

PROJECT	FP-64 EAST MERSEA
LOCATION	#VALUE!
LOC. DESC.	TP & 40mph repeater opp. restaurant, 120m W of j/w Church Ln
START DATE	Sat 11 Nov, 2017
END DATE	Fri 17 Nov, 2017
SPEED LIMIT	40mph
SURVEY TYPE	7-day ATC, 15min periods, 10 veh. classes



A 7-day automatic traffic count on East Rd, East Mersea, commencing Sat 11 Nov 2017, recorded a total of 12,574 vehicles. The posted speed limit of 40mph was exceeded by 24.8% of vehicles, and the seasonally adjusted, combined AADT value is 2,058 (see 'Equipment & methodology' below).

SUMMARY

COMBINED

Total recorded volume	12,574
Avg daily volume (based on 7 days)	1,796.3
Average daily speed (7 days)	36.7mph
Average daily 85%ile (7 days)	42.8mph
AADT (annual average daily traffic)	2,058

Avg weekday volume (Mon-Fri, 24hrs)	1,700.0
Avg weekday speed (Mon-Fri, 24hrs)	36.9mph
Avg 12hr weekday volume (Mon-Fri, 0700-1900)	1,460.2
Avg 12hr weekday speed (Mon-Fri, 0700-1900)	35.8mph

EASTBOUND →

Total recorded volume	6,285
Avg daily volume (based on 7 days)	897.9
Average daily speed (7 days)	37.3mph
Average daily 85%ile (7 days)	43.1mph
% of vehicles exceeding 40mph	27.1%

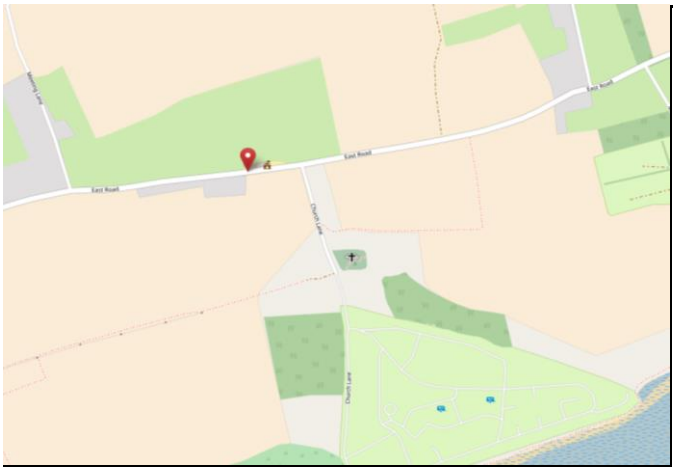
Avg weekday volume (Mon-Fri, 24hrs)	858.4
Avg weekday speed (Mon-Fri, 24hrs)	37.4mph
Avg 12hr weekday volume (Mon-Fri, 0700-1900)	723.8
Avg 12hr weekday speed (Mon-Fri, 0700-1900)	36.2mph
Avg 12hr weekday 85%ile (Mon-Fri, 0700-1900)	43.4mph
AM avg peak period (Mon-Fri)	10:15
PM avg peak period (Mon-Fri)	15:45

WESTBOUND ←

Total recorded volume	6,289
Avg daily volume (based on 7 days)	898.4
Average daily speed (7 days)	36.1mph
Average daily 85%ile (7 days)	42.5mph
% of vehicles exceeding 40mph	22.6%

Avg weekday volume (Mon-Fri, 24hrs)	841.6
Avg weekday speed (Mon-Fri, 24hrs)	36.5mph
Avg 12hr weekday volume (Mon-Fri, 0700-1900)	736.4
Avg 12hr weekday speed (Mon-Fri, 0700-1900)	35.5mph
Avg 12hr weekday 85%ile (Mon-Fri, 0700-1900)	42.8mph
AM avg peak period (Mon-Fri)	08:15
PM avg peak period (Mon-Fri)	14:30

