

## **Road Traffic Collision Data**

### **Proposed Level Crossing Closures**

Task Ref:	RSA-18-389
Date produced:	17/07/2018
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## 1. Aim

This document summarises road traffic collision data relevant to proposed level crossing closures in Essex. It uses STATS19 data for the period 2013 to 2017 for collisions which occurred in the 12 districts covered by Essex County Council. STATS19 data comprises road traffic collisions resulting in personal injury which occurred on the public highway and were reported to the Police.

At the time of writing the data for 2017 has not been finalised for publication by the Department for Transport. We are aware of 3 fatal, 19 serious and 63 slight injury collisions which could be added to the Essex Police<sup>1</sup> data for 2017 before it is published. Data for these collisions is not included in this document.

## 2. Annual Figures

The following tables show the total number of recorded collisions and casualties by year. Collision severity is determined by the most severely injured casualty involved in that collision.

Collisions				
Year	Fatal	Serious	Slight	Total
2013	34	478	2,559	3,071
2014	32	532	2,709	3,273
2015	36	541	2,432	3,009
2016	47	693	2,223	2,963
2017	36	648	1,882	2,566
<b>Total</b>	<b>185</b>	<b>2,892</b>	<b>11,805</b>	<b>14,882</b>

Casualties				
Year	Fatal	Serious	Slight	Total
2013	34	538	3,428	4,000
2014	35	586	3,731	4,352
2015	37	596	3,320	3,953
2016	51	780	3,151	3,982
2017	37	716	2,744	3,497
<b>Total</b>	<b>194</b>	<b>3,216</b>	<b>16,374</b>	<b>19,784</b>

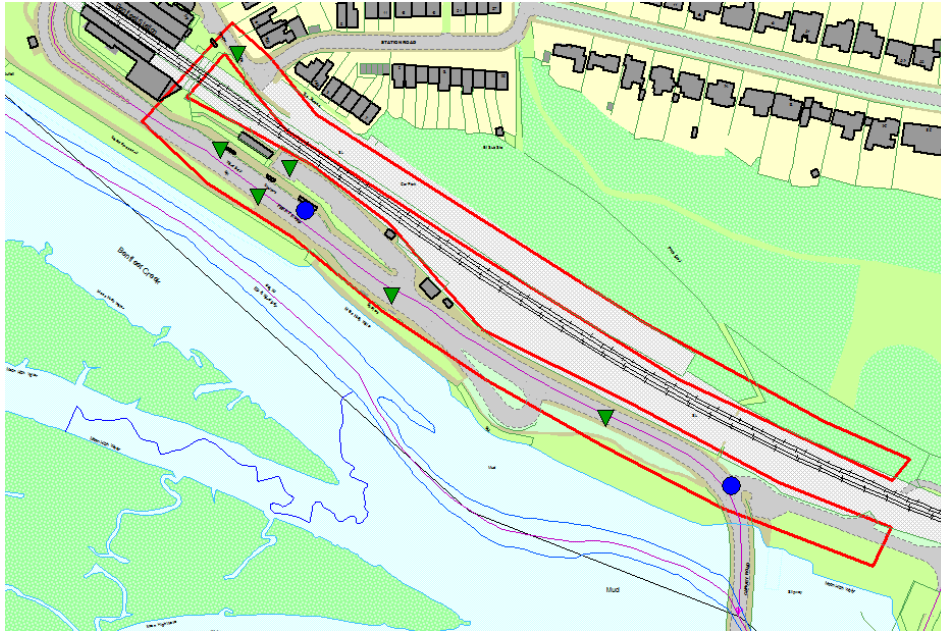
NOTE: In November 2015 the way casualty severity is recorded was changed, resulting in a jump in the number of recorded serious injuries, and a corresponding drop in the number of slight injuries.

<sup>1</sup> Includes the Southend-on-Sea and Thurrock unitary authorities

### 3. Data for diversion routes – updated 17/07/2018

Data for all sites in this section is for the 5 year period 01/04/2013 to 31/03/2018. This period pre-dates any diversion routes so does not allow a measurement of the future risk to pedestrians who currently use the existing footpaths.

