/Furtherwick Road/Oak Road Existing Layout	34
Figure 28.	Rayleigh Road/London Road/Benfleet Road/Kiln Road Existing Layout	36

LIST OF TABLES

Table 1.	London Road / Rectory Road Model Results	20
Table 2.	London Road/New Road Model Results	22
Table 3.	Rectory Road/Scrub Lane/New Road Model Results	24
Table 4.	Rushbottom Lane/London Road/High Road Model Results	27
Table 5.	London Road/Kents Hill Road/Kents Hill Road North Model Results	29
Table 6.	Northwick Corner Roundabout Model Results	32
Table 7.	Long Road/Furtherwick Road/Oak Road Model Results	34
Table 8.	Rayleigh Road/London Road/Benfleet Road/Kiln Road Model Results	36

1. INTRODUCTION

- 1.1.1 SYSTRA has been appointed by Castle Point Borough Council (CPBC) to prepare a Transport Assessment (TA) as part of the evidence base to support the Castle Point Plan (CPP).
- 1.1.2 The TA has been prepared to identify and appraise the local transport context within Castle Point, and to assess the expected transport impacts which will be associated with the development proposed as part of the CPP.
- 1.1.3 As has been noted in that document, at the time of publication certain work was ongoing with regards to the “broad locations” for development identified within the Regulation 19 CPP document, principally around the proposals for the West Canvey broad allocation site. Further strategic and local highway modelling has now been undertaken to reflect the expected quantum and type of development proposed at this location, and the outcomes of this modelling work are therefore presented in this TA Addendum.
- 1.1.4 The TA Addendum also provides some additional details of the transport mitigation package which will be required for West Canvey, and proposals to enhance the bus strategy across Castle Point more widely in order to strengthen provision of alternatives to car travel and to reduce the impacts of existing and expected congestion on the local road network. A concise assessment of the relevant area-based strategies for South Essex as set out in the current consultation documents for Essex CC’s Local Transport Plan 4 has also been included, as these have become available subsequent to the publication of the main TA report.

2. STRATEGIC MODELLING

2.1 Changes to the 2043 “With Development” Scenario Models

- 2.1.1 As has been described in the main TA report, four “broad locations” for residential and mixed use development are proposed as allocations in addition to the specific urban capacity sites. These sites and their capacities and other relevant site information are described at Section 6.3 of the main TA report.
- 2.1.2 The strategic models previously did not include the full scale of development now proposed at the broad location sites. This has now been addressed, with the full proposed quantum of development in each case matched to one or more corresponding model zones.
- 2.1.3 Specifically with regard to the West Canvey broad location, it is recognised that this redevelopment will introduce a substantially higher number of new dwellings in a more dense configuration than is expected at the other broad location and allocation sites. The existing employment floorspace is to be retained but will be heavily condensed and large areas currently taken up by surface car parking will be redeveloped, with consolidation of car parking provision for employment uses as a result.
- 2.1.4 As such, a specific trip generation exercise has been undertaken for the West Canvey broad allocation site which seeks to recognise these “inherent” qualities – high density residential provision with a variety of on-site and nearby services and relatively low parking provision for residential uses. This has resulted in car trip rates associated with the West Canvey site being lower than those assumed for other Local Plan sites. For avoidance of doubt, this calculation does not make assumptions around additional mitigation measures (such as localised highway improvements, measures already identified in the Schedule of Interventions, and improvements to public transport services), as these are instead reflected in the “Sustainable” strategic model scenario.
- 2.1.5 The revised trip generation figures have been developed using TRICS and the corresponding outputs are provided at **Appendix A**.
- 2.1.6 The following paragraphs summarise the outputs from the strategic model, comparing the BAU and Sustainable Option 1b scenarios. These have been analysed with regards to the corresponding flow difference, volume/capacity ratio and the queue length data plots. The full outputs can be found at **Appendix B** of this addendum.

2.2 Flow Difference

- 2.2.1 **Figure 1 to Figure 4** below show how the traffic flows across the network are expected to change as a result of the implementation of the current allocation proposals within the CPP. These figures address the “Business as Usual” scenario (i.e. with no allowances made for mitigation or additional sustainable transport measures).

Figure 1. Benfleet / Hadleigh Flow Difference AM Peak



Figure 2. Canvey Flow Difference AM Peak



2.2.2 As would be anticipated, the impacts of the revised CPP proposed allocations are most concentrated in the key distributor routes on and off of Canvey Island, the A130 corridor and the A127 corridor. Proportionately less additional traffic is observed on the A13; this is due to this corridor already being highly saturated with traffic in the reference case, further evidenced by the volume of traffic being assigned by the model to the B1014 corridor.

Figure 3. Benfleet / Hadleigh Flow Difference PM Peak

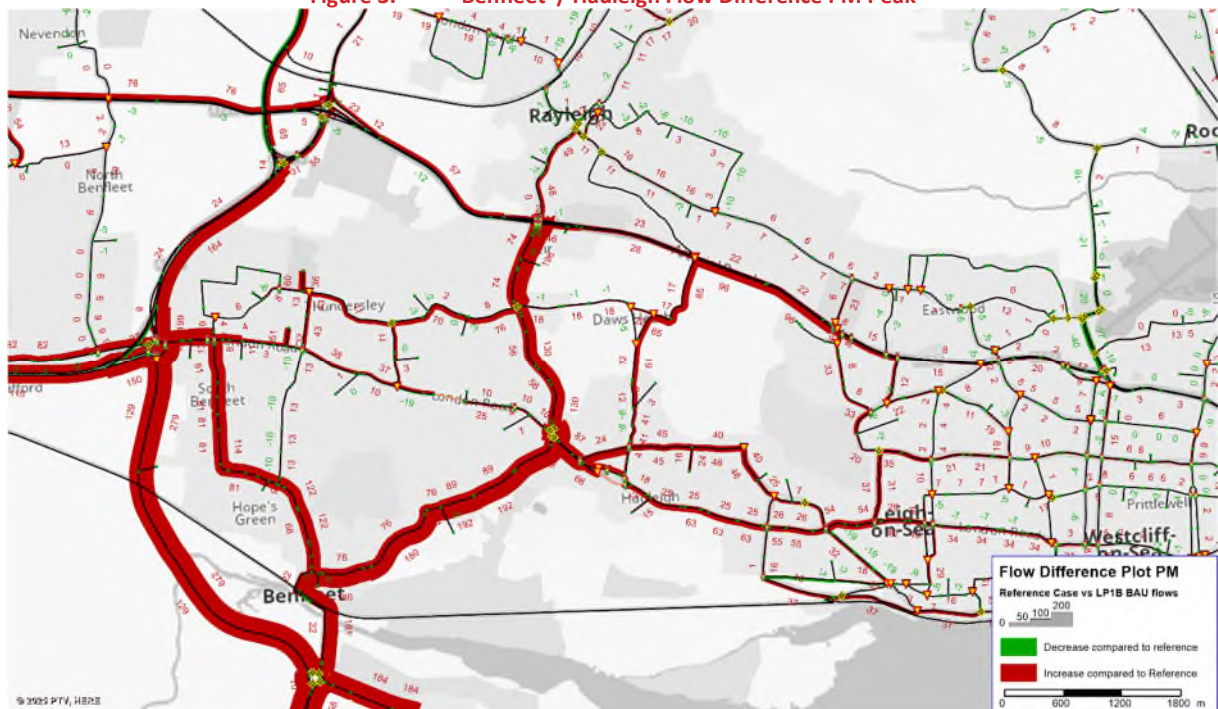


Figure 4. Canvey Flow Difference PM Peak



2.2.3 Similar patterns are observed in the PM peak; it is notable that there is significantly higher use of the route via South Benfleet and Hope's Green compared to the AM peak. Strong tidality is observed in the flows to and from Canvey Island.

2.2.4 Appendix B contains plots which compare the reference case to the Sustainable scenario; as has been described in the TA report this envisages a reduction in car trips of 13% from

local plan sites (no additional deductions are made for existing vehicle trips which could be encouraged to switch modes by the Plan's sustainable transport strategies for walking, cycling and public transport. These generally show a modest reduction in overall additional flows but are not sufficient to lead to any material changes in the distribution of traffic within the models.

2.3 Volume/Capacity

2.3.1 The following section summarises the volume/capacity (v/c) level across the BAU and Sustainable future year scenarios.

Benfleet & Hadleigh

2.3.2 The figures below summarise the link Volume/Capacity ratios throughout the Benfleet and Hadleigh region across the BAU and Sustainable scenarios in the AM peak.