SITE LOCATION

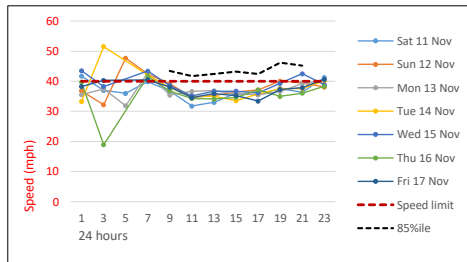


Map © OpenStreetMap contributors

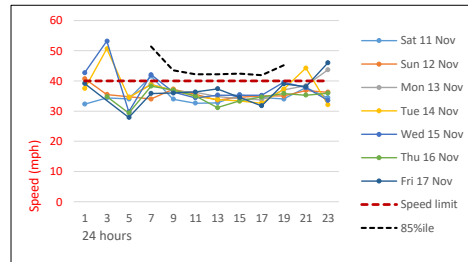
Location	East Rd, East Mersea
Desc.	TP & 40mph repeater opp. restaurant, 120m W of j/w
OSGR	604850, 214383
Lat, lng.	51.790580, 0.968944
Project & site	FP-644-0
PSL	40mph
Bus route	No
Direction 1	Eastbound→
Direction 2	Westbound←

HOURLY SPEEDS

EASTBOUND →



WESTBOUND ←

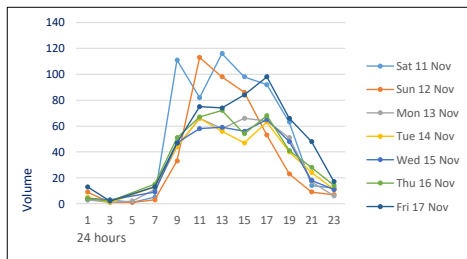


Average hourly speeds (solid thin colours) and 85%ile (dashed black) compared against 40mph posted speed limit (dashed red). The 85%ile is the speed at which 85% of all vehicles are observed to travel under free flowing conditions. A minimum of ten vehicles per speed bin is required for this calculation, hence the overnight low-volume 85%ile values may be zero.

The peak average eastbound daytime speed was 44.8mph at 09:15 on Sat 11 Nov, whilst the peak average westbound speed was 45.6mph at 18:15 on Fri 17 Nov (based on 15min averages between 0700 & 1900).

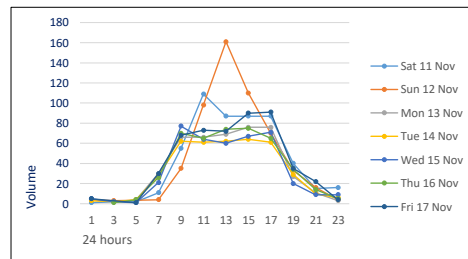
HOURLY VOLUMES

EASTBOUND →



Hourly eastbound traffic volumes over each 24hr period for 7 days from all available data.

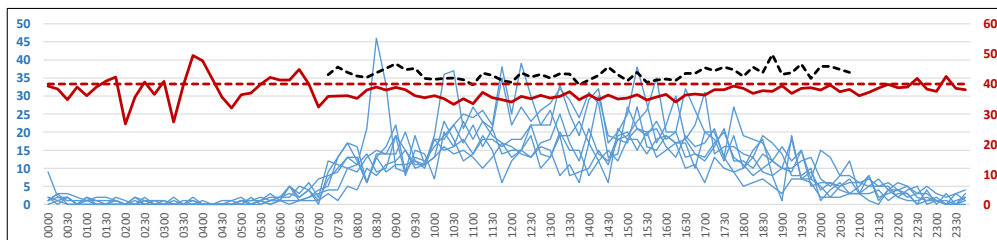
WESTBOUND ←



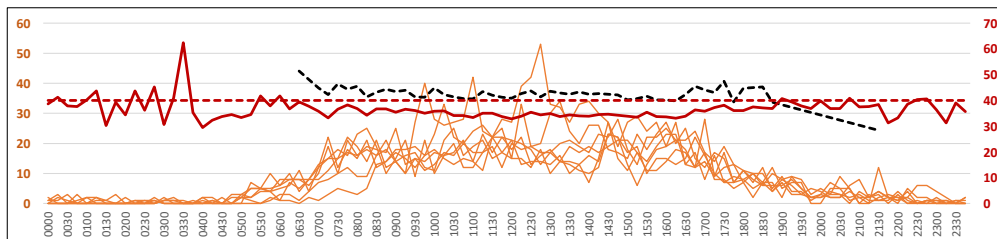
Hourly westbound traffic volumes over each 24hr period for 7 days from all available data.



15min VOL & SPEED



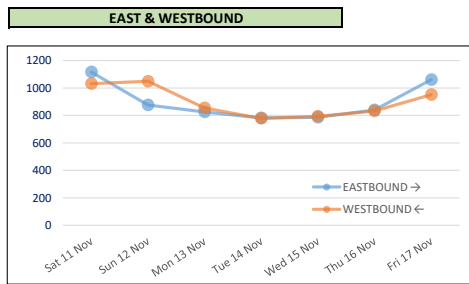
15min daily eastbound flows (blue), against the average speed (red) and 85%ile (dotted black) for each 15min period over the 7-day period.