#### a. E30/E31 Ferry and Brickyard Farm South Benfleet


**Collisions:**

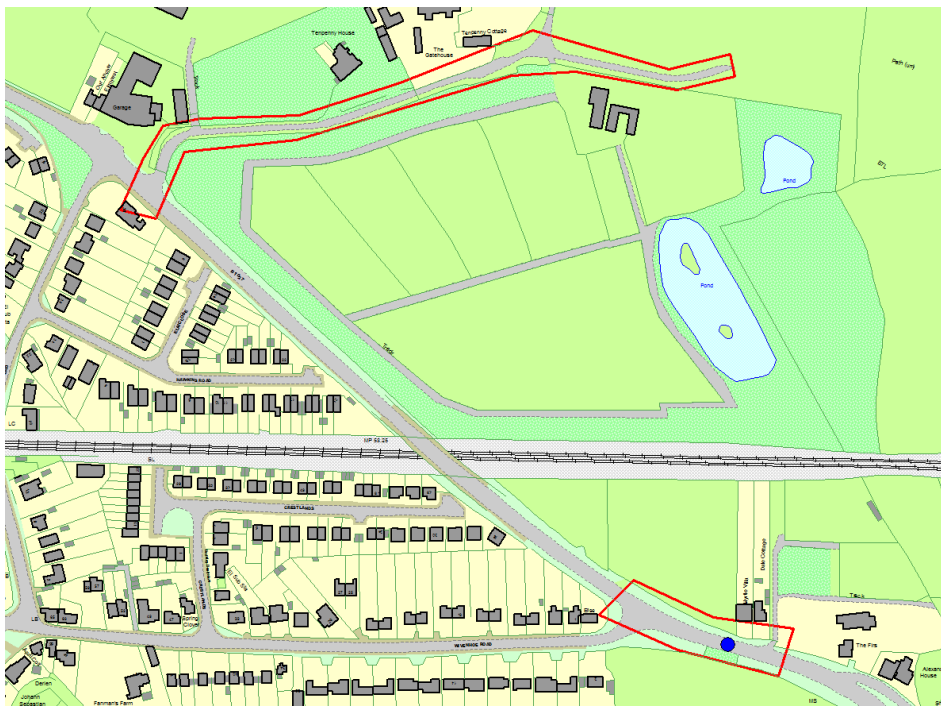
2 Serious  
6 Slight

**Casualties:**

Serious –  
1 x pedestrian  
1 x motorcycle

Slight –  
4 x pedestrian  
1 x motorcycle  
1 x vehicle  
driver  
1 x passenger