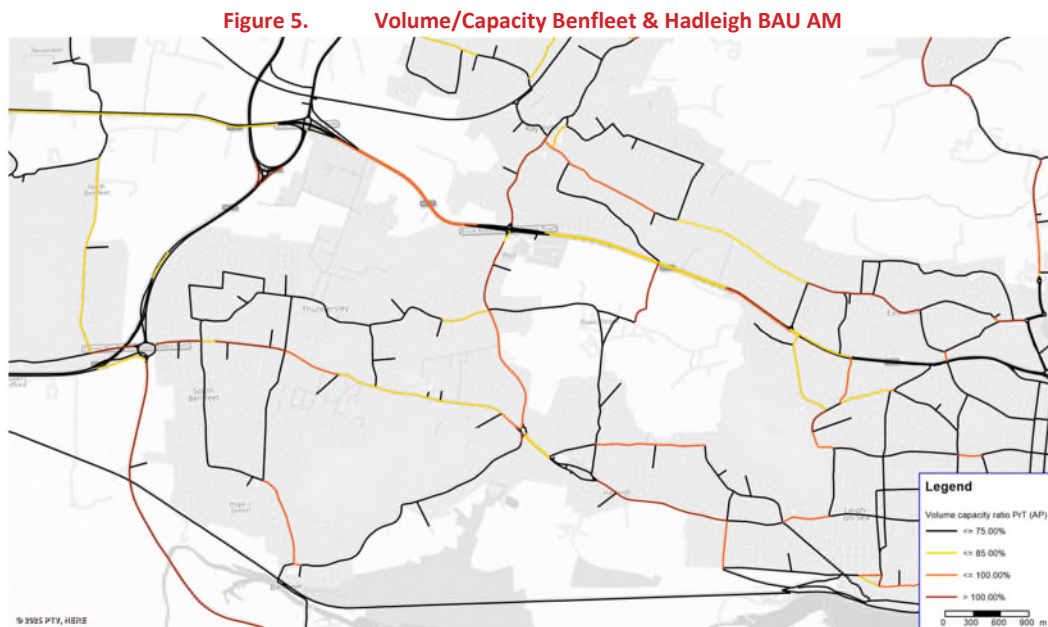


Figure 6. Volume/Capacity Benfleet & Hadleigh Sustainable AM



- 2.3.3 As indicated above, there is minimal/no difference between the BAU and Sustainable scenarios.
- 2.3.4 The main points of congestion indicated include the A130 Canvey Road south of the Sadlers Farm roundabout, and to the north of the A127/A129 junction to the north of Thundersley.
- 2.3.5 It is recognised that in both BAU and Sustainable scenarios, the A130 Canvey Road north of the Sadlers Farm roundabout, and the smaller roads between the A127 and A13 are approaching capacity; this does not mean that there are not substantial queues and delay in these locations, only that the flow is proportionally less of the theoretical capacity of these links.
- 2.3.6 The figures below summarise the v/c for the Benfleet and Hadleigh region in the PM peak in the BAU and Sustainable scenarios.

Figure 7. Volume/Capacity Benfleet & Hadleigh BAU PM



Figure 8. Volume/Capacity Benfleet & Hadleigh Sustainable PM



- 2.3.7 As indicated above, the BAU and Sustainable scenarios indicate very little difference in the PM peak from the AM peak.
- 2.3.8 Particular points of link congestion (as opposed to junction congestion) are noted to be the A13 south of the Sadlers Farm roundabout, and east of the London Road/High Street junction in Hadleigh, both of which are at capacities over 100%.

Canvey Island

- 2.3.9 The figures below summarise the volume/capacity ratios in the Canvey Island region between the BAU and Sustainable scenarios.

Figure 9. Volume/Capacity Canvey Island BAU AM

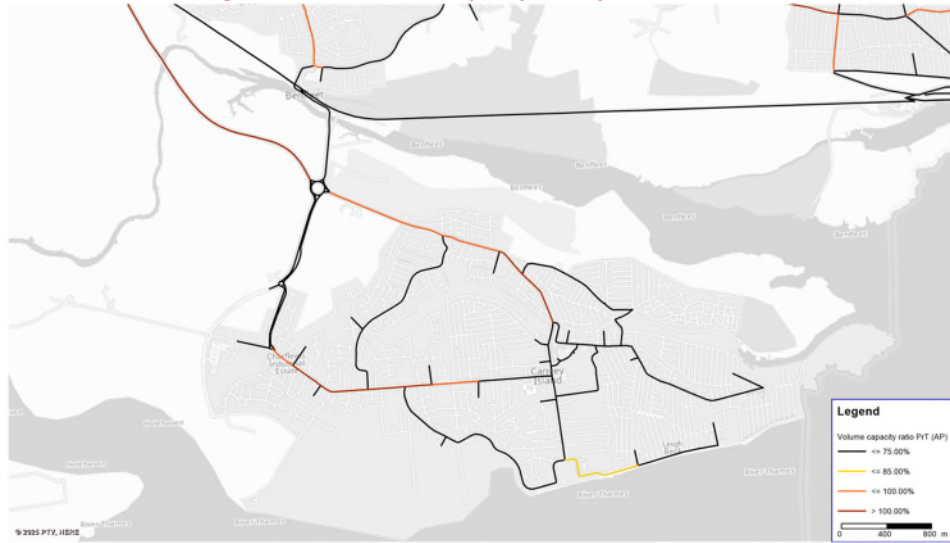
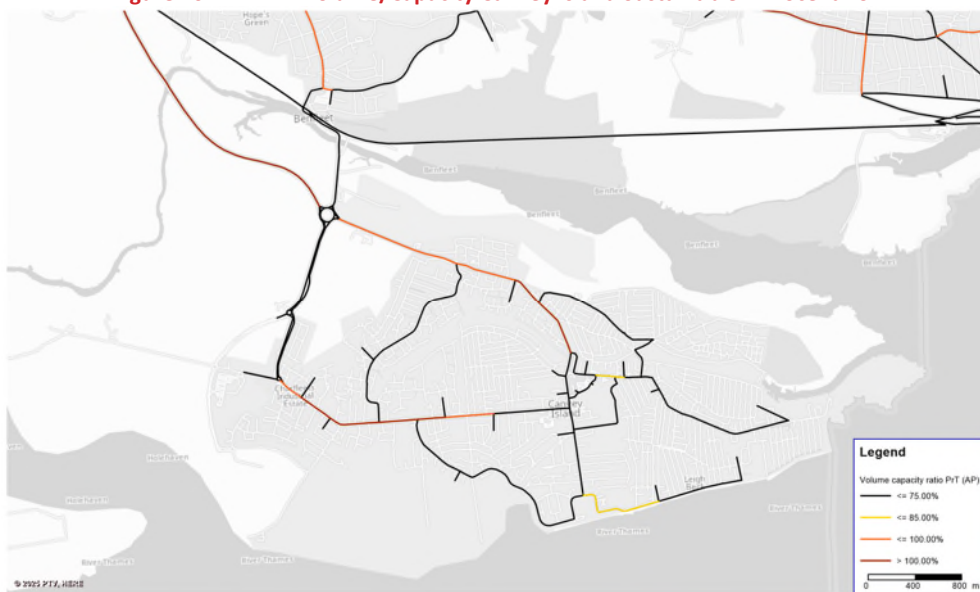


Figure 10. Volume/Capacity Canvey Island Sustainable AM Scenario



- 2.3.10 As indicated above, the v/c of the region is similar in both the BAU and Sustainable scenarios. The main points of congestion are noted to be the B1014 southeast of the Canvey Road/Canvey Way roundabout, Central Wall Road north-south into the Furtherwick Road junction, and Long Road east-west. All of these routes are indicated to be at capacity of over 100%.
- 2.3.11 The figures below summarise the v/c of the Canvey Island region in the PM peak across BAU and Sustainable scenarios.

