Castle Point Local Plan Systra Support

Pre and Post Covid-19 Comparison Report

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Pre and Post Covid-19 Traffic Flow Comparison Supplementary Report

1. Introduction

The Castle Point Local Plan Review modelling is underpinned by the South Essex VISUM model which is based on 2019 traffic flows, and therefore representative of traffic conditions pre-Covid-19. Forecast modelling has made use of a 'Core Plus' scenario originally developed for an A127 MRN bid, which included growth factor adjustments made to the VISUM model matrices to account for traffic reductions experienced following Covid-19 over the period 2020-2022.

This technical note summarises the differences in traffic flows on the pre and post Covid-19 network in Castle Point Borough – effectively justifying the prior use of growth factors to account for the traffic flow differences noted.

2. Data selection

Continuous counter data was extracted to enable a comparison of pre and post Covid-19 traffic flows. The most recent data available was obtained for 2024 to represent post-pandemic flows. The year 2019 was used for pre-pandemic flows as this was consistent with the South Essex VISUM model base year. Data was extracted for neutral months for both scenarios to ensure consistency across the two samples and reduce the impact of seasonality.

Data was extracted from a total of ten counters located in or near to Castle Point Borough, as shown in Figure 1 overleaf.
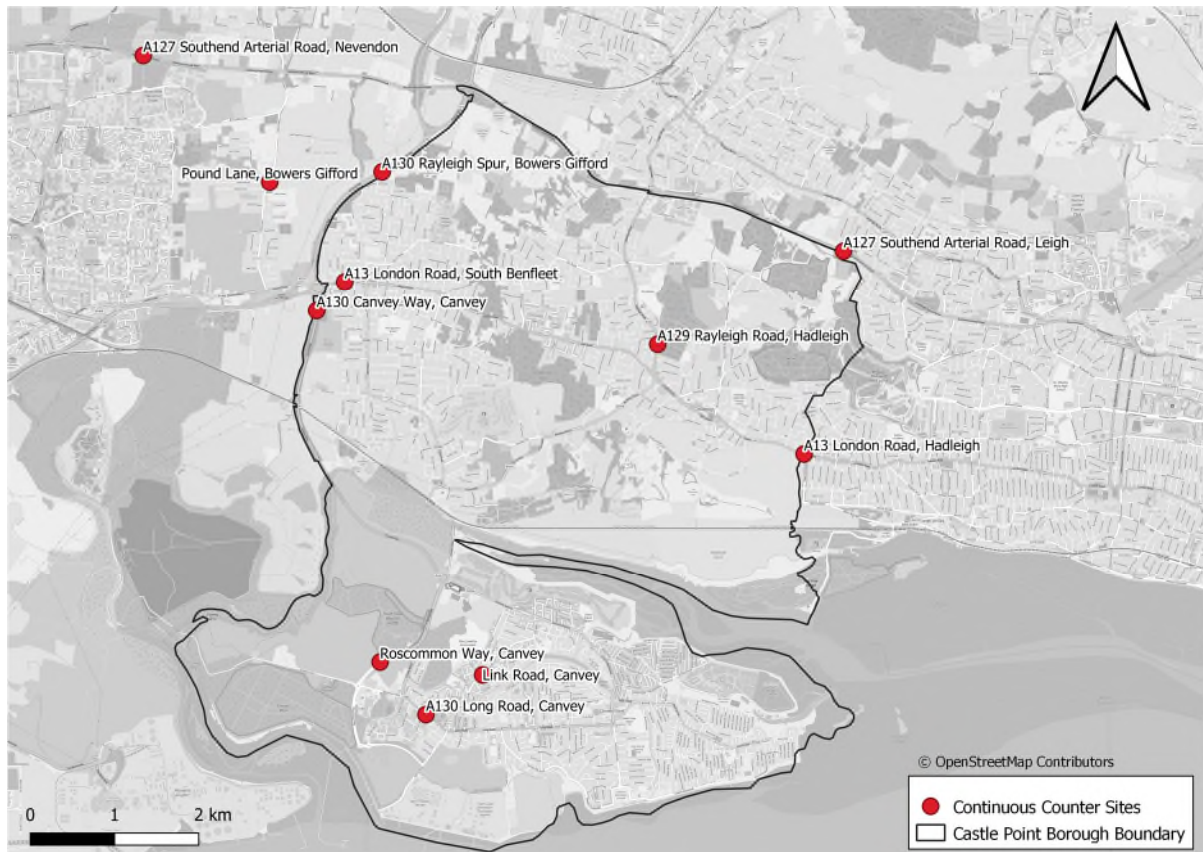
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Figure 1: Continuous Counter locations

Pre and post Covid-19 traffic flows were compared at each counter location for the three time periods defined below:

- AM Peak: 07:30 – 08:30
- IP: 10:00 – 16:00
- PM Peak: 17:00 – 18:00

These times are consistent with those used in the South Essex model.