#### b. E43 High Elm Alresford


**Collisions:**

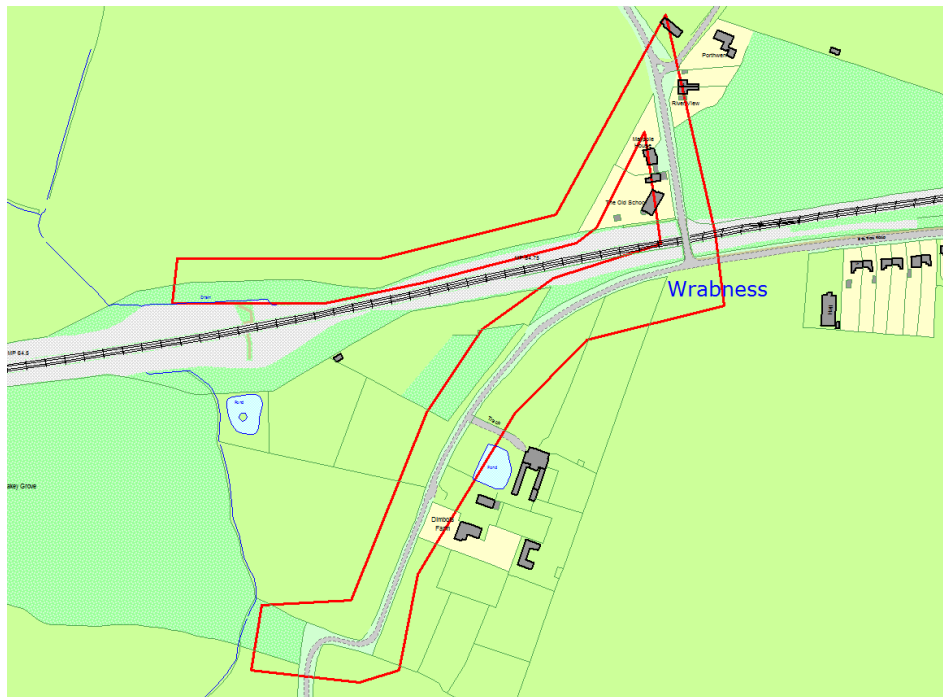
1 Serious

**Casualties:**

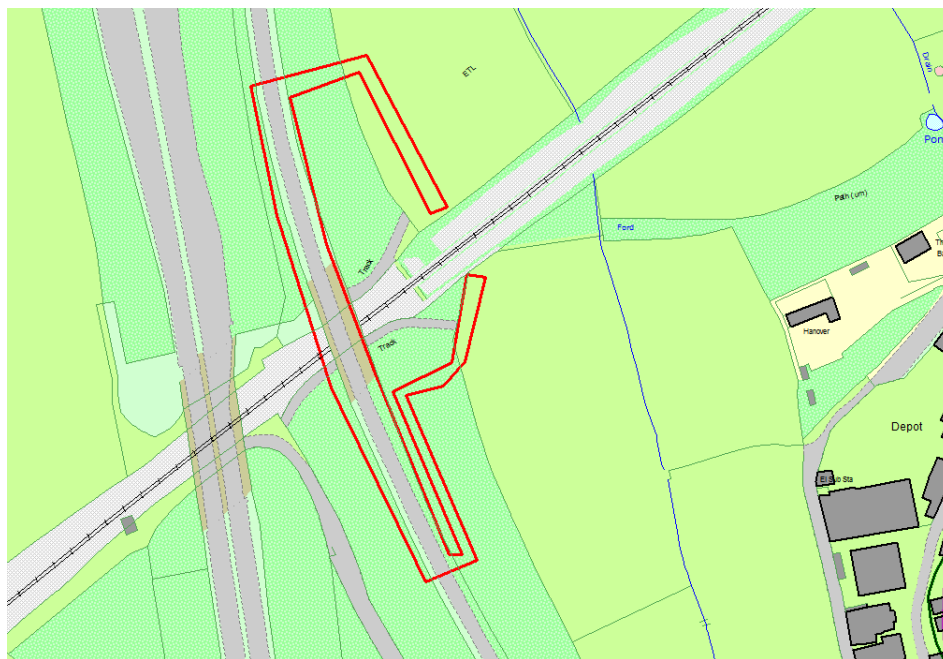
Serious –  
1 x car driver





e. E48 Wheatsheaf Wrabness

**Collisions:**  
None

f. E38 Battlesbridge

**Collisions:**  
None

#### 4. Road Type

The table below shows the annual average number of collisions by severity for each road type.

Annual average collisions			
Road Type	Fatal	Serious	Slight
Motorway	2.2	24.6	118.8
A-road dual carriageway	7.2	66.4	300.6
A-road single carriageway	8.4	117.4	499.6
B/C roads	6.6	128.8	452.4
Unclassified roads	12.6	241.2	989.6

The Severity Ratio is the proportion of all injury-collisions which are classed as either serious or fatal. The table below shows that B/C roads have the highest severity ratio, meaning that in the event of a collision, these are the roads where the injuries are most likely to be fatal or serious.

Road Type	Severity ratio
Motorway	18.4%
A-road dual carriageway	19.7%
A-road single carriageway	20.1%
B/C roads	23.0%
Unclassified roads	20.4%

Data on carriageway lengths makes it possible to calculate the number of collisions per unit of carriageway length.

Road Type	Carriageway length (km)	KSI collisions per 10km	All collisions per 10km
Motorway	358	0.75	4.07
A-road dual carriageway	331	2.22	11.31
A-road single carriageway	555	2.27	11.27
B/C roads	2,381	0.57	2.47
Unclassified roads	4,607	0.55	2.70