Figure 11. Volume/Capacity Canvey Island BAU PM Scenario

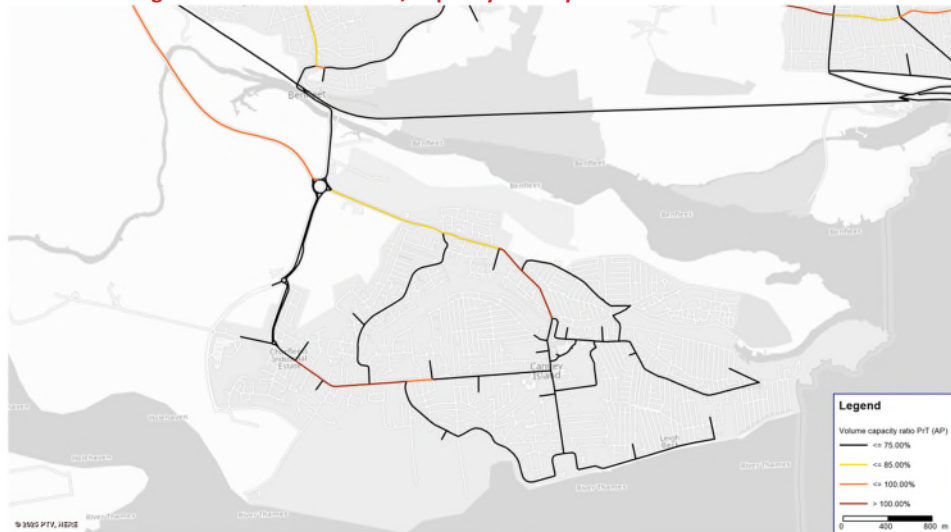
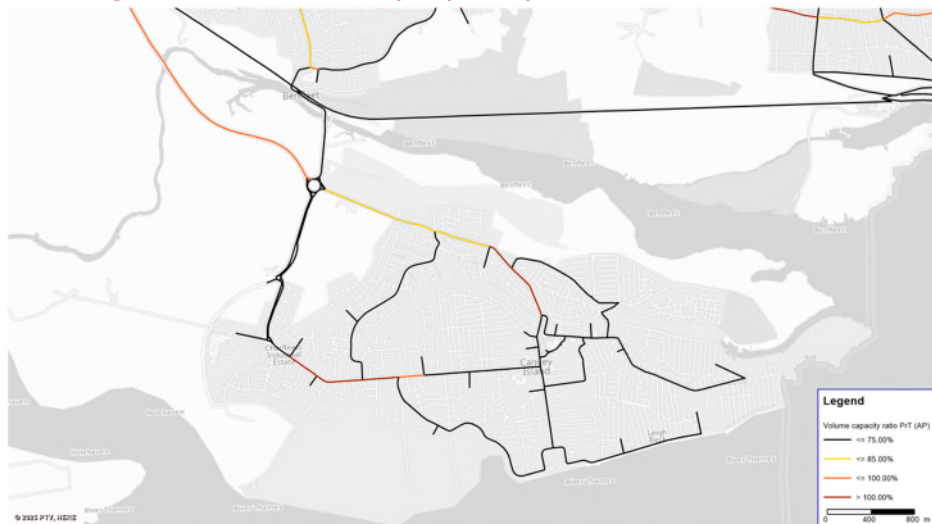


Figure 12. Volume/Capacity Canvey Island Sustainable PM Scenario



- 2.3.12 The PM peaks in the BAU and Sustainable scenarios show very similar v/c data for the Canvey Island region as the AM peaks. The main points of congestion are the Long Road east-west and Central Wall Road; north-south into the Furtherwick Road junction represent additional areas of congestion which are over 100% v/c.

2.4 Queue Length

- 2.4.1 The following section summarises the queue length data in the BAU and Sustainable scenarios. “Relative” queue length relates to the amount of space on a given junction arm within the model for vehicles to queue; over 100% means that queues will extend beyond that space, potentially disrupting traffic flows.

Benfleet & Hadleigh

- 2.4.2 The queue lengths in the BAU and Sustainable with Mitigation scenarios for the Benfleet and Hadleigh regions are indicated in the figures below.

Figure 13. Queue Length Benfleet & Hadleigh BAU AM Scenario



Figure 14. Queue Length Benfleet & Hadleigh Sustainable AM Scenario



2.4.3 As indicated above, the relative queue length is noted to increase with the implementation of the Sustainable scenario, particularly along the A127 south onto the A129, and on London Road to the east of the Sadlers Farm roundabout, south on High Road. In both of these areas, the relative queue lengths are over 100%.

2.4.4 The figures below indicate the queue lengths in the PM peak scenarios.

Figure 15. Queue Length Benfleet & Hadleigh BAU PM Scenario



Figure 16. Queue Length Benfleet & Hadleigh Sustainable PM Scenario



- 2.4.5 In the BAU scenario, the only significant queue lengths are noted to the east of the Sadlers Farm roundabout along London Road. Within the Sustainable scenario, a number of additional queues are seen; along the A129 south of the junction with A127, and east-west along the A127 to the east of The Fairway, both of which see relative queue plots between 90-100%.
- 2.4.6 The “increase” in queue lengths observed in the sustainable scenario are believed to be caused by localised re-routing of some traffic due to the overall reduction in development traffic relative to the BAU models. This does not mean that the sustainable scenario is “worse” for vehicular traffic as the re-routing indicates that an improved journey time can be obtained for certain trips, even if queues (and delay) at specific locations have increased in comparison to BAU.

Canvey Island

2.4.7 The AM peaks for the BAU and Sustainable scenarios are indicated in the figures below.

Figure 17. Queue Length Canvey Island BAU AM Scenario



Figure 18. Queue Length Canvey Island Sustainable AM Scenario



2.4.8 As indicated above, there is very little difference in queue lengths in the Canvey Island region between the BAU and Sustainable scenarios. The only notable queues in both scenarios is along the B1014 to the east of the Canvey Way/Canvey Road roundabout. In the BAU scenario this is noted to be a relative queue length of 71%, and in the Sustainable scenario, this reduces slightly to 61%. (It should be noted that the “available” space for queues on this roundabout is very substantial due to the lack of adjacent junctions).

2.4.9 The queue lengths in the PM peak are identified for the BAU and Sustainable scenarios in the figures below.

Figure 19. Queue Length Canvey Island BAU PM scenario

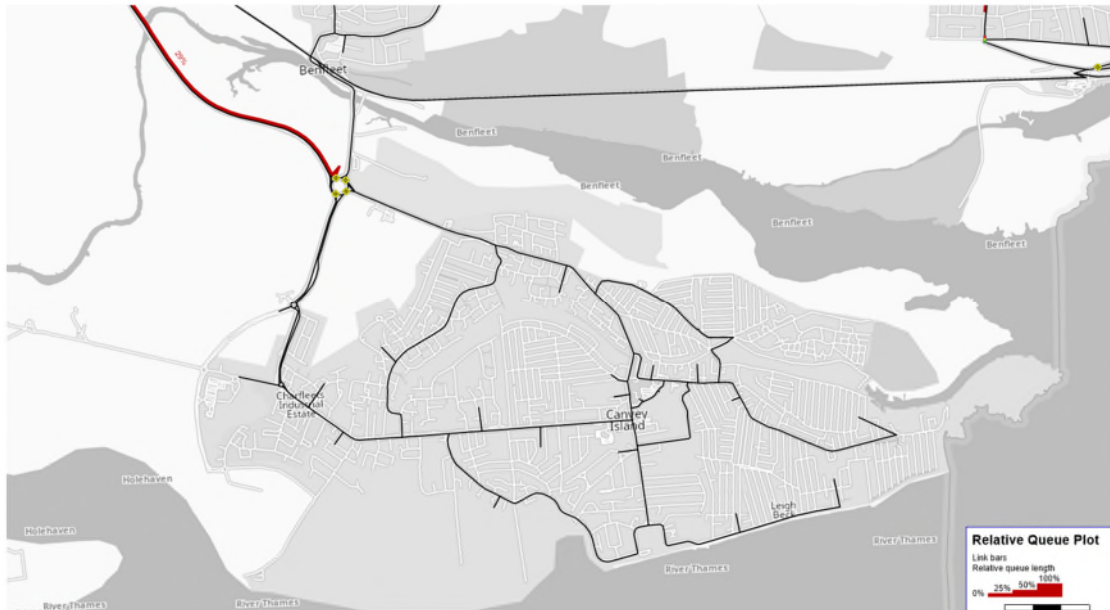


Figure 20. Queue Length Canvey Island Sustainable PM scenario



- 2.4.10 As indicated above, the only notable queue lengths in the Canvey Island region are observed at the Canvey Road/Canvey Way roundabout; to the northwest in both scenarios, and to the southeast along Somnes Avenue in the Sustainable scenario, with a relative queue length of 74%.

2.5 Summary

- 2.5.1 As indicated from the updated SE Model outputs, the 2043 with Mitigation BAU and Sustainable scenarios are relatively similar in both volume/capacity and queue length

data. The flow difference plots provide greater clarity on where traffic reduces as a result of the sustainable transport assumptions and measures, however it is recognised that the increase in traffic in both scenarios compared to the reference case is very significant in the west of the borough.