15min daily westbound flows (orange), against the average speed (red) and 85%ile (dotted black) for each 15min period over the 7-day period.



DAILY VOLUMES



Total 24hr eastbound (blue) and westbound (orange) traffic volumes over 7 consecutive days from all available data.

Unusually, the lowest volumes were NOT recorded on a Sunday but on the Tuesday, whilst the highest was on the Saturday.

5-DAY AVERAGE CLASSES

EASTBOUND 5-DAY AVG →

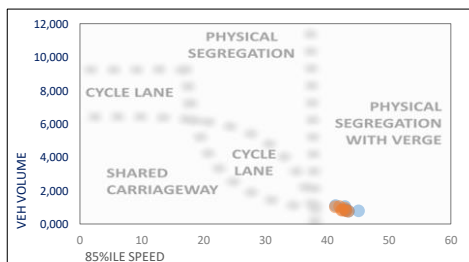
TIME	MOTOR CYCLES	CARS / LGV1	LGV2 / MGV	HGV RIGID	HGV ARTIC'D	TOTAL
0000	0.0	5.4	0.4	0.0	0.0	5.8
0100	0.0	1.8	0.0	0.0	0.0	1.8
0200	0.0	1.2	0.6	0.0	0.0	1.8
0300	0.0	1.8	0.0	0.0	0.0	1.8
0400	0.0	0.2	0.2	0.0	0.0	0.4
0500	0.0	2.4	1.8	0.0	0.0	4.2
0600	0.0	10.0	2.0	0.0	0.2	12.2
0700	0.4	28.8	6.8	0.0	0.2	36.2
0800	0.6	40.8	5.0	0.2	0.0	46.6
0900	0.0	45.0	9.2	0.0	0.4	54.6
1000	0.2	59.4	6.8	0.0	0.0	66.4
1100	1.2	54.2	8.2	0.2	0.8	64.6
1200	0.4	56.8	6.4	0.2	0.0	63.8
1300	0.6	54.2	7.0	0.2	0.2	62.2
1400	1.0	55.2	4.2	0.4	0.6	61.4
1500	2.0	72.8	5.0	0.2	0.6	80.6
1600	0.8	62.8	7.6	0.0	0.4	71.6
1700	0.2	62.4	4.0	0.0	0.0	66.6
1800	0.0	45.2	4.0	0.0	0.0	49.2
1900	0.0	40.8	1.6	0.0	0.0	42.4
2000	0.4	25.4	1.2	0.0	0.0	27.0
2100	1.2	18.0	0.4	0.0	0.0	19.6
2200	0.0	10.8	1.0	0.0	0.0	11.8
2300	0.2	5.4	0.2	0.0	0.0	5.8
12hr TTL	7.4	637.6	74.2	1.4	3.2	723.8
24hr TTL	9.2	760.8	83.6	1.4	3.4	858.4
	1%	89%	10%	0%	0%	

WESTBOUND 5-DAY AVG ←

TIME	MOTOR CYCLES	CARS / LGV1	LGV2 / MGV	HGV RIGID	HGV ARTIC'D	TOTAL
0000	0.0	2.6	0.0	0.0	0.0	2.6
0100	0.0	1.0	0.0	0.0	0.0	1.0
0200	0.0	0.0	1.0	0.0	0.0	1.0
0300	0.0	0.4	1.2	0.0	0.0	1.6
0400	0.0	2.2	0.6	0.0	0.0	2.8
0500	0.0	13.8	2.6	0.0	0.0	16.4
0600	0.0	22.6	4.2	0.0	0.2	27.0
0700	1.4	52.0	6.8	0.0	0.0	60.2
0800	0.4	62.4	5.6	0.0	0.2	68.6
0900	0.6	53.4	6.4	0.0	0.0	60.4
1000	0.2	57.6	7.6	0.0	0.4	65.8
1100	0.6	60.8	8.4	0.0	0.2	70.0
1200	0.8	60.0	6.4	0.2	0.0	67.4
1300	0.6	52.4	7.6	0.0	0.0	60.6
1400	1.4	64.8	8.2	0.0	0.0	74.4
1500	0.8	56.0	4.2	0.0	0.4	61.4
1600	1.2	62.4	8.8	0.2	0.2	72.8
1700	0.2	43.0	2.4	0.0	0.2	45.8
1800	0.8	26.0	2.2	0.0	0.0	29.0
1900	0.0	18.6	2.2	0.0	0.0	20.8
2000	0.0	12.6	0.6	0.0	0.0	13.2
2100	0.4	10.6	0.2	0.0	0.0	11.2
2200	0.0	5.2	0.2	0.0	0.0	5.4
2300	0.0	2.2	0.0	0.0	0.0	2.2
12hr TTL	9.0	650.8	74.6	0.4	1.6	736.4
24hr TTL	9.4	742.6	87.4	0.4	1.8	841.6
	1%	88%	10%	0%	0%	