A t-test analysis was carried out to determine whether there were any significant differences between the sampled, pre and post Covid-19 counts. The test considered the difference in the mean and the difference in the variation of the two samples.

Table 1 shows the pre and post-Covid19 average daily flows (ADF) for each counter location for the times outlined above and the results of the t-test. Section 3 below summarises the findings of this statistical analysis.

Essex Highways

Counter Location	Weekday ADF - AM: 07:30 - 08:30				Weekday ADF -PM: 17:00 - 18:00			
	Pre-Covid 19 (2019)	Post-Covid 19 (2024)	Statistically Significant Difference	% Difference	Pre-Covid 19 (2019)	Post-Covid 19 (2024)	Statistically Significant Difference	% Difference
A130 Canvey Way - Northbound	1,495	1,422	Y	-4.88%	641	695	Y	8.32%
A130 Canvey Way - Southbound	581	638	Y	9.71%	1,130	983	Y	-13.00%
Pound Lane – Northbound	477	311	Y	-34.90%	211	184	Y	-12.82%
Pound Lane - Southbound	192	193	N	0.82%	477	341	Y	-28.39%
A130 Rayleigh Spur – Northeastbound	2,825	3,052	Y	8.05%	2,560	2,956	Y	15.46%
A130 Rayleigh Spur – Southwestbound	2,315	2,392	Y	3.30%	2,655	2,617	N	-1.41%
A127 Southend Arterial Rd, Leigh - Eastbound	2,574	2,442	Y	-5.14%	2,663	2,566	Y	-3.64%
A127 Southend Arterial Rd, Leigh - Westbound	2,841	2,649	Y	-6.75%	2,707	2,523	Y	-6.80%
A127 Southend Arterial Rd, Nevendon - Eastbound	1,983	1,761	Y	-11.24%	3,124	2,943	Y	-5.80%
A127 Southend Arterial Rd, Nevendon - Westbound	3,376	3,052	Y	-9.61%	2,036	1,811	Y	-11.08%
A13 London Road, South Benfleet - Eastbound	1,271	1,101	Y	-13.44%	1,958	1,670	Y	-14.71%
A13 London Road, South Benfleet - Westbound	2,016	1,542	Y	-23.50%	981	846	Y	-13.74%
A129 Rayleigh Road - Northbound	659	590	Y	-10.48%	690	650	Y	-5.91%
A129 Rayleigh Road - Southbound	646	670	Y	3.48%	687	736	Y	7.12%
A13 London Road, Hadleigh - Eastbound	1,205	1,135	Y	-5.81%	1,168	1,089	Y	-6.82%
A13 London Road, Hadleigh - Westbound	1,225	1,107	Y	-9.60%	1,167	1,057	Y	-9.50%
Roscommon Way, Canvey - Northeastbound	118	146	Y	23.46%	184	229	Y	24.52%
Roscommon Way, Canvey - Southwestbound	135	206	Y	52.78%	308	316	N	2.56%
Link Road, Canvey – Northeastbound	211	211	N	0.00%	315	302	Y	-4.09%
Link Road, Canvey - Southwestbound	302	327	Y	8.19%	316	303	Y	-4.15%
A130 Long Road, Canvey – Northwestbound	899	827	Y	-8.00%	437	449	N	2.55%
A130 Long Road, Canvey – Southwestbound	351	378	Y	7.60%	735	672	Y	-8.55%

ADF – Average Daily Flow (Based on non-neutral month – excluding weekends and bank holiday

3.   Pre and Post Covid-19 comparisons – Summary of findings

The statistical significance of the difference is not just based on the difference between the two mean values but also the difference in variation across the traffic flow ranges for the two scenarios (time periods). Therefore, although the difference between the AADT flows may appear small, there is still a statistical significance between the two scenarios due to the difference in variance across traffic flows within the stated time periods.

Results show that 2024 traffic flows are, by and large, statistically different to traffic conditions in 2019 at the selected sites within and near to Castle Point Borough. Therefore, the use of the A127 MRN Core Plus model where traffic has been adjusted to post Covid-19 patterns is justified.