- 2.5.2 The updated strategic modelling has demonstrated that, even with the “built in” advantages of the West Canvey broad location, the scale of this proposed development still means that there will be very large increases in vehicle trips seeking to move to and from Canvey, and that this demand will affect both the A130 and the route towards Benfleet station. There is also evidence of “knock on” effects of the A13 corridor in particular having very little ability to absorb extra vehicular demand, with the model showing that the B1014 corridor would operate as the most obvious alternative.
- 2.5.3 The sustainable mode share scenario test indicates that the sustainable mode strategies as currently defined in the main TA report would be capable of reducing overall car demand by a modest amount. However, this estimate is deliberately conservative and focused on the local measures described in the main TA report. Section 4 of this Addendum considers how public transport (primarily via bus) could play a larger role, in part via the opportunities specifically offered by the West Canvey site, and in part via the return of previously adopted measures to physically safeguard bus movements.

3. UPDATED LOCAL MODEL TESTING

3.1.1 Through the development of the Schedule of Interventions described in the main TA report and data obtained from the strategic models, a series of junctions have been identified for further consideration in order to establish the specific impacts of future year development at key local junctions. The initially identified junctions are as follows:

- Manor Road/Church Road
- Kiln Road/Runnymede Chase
- London Road/High Street
- Scrub Lane/Rectory Road/New Road;
- Rushbottom Lane/London Road/High Road;
- London Road/Kents Hill Road/Kents Hill Road North;
- Northwick Corner Roundabout;
- Long Road/Southwick Road/Linden Way;
- Long Road/Furtherwick Road;
- Furtherwick Road/Foksville Road;
- High Street/Foksville Road;
- Point Road Roundabout;
- Eastern Esplanade/Seaview Road; and
- Rayleigh Road/London Road/Benfleet Road/Kiln Road

3.1.2 The TA addendum provides updated local junction modelling for the following junctions:

- London Road/Rectory Road;
- London Road/New Road;
- Rushbottom Lane/London Road/High Road;
- London Road/Kents Hill Road/Kents Hill Road North;
- Northwick Corner Roundabout;
- Long Road/Furtherwick Road/Oak Road;
- Rayleigh Road/London Road/Benfleet Road/Kiln Road

3.1.3 The model results in this section of the report replace those presented for the junctions listed above in the main TA report. Copies of relevant model output files are included at **Appendix C** of this addendum.

3.2 London Road/High Street Junction

3.2.1 London Road/High Street is a five-arm part signalised junction located in central Hadleigh (it is referred to here as London Road / High Street for convenience). The junction features a central island which contains a series of developments within Option 1a of the Plan. Both The Island Site and Osbourne Motor Company development sites are located within the junction area (combined capacity of 82). Additionally, the Castle Lane Car Park site (capacity of 38) is located approximately 110 metres to the south; and the Johnsons Factory site (capacity of 44) is approximately 240 metres to the southeast of the junction.

3.2.2 The ISI also identifies a series of accidents having occurred surrounding the London Road/Rectory Road junction to the east of the island junction (ISI ref. A12), and the potential development of cycle routes along Church Road to the east of the island junction (ISI ref. C12).

3.2.3 The existing layout of the junction is indicated in **Figure 21** below.

Figure 21. London Road/High Street Existing Junction Layout



3.2.4 In line with SE Model data provided, modelling has been provided to the east of the junction at the London Road/Rectory Road junction. The model results for base and future year scenarios are indicated in **Table 1** below.

Table 1. London Road / Rectory Road Model Results

		AM PEAK		PM PEAK		
Arm	DoS	Mean Max Queue (MMQ)	Av Delay per PCU (s/PCU)	DoS	Mean Max Queue (MMQ)	Av Delay per PCU (s/PCU)
2024 Base						
A – Rectory Road	18.5%	1.0	46.8	15.3%	0.8	48.2
B - A13 London Road NW	52.9%	4.6	14.5	35.4%	4.0	8.3
2043 Reference Case						

	AM PEAK			PM PEAK		
A – Rectory Road	16.2%	1.1	40.2	13.3%	0.7	46.0
B - A13 London Road NW	70.2%	6.5	19.7	60.6%	5.0	16.2
2043 With Development BAU						
A – Rectory Road	10.3%	1.0	28.9	12.6%	0.8	42.6
B - A13 London Road NW	80.0%	11.4	26.0	70.3%	6.0	19.3
2043 With Development Sustainable						
A – Rectory Road	10.3%	1.0	28.9	12.6%	0.8	42.6
B - A13 London Road NW	81.0%	11.6	26.6	70.8%	6.0	19.5

3.2.5 As is evident in the results above, all arms are within capacity across all scenarios. There is a notable increase in the Degree of Saturation across all arms between the 2043 Reference Case and with Mitigation scenarios.

3.2.6 The peak DoS level is seen along the London Road NW arm in the 2043 with Mitigation Sustainable scenario; with a DoS of 81.0% in the AM peak. It is notable however that the highest average level of delay in every scenario is seen along the Rectory Road arm in the PM peak. Contrary to the increasing DoS level in the future year scenarios, the average delay time along Rectory Road is highest in the 2024 Base PM peak, of 48.2 s/PCU.

3.2.7 Due to the low level of impact development is anticipated to have on Rectory Road/London Road, it is determined that further mitigation is not required in relation to the junction at this stage.

3.3 London Road/New Road

3.3.1 London Road/New Road is a three-arm signalised junction located to the northwest of the London Road/High Road junction. Signalised pedestrian crossings are located across all three arms of the junction. The Island Site and Osbourne Motor Company development

sites are located within the circulatory of the London Road/High Street junction (combined capacity of 82), approximately 180 metres to the southeast of the junction.

3.3.2 The existing layout of the junction is indicated in **Figure 22** below.

Figure 22. London Road/New Road Existing Layout



3.3.3 The model results for Base and Future Year scenarios are indicated in **Table 2** below.

Table 2. London Road/New Road Model Results

		AM PEAK		PM PEAK		
Arm	DoS	Mean Max Queue (PCU)	Avg Delay (s/PCU)	DoS	Mean Max Queue (PCU)	Avg Delay (s/PCU)
2024 Base						
A – New Road	75.9%	6.5	61.4	73.3%	6.7	55.0
B – London Road SE	56.9%	9.9	22.7	55.5%	9.4	23.8
C – London Road NW	76.8%	15.1	30.8	72.7%	13.3	30.5
2043 Reference Case						
A – New Road	84.0%	7.7	75.7	78.7%	7.6	60.1

	AM PEAK			PM PEAK		
B – London Road SE	62.2%	11.4	23.2	59.4%	10.2	24.7
C – London Road NW	83.6%	18.1	34.5	83.1%	17.0	36.7
2043 with Development BAU						
A – New Road	93.6%	10.7	103.5	89.3%	11.2	71.1
B – London Road SE	65.7%	12.4	24.2	66.8%	11.9	28.2
C – London Road NW	91.5%	23.2	46.4	93.5%	22.7	57.6
2043 with Development Sustainable						
A – New Road	88.8%	9.4	81.7	89.3%	11.2	71.1
B – London Road SE	67.3%	12.7	25.4	66.4%	11.6	28.1
C – London Road NW	94.1%	25.1	53.6	93.9%	22.8	57.6

3.3.4 As is evident in the results above, all arms are within capacity. Within the 2024 Base Scenario, none of the arms are approaching capacity, with the highest Degree of Saturation of 76.8% on London Road NW arm in the AM peak. This increases in the 2043 Reference Case scenario, in which the London Road NW arm is of a DoS of 83.6%, and the New Road arm is a DoS of 84.0%. Whilst these arms have increased in saturation level, none of the arms in this scenario meet the 85% threshold deemed as “approaching capacity”.

3.3.5 In the 2043 With Mitigation (sustainable) scenario, the New Road and London Road NW arms are approaching capacity in both BAU and Sustainable scenarios; with a peak DoS of 94.1% on the London Road NW arm in the Sustainable scenario AM peak, and 93.9% on the London Road NW arm in the PM peak. Peak queues of 25.1 PCU are seen along London Road NW in the Sustainable AM peak with Average Delays of 53.6 seconds. The peak delays are seen along the New Road arm in the Sustainable AM peak, with delays of 81.7 seconds.

3.3.6 As indicated in the results, across the three scenarios the junction operates within capacity; additional mitigation is not therefore expected to be required.

3.4 Scrub Lane/ Rectory Road/New Road

- 3.4.1 Scrub Lane/Rectory Road/New Road is a signalised four-arm junction located to the north of Hadleigh. Signalised pedestrian crossings are located on the east, south and west arms. In regard to proximity to the CPP option 1a development, the junction is located approximately 130 metres to the west of the Land South of Scrub Lane site (capacity of 80 dwellings).
- 3.4.2 The junction is located on the boundary between regions 11 and 12 within the ISI. In regard to specific interventions recommended within the schedule, cycle routing is proposed east-west along New Road/Scrub Lane, and north-south along Rectory Road (ISI ref C11 and C12).
- 3.4.3 The existing junction layout is indicated in **Figure 23** below.