Average daily eastbound and westbound volumes by class (condensed to the AQMA scheme), including 12hr totals for 0700-1900 and overall average percentages. Calculated from all available data over 5 days.

CYCLE PROVISION



The diagram compares total daily traffic flow (vertical axis) against the average daily 85th percentile speed (horizontal axis) to demonstrate cyclist and vulnerable user considerations.

The guidelines are based on the Sustrans Design Manual (Apr 2014); Understanding User Needs, part 2.

Valid 85th percentiles are required to plot the graph.

METHODOLOGY

Equipment & methodology

Automatic traffic counts are undertaken using a pair of pneumatic tubes installed securely across the carriageway, one metre apart, recording air pulses to determine vehicle speed, class and volume. The ATC equipment generally remains in place for a consecutive seven day period, and the data analysed post-survey.

In queuing conditions, the accuracy of ATC recording equipment will reduce as follows;

- 20 – 30mph: potential reduction of 9% accuracy in volume values
- 10 – 20mph: potential reduction of 26% accuracy in volume values
- 00 – 10mph: potential reduction of 39% accuracy in volume values

These figures are based on multiple ATC results compared against accepted reference values from resilient manual counts.

AADTs are calculated using the seasonal COBA methodology; DMRB Vol. 13, Pt 4: Traffic Input To COBA, with formulae available in the (hidden) config worksheet.

Weather & environmental

Inclement conditions during winter months or outbreaks of unseasonable weather may affect survey data collection. This can result in distorted traffic flows or unusable data and should be considered prior to survey approval. Although forecast checks are made prior to the survey commencing, Essex Highways cannot be held responsible for the forecast accuracy.

Equipment damage & failure

Although checked intermittently the equipment remains unmanned for much of the duration of the survey, and can potentially be interfered with, vandalised, damaged or stolen and Essex Highways cannot be held responsible for any periods where data has not been captured.

The equipment is located in accordance with the details provided by the client and Essex Highways cannot be held responsible for the accuracy of the data or loss of equipment due to theft and vandalism.

Roadworks & events

Where possible, roadworks checks are made 10 days before, and 48 hours before, the survey commences. Additionally, influencing major local events are also monitored, covering the immediate vicinity of the surveys and any routes likely to affect the outcome of the survey.

CLASS	ABBREV.	DESCRIPTION	LENGTH	COBA	AQMA	MANUAL
1	MC	Motorcycle	SHORT Up to 5.5m	N/A	MC	MC
2	SV	Cars, taxis, 4WD, vans		CAR & LGV	CAR	CAR & LGV1
3	SVT	Class 2 plus trailer	MEDIUM 5.5m to 14.5m	OGV1 & PSV	LGV & MGW	LGV2 & PSV
4	TB2	2 axle truck / bus		OGV1		MGV & PSV
5	TB3	3 axle truck / bus			HGV RIGID	HGV1
6	T4	4 axle truck	LONG 11.5m to 19.0m	OGV2	HGV ARTIC	HGV2
7	ART3	3 axle articulated				
8	ART4	4 axle articulated				
9	ART5	5 axle articulated				
10	ART6	6+ axle articulated				

Vehicle classifications

Vehicles recorded by the ATC are placed into one of ten classes based on axle spacing and pattern. This scheme is based on the AustRoad 94 algorithm and modified for UK traffic, referred to as ARX. The table on the left aligns the ARX classifications with the COBA Chapter 8 (Vol 13, Sec 1) classifications, AQMA (air quality management standard) and the Essex 9-class, as used in manual junction counts undertaken by Essex Highways.

Under adverse conditions the accuracy of ATC classifications will deteriorate and an appropriate link count should be used for validation.

Disclaimer

Although every attempt is made to achieve accuracy, neither Essex County Council nor Essex Highways may be held liable for errors of fact or interpretation.

Generated	27 Nov 2017	v6.6
FP-644-03-20 App 7 – Speed and Traffic Count Survey.xlsx		