Figure 23. Rectory Road/Scrub Lane/New Road Existing Layout



- 3.4.4 **Table 3** below indicates the junction performance within the base and future year scenarios.

Table 3. Rectory Road/Scrub Lane/New Road Model Results

Arm	AM PEAK			PM PEAK		
	DoS	MMQ (PCU)	Avg Delay (s/PCU)	DoS	MMQ (PCU)	Avg Delay (s/PCU)
2024 Base						
A – Rectory Road N	97.3%	16.9	103.3	90.8%	14.1	66.1

	AM PEAK			PM PEAK		
B – Scrub Lane	93.5%	15.9	76.0	91.5%	13.4	74.4
C – Rectory Road S	69.9%	3.3	71.1	17.6%	0.7	33.9
D – New Road	96.4%	12.0	124.1	90.0%	8.6	98.9
2043 Reference Case						
A – Rectory Road N	103.7%	26.7	161.7	95.7%	86.2	86.2
B – Scrub Lane	106.1%	30.5	192.4	97.1%	100.4	100.4
C – Rectory Road S	108.8%	13.6	287.1	91.9%	142.6	142.6
D – New Road	105.6%	19.8	211.5	93.8%	114.5	114.5
2043 with Development (BAU)						
A – Rectory Road N	90.2%	14.6	60.8	112.5%	47.0	276.7
B – Scrub Lane	128.2%	65.1	477.6	112.4%	43.2	277.3
C – Rectory Road S	133.3%	38.9	552.0	92.0%	6.6	122.0
D – New Road	126.5%	46.7	470.4	112.4%	25.6	300.0
2043 with Development (Sustainable)						
A – Rectory Road N	89.6%	14.4	59.4	112.9%	47.9	281.6
B – Scrub Lane	127.9%	64.5	473.5	112.1%	42.4	272.7
C – Rectory Road S	131.4%	38.1	531.6	91.9%	6.6	120.5

	AM PEAK			PM PEAK		
D – New Road	126.4%	46.4	468.9	113.3%	26.5	310.5

- 3.4.5 As is evident in the results above, the junction is reaching capacity in the 2024 Base Scenario with a peak DoS of 97.3% along Rectory Road N, and 96.4% along New Road in the AM peak. A peak average delay of 124.1 s/PCU is also apparent along New Road.
- 3.4.6 In the 2043 Reference Case scenario, the junction is over capacity on all four arms in the AM peak. The maximum DoS of 108.8% is seen along Rectory Road S, and an associated average delay of 287.1 s/PCU. In the PM peak, whilst all arms are within capacity, they all have Degrees of Saturation of over 90%.
- 3.4.7 In the 2043 With Mitigation scenarios, the DoS level increases from the Reference Case scenario across all arms aside from the Rectory Road N arm. All arms are overcapacity in either the AM or PM peak of both the BAU and Sustainable scenarios. The BAU and Sustainable scenarios are relatively similar in their results. The peak DoS of 133.3% is seen in the AM peak along the Rectory Road S arm in the BAU scenario. An average delay per vehicle of 552 seconds is associated with this. In the PM peak, a peak DoS of 113.3% is recorded on the New Road arm. This comes with an associated average delay of 310.5 s/PCU.
- 3.4.8 There is a lack of available space within the public highway for physical works to increase the capacity of the junction; this is further complicated by the presence of multiple accesses to property. As such, physical mitigation at this location is not considered to be practical. It is considered that additional measures to increase the use of sustainable transport options will need to be examined as part of the development of local plan allocation sites.

3.5 Rushbottom Lane/London Road/High Road

- 3.5.1 Rushbottom Lane/London Road/High Road is a four-arm signalised junction located to the west of Benfleet. Signalised crossings are located on the northern, western and southern arms of the junction. The junction is located immediately to the east of the Furniture Kingdom development site contained within Option 1a of the CPP, with a capacity of 48 dwellings.
- 3.5.2 The junction is also highlighted as an area for potential modelling within the ISI, due to the high number of collisions which has occurred there previously (ISI ref. A6/A7). Additionally, the junction falls along the proposed redirection of bus route 28 northbound along Rushbottom Lane (ISI ref. B7).
- 3.5.3 The existing junction layout is indicated in **Figure 24** below.

Figure 24. Rushbottom Lane/London Road/High Road Existing Layout



3.5.4 The model results for the base and future year scenarios are indicated in **Table 4** below.

Table 4. Rushbottom Lane/London Road/High Road Model Results

	AM PEAK			PM PEAK		
Arm	DoS	MMQ (PCU)	Avg Delay (s/PCU)	DoS	MMQ (PCU)	Avg Delay (s/PCU)
2024 Base						
A – Rushbottom Lane	150.1%	110.9	694.6	110.4%	19.9	280.5
B – London Road E	151.7%	108.9	710.8	46.0%	6.7	28.9
C – High Road	152.2%	83.0	712.4	113.4%	23.7	318.9
D – London Road W	92.4%	18.0	45.3	114.4%	277.1	79.8
2043 Reference Case						
A – Rushbottom Lane	168.2%	103.1	839.5	119.7%	34.3	384.7
B – London Road E	159.0%	134.7	766.2	63.5%	7.3	34.2
C – High Road	169.4%	131.9	843.8	124.1%	34.7	446.1

	AM PEAK			PM PEAK		
D – London Road W	113.8%	78.1	268.0	131.6%	138.9	492.4
2043 with Development (BAU)						
A – Rushbottom Lane	154.3%	91.5	733.2	127.9%	42.3	478.6
B – London Road E	155.8%	141.4	741.4	62.7%	7.6	32.7
C – High Road	151.6%	130.6	739.0	132.5%	47.6	534.4
D – London Road W	104.4%	93.8	705.4	132.9%	152.3	505.2
2043 with Development (Sustainable)						
A – Rushbottom Lane	127.1%	60.3	462.2	126.4%	40.5	462.4
B – London Road E	123.7%	84.2	420.0	62.3%	7.6	32.5
C – High Road	36.1%	1.5	57.4	133.0%	48.1	539.0
D – London Road W	93.0%	21.4	40.5	132.7%	151.8	503.7

3.5.5 As is evident in the results above, aside from the London Road W in the 2024 Base AM peak, and London Road E arm in the PM peaks, all arms are significantly over capacity.

3.5.6 In the 2043 With Development scenarios, all arms are over capacity in either the AM or PM peaks. The peak DoS is seen along the London Road E arm in the BAU scenario in the AM peak, of 155.8%. This comes with an associated average delay of 741.4 s/PCU, and MMQ of 141.4. In the PM peak, the peak DoS of 133.0% is seen along the High Road arm, with an associated delay of 539.0s/PCU, and MMQ of 49.1.

3.5.7 The changes between the reference case and With Development scenarios in this location are relatively limited and in some cases represent an improvement due to changes in the distribution of traffic. As such, physical mitigation has not been considered further at this location.

3.6 London Road/Kents Hill Road/Kents Hill Road North

3.6.1 London Road/Kents Hill Road/Kents Hill Road North is a four-arm signalised junction located to the east of Benfleet. Signalised pedestrian crossings are located across all four

arms. The junction is immediately to the east of the 312-320 London Road development site as featured in Option 1a of the CPP, comprised of a capacity of 22 dwellings.

3.6.2 Additionally, the ISI identifies the junction to fall along the potential southbound cycle route along Kents Hill Road, connecting London Road in the north to High Road to the south (ISI ref. C6).

3.6.3 The existing layout of the junction is indicated in **Figure 25** below.

Figure 25. London Road/Kents Hill Road/Kents Hill Road North Existing Junction Layout



3.6.4 The junction model results for the base and future year scenarios are indicated in **Table 5** below.

Table 5. London Road/Kents Hill Road/Kents Hill Road North Model Results

	AM PEAK			PM PEAK		
Arm	DoS	MMQ (pcu)	Average Delay (s/PCU)	DoS	MMQ (pcu)	Average Delay (s/PCU)
2024 Base						
A – Kents Hill Road N	85.1%	5.3	110.1	100.1%	10.2	186.4
B – London Road E	90.0%	22.4	43.7	58.2%	9.6	24.8
C – Kents Hill Road S	81.4%	4.9	97.3	105.6%	13.8	238.3

	AM PEAK			PM PEAK		
D – London Road W	85.7%	18.1	36.6	103.3%	43.8	127.9
2043 Reference Case						
A – Kents Hill Road N	115.1%	27.0	337.2	104.4%	12.6	229.0
B – London Road E	109.3%	62.3	215.2	69.5%	12.3	28.9
C – Kents Hill Road S	115.6%	21.6	354.1	110.4%	18.8	288.1
E – London Road W	113.1%	74.8	270.1	112.2%	75.8	255.3
2043 with Development (BAU)						
A – Kents Hill Road N	119.8%	34.4	391.4	108.1%	17.6	258.0
B – London Road E	122.8%	109.5	401.5	72.8%	13.0	31.0
C – Kents Hill Road S	111.7%	20.7	300.9	115.7%	21.4	355.7
E – London Road W	119.3%	93.1	357.2	118.8%	100.0	347.2
2043 with Development (BAU)						
A – Kents Hill Road N	119.0%	33.4	380.9	108.2%	17.7	259.7
B – London Road E	123.2%	111.1	406.7	72.3%	12.9	30.8
C – Kents Hill Road S	115.7%	24.3	349.4	115.8%	21.5	357.5
E – London Road W	119.3%	93.1	257.2	118.4%	98.4	341.9

- 3.6.5 As is evident in the results above, the 2024 Base scenario is within capacity in the AM peak. In the PM peak, all arms aside from the London Road E arm are overcapacity, with the Kents Hill Road S arm at the highest level of overcapacity, at a DoS of 105.6%.
- 3.6.6 The 2043 With Development scenarios, all arms are noted to be overcapacity, aside from the London Road E arm in the BAU and Sustainable scenarios in the PM peak. The London Road E arm in the Sustainable scenario AM peak indicates the highest DoS of 123.2%, with associated MMQ of 111.11, and an average delay of 406.7s/PCU.
- 3.6.7 The changes between the reference case and With Development scenarios in this location are relatively limited and do not represent a material change in traffic conditions. As such, physical mitigation has not been considered further at this location.

3.7 Northwick Corner Roundabout

- 3.7.1 Northwick Corner is a four-arm priority roundabout located to the southwest of Canvey Island.
- 3.7.2 Whilst the junction does not fall in close proximity to any of the suggested interventions within the ISI, it is noted that it forms part of the key north-southeast access to Canvey Island.
- 3.7.3 The existing layout of the junction is indicated in **Figure 26** below.

Figure 26. Northwick Corner Roundabout Existing Junction Layout



- 3.7.4 The model results for the existing and future year scenarios is indicated in **Table 6** below. Due to the Charfleets Service Road and Northwick Road having no vehicular flow in the strategic model, these arms have been left out of the results.

Table 6. Northwick Corner Roundabout Model Results

	AM PEAK			PM PEAK		
Arm	RFC	Queue	Delay	RFC	Queue	Delay
2024 Base						
A – Canvey Road N	0.3	0.4	2.37	0.42	0.7	2.8
B – Canvey Road SE	0.5	1.0	3.30	0.3	0.4	2.38
C – Charfleets Service Road	N/A	N/A	N/A	N/A	N/A	N/A
D – Northwick Road	N/A	N/A	N/A	N/A	N/A	N/A
2043 Reference Case						
A – Canvey Road N	0.45	0.8	2.98	0.5	1.0	3.26
B – Canvey Road SE	0.57	1.3	3.84	0.44	0.8	2.97
C – Charfleets Service Road	N/A	N/A	N/A	N/A	N/A	N/A
D – Northwick Road	N/A	N/A	N/A	N/A	N/A	N/A
2043 With Development (BAU)						
A – Canvey Road N	0.48	0.9	3.13	0.62	1.6	4.17
B – Canvey Road SE	0.79	3.8	8.02	0.49	1.0	3.23
C – Charfleets	N/A	N/A	N/A	N/A	N/A	N/A

	AM PEAK			PM PEAK		
Service Road						
D – Northwick Road	N/A	N/A	N/A	N/A	N/A	N/A
2043 With Development (Sustainable)						
A – Canvey Road N	0.47	0.9	3.11	0.61	1.5	4.08
B – Canvey Road SE	0.78	3.5	7.58	0.48	0.9	3.21
C – Charfleets Service Road	N/A	N/A	N/A	N/A	N/A	N/A
D – Northwick Road	N/A	N/A	N/A	N/A	N/A	N/A

3.7.5 As is evident in the results above, all arms of the Northwick Corner roundabout which are able to be assessed are within capacity. This is the case across all scenarios, with the highest level RFC of 0.79 indicated along Canvey Road SE arm in the 2043 With Development BAU scenario, with an associated MMQ of 3.8 and average delay of 8.02 s/PCU.

3.7.6 However, the junction is located directly adjacent to the proposed West Canvey strategic allocation site, and the volume of traffic expected to use the junction is therefore predicted to increase substantially. It is therefore recognised that additional survey work and modelling is required for this location to enable the true impacts of development to be assessed. As it has not been possible to collect appropriate data during the July / August period, this work will be undertaken following the Regulation 19 consultation and the results (including any physical mitigation proposals) will be reported in the submission CPP TA.

3.8 Long Road/Furtherwick Road/Oak Road

3.8.1 Long Road/Furtherwick Road is a four-arm unsignalised junction located to the east of Canvey Island. In regard to Option 1a of the CPP development, the junction is immediately to the north of the Long Road and Furtherwick Road Cluster, Oak Road Car Park and Canvey Job Centre sites (combined capacity of 128 dwellings). The junction is also a likely through-route for the Land adjacent to The Paddocks site (capacity of 124 dwellings).

3.8.2 It is also noted within the ISI that the junction has historically experienced a high number of collisions (ISI ref A1, A3, A4).

3.8.3 The existing layout of the junction is indicated in **Figure 27** below.

Figure 27. Long Road/Furtherwick Road/Oak Road Existing Layout



3.8.4 The model results for base and future year scenarios is indicated in **Table 7** below.

Table 7. Long Road/Furtherwick Road/Oak Road Model Results

	AM PEAK			PM PEAK		
Arm	RFC	Queue	Delay	RFC	Queue	Delay
2024 Base						
A – Furtherwick Road N	0.75	3.0	18.9	0.76	3.1	19.69
B – Furtherwick Road S	0.8	3.8	23.58	0.75	2.9	18.58
C – Long Road	0.31	0.5	7.51	0.41	0.7	8.53
2043 Reference Case						

	AM PEAK			PM PEAK		
A – Furtherwick Road N	0.83	4.5	26.66	0.84	4.9	28.21
B – Furtherwick Road S	0.86	5.6	32.41	0.79	3.7	22.38
C – Long Road	0.32	0.5	7.95	0.39	0.6	8.54
2043 With Development (BAU)						
A – Furtherwick Road N	0.91	8.4	45.85	1.00	19.1	89.75
B – Furtherwick Road S	0.89	7.0	40.47	0.81	4.1	25.44
C – Long Road	0.37	0.6	8.07	0.49	0.9	10.07
2043 With Development (Sustainable)						
A – Furtherwick Road N	0.9	7.7	42.51	0.98	16.8	80.99
B – Furtherwick Road S	0.9	7.1	41.1	0.81	3.9	24.27
C – Long Road	0.36	0.6	7.88	0.48	0.9	9.92

3.8.5 As is evident in the results above, all arms are within capacity in both the 2024 Base and 2043 Reference Case scenarios, with a peak RFC of 0.86 along the Furtherwick Road S arm in the 2043 Reference Case AM peak.

3.8.6 In the 2043 with Mitigation scenarios, one arm is at capacity, being the Furtherwick Road N arm in the BAU scenario in the PM peak. All other arms are within capacity, however Furtherwick Road S and Furtherwick Road in the AM peak are approaching capacity. It is considered that the layout of this junction provides greater overall capacity than an alternative (such as a signalised layout) and that the overall impacts of CPP traffic are not

sufficiently large to justify a re-design purely on safety grounds. Therefore, physical mitigation measures have not been considered at this junction.

3.9 Rayleigh Road/London Road/Benfleet Road/Kiln Road

3.9.1 The junction is located to the east of the Castle Point region. This is located between the Thames Loose Leaf and Hadleigh Clinic sites (combined capacity of 33), and a short distance to the northwest of the Hadleigh Town Centre broad location (estimated upper capacity of 200 dwellings).

3.9.2 The existing layout of the junction is indicated in **Figure 28** below.

Figure 28. Rayleigh Road/London Road/Benfleet Road/Kiln Road Existing Layout



3.9.3 The model results for base and future year scenarios is displayed in **Table 8** below.

Table 8. Rayleigh Road/London Road/Benfleet Road/Kiln Road Model Results

	AM PEAK			PM PEAK		
Arm	RFC	Queue	Delay	RFC	Queue	Delay
2024 Base						
A – Rayleigh Road	0.3	0.4	3.81	0.34	0.5	3.77
B – London Road	0.6	1.5	3.99	0.59	1.4	3.97

	AM PEAK			PM PEAK		
C – Benfleet Road	0.61	1.6	5.51	0.47	0.9	3.87
D – Kiln Road	0.47	0.9	4.38	0.44	0.8	3.8
2043 Reference Case						
A – Rayleigh Road	0.38	0.6	4.53	0.4	0.7	4.44
B – London Road	0.67	2.0	4.89	0.63	1.7	4.52
C – Benfleet Road	0.69	2.2	6.93	0.56	1.3	4.7
D – Kiln Road	0.58	1.4	5.82	0.52	1.1	4.6
2043 With Development (BAU)						
A – Rayleigh Road	0.47	0.9	5.77	0.52	1.1	5.74
B – London Road	0.73	2.7	6.23	0.72	2.6	6.25
C – Benfleet Road	0.86	5.6	15.41	0.62	1.7	5.66
D – Kiln Road	0.86	5.6	23.56	0.55	1.2	5.16
2043 with Development (Sustainable)						
A – Rayleigh Road	0.47	0.9	5.76	0.52	1.1	5.74

	AM PEAK			PM PEAK		
B – London Road	0.73	2.7	6.26	0.72	2.5	6.15
C – Benfleet Road	0.83	4.8	13.10	0.62	1.6	5.63
D – Kiln Road	0.68	2.1	8.32	0.55	1.2	5.14

3.9.4 As is evident in the results above, all arms of the junction are within capacity across all scenarios. The highest RFC level of 0.86 is seen along the Benfleet Road and Kiln Road arms in the 2043 With Mitigation BAU AM peak scenario. Associated queue lengths and delays with this scenario are queue lengths along both arms of 5.6 PCU, and delays of 15.41 seconds on the Benfleet Road arm and 23.56 seconds along the Kiln Road arm.

3.9.5 Due to the relatively low impact surrounding the junction in future year scenarios, it is not proposed that the Rayleigh Road/London Road/Benfleet Road/Kiln Road Roundabout should be the subject of additional physical mitigation.

4. ECC LOCAL TRANSPORT PLAN 4

4.1 Role of ECC'S Local Transport Plan 4 (LTP4) – “A Better Connected Essex” (published for consultation 31 July 2025)

- 4.1.1 ECC are currently consulting on the latest draft of their Local Transport Plan 4 (LTP); the consultation is expected to run until 24 September 2025.
- 4.1.2 The draft being consulted on includes the full updated Transport Strategy for the County, and area-specific implementation plans. The consultation document takes into account feedback from the earlier first stage of consultation held in 2024.
- 4.1.3 Castle Point is covered by the South Essex Area Implementation Plan. The main strategy for the whole area makes reference to creation of a rapid transit system to connect key transport hubs and improve connectivity in the area. It is also stated that addressing the monetary costs of public transport to users (such as fare levels) will be important in improving uptake and use of services, particularly bus services.
- 4.1.4 The “severance” effect of the major east-west transport routes (the A13, the A127 and the Liverpool Street and Fenchurch Street – Southend railway lines) is identified as a major issue which the strategy seeks to address. This would undoubtedly assist in making north-south movement through Castle Point easier but is likely to be challenging if this reduces the overall east-west capacity of these routes, especially in the peak hours.
- 4.1.5 Thames Freeport / London Gateway is identified as a key driver of travel demand over the LTP period; links to Canvey are specifically identified for potential improvement, as are more general capacity upgrades on the A13 and A127. It is recognised that such proposals are at a very early stage as ECC has not been in a position to supply any corresponding details during the preparation of the Regulation 19 TA.
- 4.1.6 The planned upgrades to Fairglens Interchange are identified as a key component of the main area strategy and for the adjacent local authority areas. (The upgrades are now understood to be funded and as such are included in the most recent runs of the SE Model, reported on in this TA Addendum.
- 4.1.7 The major commitments proposed in the area strategy which would either be delivered within Castle Point, or which would benefit journeys in and through the borough, are:
- The bus rapid transit corridor (precise location to be identified through future work; the table at appendix A indicates that this could also consider tram services)
 - A second bus corridor along the A129 to improve connections between Castle Point and Rochford, and specifically Rayleigh rail station
 - Improvements to sustainable connections between Canvey Island and the rest of Castle Point (walking, cycling and public transport)
 - A focus on mobility for older Castle Point residents via expansion of community transport services (CPP developments could actively contribute to supporting these efforts and they could form an important additional tool for early-stage site access to non-car options)

- Wider improvements on the A13 and A127 corridors around north-south movement across the borough

4.1.8 It is recognised that, at present, there is little in terms of actual design proposals to support the key measures identified in the LTP and that significant work would need to be done to bring these to a point where their potential impacts, costs and benefits can be assessed. Nonetheless, there is a strong degree of correlation between the location of the major proposed measures and the expected impacts of travel demand which would arise as a result of the proposed CPP spatial strategy. With joint working, there is good potential for CPP sites to contribute to the delivery of these schemes which are of a scale and ambition which the CPP in isolation cannot support.

4.1.9 It is envisaged that the CPP (and its main site allocations) will need to bring forward a selection of improvements in their own right, some of which are identified in the main TA report, with additional measures concerning the bus strategy discussed in the next section of this addendum. These improvements would not be expected to conflict with the aims and proposals in the LTP, in many cases acting as a “first step” or precursor that the ECC proposals can then build upon. As individual sites are progressed, it may be the case that some proposals are modified or “rolled into” the ECC schemes, depending on how and when these are delivered; such decisions will need to be underpinned by appropriate assessments and guided by ECC’s appraisal of the most effective way to use CPP developments as an opportunity to support the wider projects set out in the draft LTP4 and area strategy. Further discussion as to how this would be achieved, and how the CPP itself should lay the foundations for such an approach, is expected following the completion of the Regulation 19 and LTP4 consultations at the end of September 2025.

5. EXPANDED BUS STRATEGY

- 5.1.1 As outlined in the previously submitted Transport Assessment, further analysis has been undertaken to explore the possibility of implementing a more ambitious set of bus improvements. These improvements would be supported by additional investment, from developments associated with the Castle Point Plan (CPP) sites and the new large housing allocation proposed at the West Canvey location. This represents a proactive approach to not only enhance public transport provision, but also to ensure it becomes an attractive option compared to private car use for new and existing residents alike.
- 5.1.2 Additional information is actively being sought from Essex County Council (ECC) in regard to past studies undertaken within the Castle Point area. The aim is to review what has previously been done to develop bus infrastructure and services and identify opportunities for further enhancement that complement or build upon those studies. An understanding of previous schemes will assist with the development of future proposals, ensuring any initiatives represent best practice, and maximize the benefits of any investment into the bus network.
- 5.1.3 The proposed large-scale housing allocation at West Canvey is expected to require a significant upgrade to the local bus network. This is to enable the efficient transport of residents to and from Canvey Island during peak times, without an overreliance on private car. Given the anticipated number of new dwellings, it is considered crucial that the development integrates new, high-quality bus stops as a core element of its infrastructure. Furthermore, existing bus routes should be amended to penetrate the site, thereby ensuring walking distances from new homes to the nearest bus stop are kept to a practical minimum. Not only does this enhance convenience for residents, but it reduces barriers to public transport uptake. The layout of the West Canvey site should be developed as far as possible to create “hub” locations which buses can serve without the creation of excessively extended journey times or additional costs for operators. These hubs would in future have the potential to act as “anchor points” for the proposed new bus corridor between Castle Point and Rochford which is proposed within the current South Essex area strategy in the draft LTP4.
- 5.1.4 Notwithstanding this, the likely need to divert specific existing services into the new development area means there would be impacts on existing bus service patterns. As a result, it is anticipated that additional buses will have to be deployed, supplementing the timetable to maintain or increase frequency during peak periods. This measure will help prevent any reduction in service quality to other areas while providing for new residents.
- 5.1.5 Currently, bus services 21 and 21c operate in the vicinity of the West Canvey location. These services are likely to be suitable candidates for diversion to serve the new development. With appropriate upgrades to service frequency and infrastructure—such as improved stops and real-time information displays—the 21 and 21c could deliver a high-quality connection between West Canvey, Benfleet rail station, and further afield, and so integrate with the wider transport network.
- 5.1.6 Achieving effective integration with rail services will be particularly important. Direct and convenient bus connections to South Benfleet railway station must be prioritised, enabling residents access to mainline rail services. Likewise, providing an optimised

connection to Rayleigh railway station would be advantageous, as this facilitates access to London Liverpool Street, opening up employment and leisure opportunities directly into other areas of central London and beyond; this is entirely in alignment with the vision set out in LTP4. Currently, the journey from Canvey Island to Rayleigh station requires a single transfer: passengers would use the 21 service, then change to the number 1 at Kenneth Road, with a typical journey duration of about an hour. By increasing service frequency, coordinating timetables, and reviewing routing to reduce delays, there is an opportunity to reduce this journey time, thereby making public transport a more attractive option for this route, and creating a basis for a full corridor approach to then be taken forward by ECC.

- 5.1.7 It is recognised that the scale of development proposed at the West Canvey site and more widely on Canvey has been reflected in the outputs of the SE Model, which is showing large increases in traffic travelling to and from the island, including on the existing route to South Benfleet. It is anticipated that the existing measures on this route to prioritise active and sustainable transport will need to be strengthened, including potentially measures to discourage use of this route by general traffic. This will be challenging (but not impossible) to achieve and in part will rely on the ability of the West Canvey site to internalise as many peak hour trips as possible within the island area. ECC's own work on the South Essex area strategy is expected to reach similar conclusions and the LTP4 offers a potentially robust foundation for balancing the needs of different modes and trip types where road space is limited.
- 5.1.8 To further enhance the efficiency of bus operations throughout the borough, it is proposed that further investigation should be undertaken jointly with ECC in regards to bus priority measures at key congestion points along the A13 corridor. The overall concept would involve fitting buses with transponders that would activate a green traffic signal phase in their favour as they approach key junctions, thus reducing time spent stationary at red lights. While this could extend wait times for vehicles on other arms of the junctions in question, the increased flow and reliability for buses would offer a public transport benefit that could be advantageous particularly during peak periods.
- 5.1.9 Currently, the A13/Kents Hill Road and A13/High Street (Tarpots) junctions are signalised and experience traffic delays during peak times. Detailed analysis would be required to assess the feasibility and potential benefits of introducing such bus priority measures. However, given that available space along the A13 is limited, signal-based priority measures represent a potentially impactful and realistic improvement on a congested corridor. It is considered that the greatest chance of successfully implementing these types of measures would be via the proposed bus rapid transit corridor, which in practice would need to employ a mix of measures to protect bus journey times, since creating an "end to end" corridor with reserved carriageway space would not be achievable.
- 5.1.10 Historically, the A13 between Catherine Road and Kents Hill Road featured an additional section of bus lane in a westbound direction. It is understood that this was removed due to safety and capacity issues, particularly the challenge faced by vehicles attempting to access side roads without dedicated right turn lanes. It may be possible to reinstate this section of Bus Lane (possibly in advance of a wider BRT scheme) and this would undoubtedly lead to benefits for bus services in this area. However, any consideration of reinstating this bus lane would demand a thorough and intelligent redesign to avoid repeating past issues. It is intended that this specific proposal will be discussed with ECC

and take into account other feedback from the Regulation 19 consultation so that corresponding scheme plans can be developed and included in the CPP Submission TA.

- 5.1.11 It should be emphasised that the proposals outlined in this report are preliminary and not exhaustive. Ongoing collaboration with ECC Passenger Transport and other stakeholders will be crucial to refine and finalise the bus improvement strategy in advance of CPP's submission for examination. This iterative process will ensure the solutions are both ambitious and deliverable, with the potential of providing lasting benefits for new and existing residents.

6. SUMMARY & CONCLUSION

- 6.1.1 This Addendum to the previously submitted Transport Assessment for the Castle Point Plan has set to establish the impact of the revised Scenario 1b 2043 with Development Business as Usual and Sustainable scenarios.
- 6.1.2 The South Essex strategic model outputs indicate a significant increase in traffic in the west of the borough, with increases in flow and queuing evident along the A13 London Road to the north of the region, and along Long Road on Canvey Island.
- 6.1.3 The corresponding local junction modelling work reflects these changes; certain locations are expected to experience increases in queuing and delay, however these locations also correspond with significant physical limitations on junction layout.
- 6.1.4 The expansion of the West Canvey proposals and the wider impacts of the CPP have led to a re-appraisal and expansion of the public transport strategy, particularly concerning bus operations. The challenges of creating meaningful change are not under-estimated and significant further work is anticipated with ECC and other stakeholders. However, it is considered that with a joined-up approach, and in particular the scale and potential for change in behaviours associated with the West Canvey site, would be capable of reducing the overall traffic impacts of the CPP to an acceptable level.
- 6.1.5 The spatial strategy proposed in the Regulation 19 CPP, and the analysis contained within the main TA report and this TA Addendum, provide evidence of a strong potential positive correlation between the CPP and ECC's aspirations for future travel in the borough as expressed in their draft LTP4 and South Essex area strategy. The measures proposed as part of the CPP's transport strategy would, in many cases, represent a firm starting point from which the LTP's more ambitious proposals could be progressed. Further work is therefore expected to be carried out following the completion of the current consultations to ensure that the CPP is able to carry out this role and that the benefits of the wider LTP4 strategy can be unlocked.

SYSTRA in the UK and Ireland leads the delivery of sustainable infrastructure and environments through specialist engineering and consultancy services.

A world leader in mobility and mass transit, we deliver planning and development consultancy, engineering design, project management, and specialist technical services, that enables the safe and efficient movement of people, goods and essential services.

For more information visit www.systra.com/uk

UK Offices

Birmingham

Alpha Tower, Crowne Plaza, Suffolk Street
Birmingham, B1 1TT
T: +44 (0)121 393 4841

Bristol

33 Colston Avenue, Bristol, BS1 4UA

Edinburgh

Ground Floor, 18 Charlotte Square, Edinburgh, EH2 4DF
T: +44 (0)131 460 1847

Glasgow

Suite 2.1 (2nd Floor), 25 Bothwell Street, Glasgow, G2 6NL
T: +44 (0)141 468 4205

Leeds

100 Wellington Street, Leeds, LS1 1BA
T: +44 (0)113 360 4842

London

One Carey Lane, London, England EC2V 8AE
T: +44 (0)20 3855 0079

Manchester

5th Floor, Four Hardman Street, Spinningfields
Manchester, M3 3HF
Tel: +44 (0)161 504 5026

Newcastle

Block C, First Floor, Portland House, New Bridge Street West,
Newcastle, NE1 8AL
Tel: +44 191 249 3816

Reading

Impact Working at R+, 2 Blagrove Street, Reading, RG1 1AZ
T: +44 118 208 0111

Woking

Dukes Court, Duke Street
Woking, Surrey GU21 5BH
T: +44 (0)1483 357705

York

Meridian House, The Crescent
York, YO24 1AW
Tel: +44 1904 454 600

Ireland Offices

Cork

City Quarter, Lapps Quay, Cork City
Cork, T12 WY42, Republic of Ireland

Dublin

2nd Floor, Riverview House, 21-23 City Quay
Dublin D02 AY91
T: +353 (0) 1 566 2028

Other locations:

France:

Bordeaux, Lille, Lyon, Marseille, Paris

Northern Europe:

Aarhus, Astana, Borås, Bräcke, Copenhagen, Delsbo, Esbjerg,
Gävle, Gothenburg, Helsingborg, Horsens, Jönköping, Karlstad,
Kristianstad, Laxsjö, Malmö, Norrköping, Östersund, Oslo, Riga,
Stockholm, Uppsala, Varberg, Västerås, Wrocław

Southern Europe & Mediterranean:

Algiers, Baku, Bassano del Grappa, Bilbao, Bucharest, Madrid,
Porto, Rabat, Rende, Rome, Sofia, Trento, Turin, Tunis

Middle East:

Cairo, Dubai, Riyadh

Asia Pacific:

Bangkok, Beijing, Brisbane, Delhi, Hanoi, Hong Kong, Jakarta,
Manila, Seoul, Shanghai, Singapore, Shenzhen, Taipei

Africa:

Abidjan, Douala, Johannesburg, Kinshasa, Libreville, Nairobi

Australasia

Sydney, Melbourne, Brisbane, Canberra, Perth

Latin America:

Belo Horizonte, Belém, Bogotá, Lima, Medellín, Mexico, Rio de
Janeiro, Santiago, São Paulo

North America:

Bloomfield, Chicago, Los Angeles, Montreal, Newark, New-York,
Philadelphia, Sacramento, San Francisco, Toronto, Washington

The SYSTRA logo is displayed in a large, bold, red, sans-serif font. The letters are closely spaced, and the overall style is modern and professional.