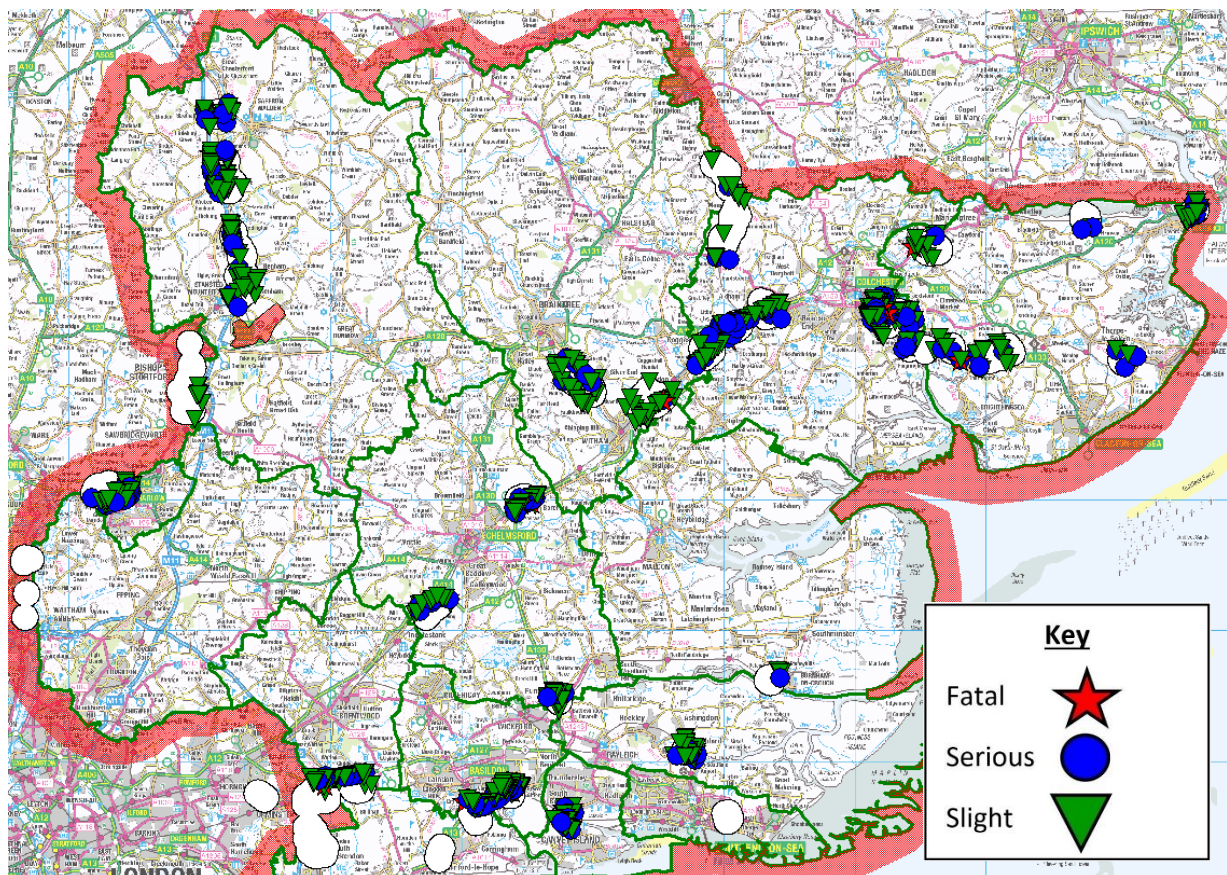
## ROAD TRAFFIC COLLISION ANALYSIS

### 5. Level crossing 1km buffer zones

The table below shows the proportion of all recorded collisions which occurred within a 1km radius of a level crossing.

Severity	Percent within 1km of a level crossing
Fatal	10%
Serious	8%
Slight	9%

The locations of these collisions are illustrated on the map below:



In numerical terms, this comprises:

- 18 fatal collisions
- 238 serious collisions
- 1,082 slight collisions
- 18 fatal casualties
- 255 serious casualties
- 1,480 slight casualties

....over the 5 year period covered by this report

## 6. TAG values

The DfT produce a data book which estimates the various costs associated with road traffic collisions. It is available to download at:

<https://www.gov.uk/government/publications/webtag-tag-data-book-march-2017>

2018 TAG values		Fatal	Serious	Slight
Per-casualty values	Lost Output	£727,712	£28,786	£3,584
	Human Costs	£1,430,221	£196,136	£17,077
	Medical & Ambulance	£6,466	£17,278	£1,520
	<b>Total</b>	<b>£2,164,399</b>	<b>£242,200</b>	<b>£22,182</b>
Per-collision values	Police	£21,349	£2,506	£647
	Damage to Property	£13,111	£5,980	£3,533
	Insurance & Admin	£358	£223	£135
	<b>Total</b>	<b>£34,818</b>	<b>£8,709</b>	<b>£4,315</b>

A large component of the “Human costs” is defined as the amount of money a sample of the population would be willing to pay for safety improvements in order to avoid the distress and grief resulting from death and injury on the roads. The report “IAM Roadsmart, Evaluating the costs of incidents from the public sector perspective” draws out the ‘cashable’ costs to society, such as ongoing health and social care (H&SC), from the non-cashable component of the human costs. Applying this to current TAG values gives us an estimate of the total financial cost to the economy for each collision and casualty.

'Cashable' 2018 TAG values		Fatal	Serious	Slight
Per-casualty values	Lost Output	£727,712	£28,786	£3,584
	Ongoing H&SC (cashable human costs)	£8,227	£89,047	£9,714
	Medical & Ambulance	£6,466	£17,278	£1,520
	<b>Total</b>	<b>£742,404</b>	<b>£135,110</b>	<b>£14,818</b>
Per-collision values	Police	£21,349	£2,506	£647
	Damage to Property	£13,111	£5,980	£3,533
	Insurance & Admin	£358	£223	£135
	<b>Total</b>	<b>£34,818</b>	<b>£8,709</b>	<b>£4,315</b>

The IAM Roadsmart document is available here:

<https://www.iamroadsmart.com/media-and-policy/research-and-policy/researches-list/evaluating-the-costs-of-incidents-from-the-public-sector-perspective>

There are on average 1.05 fatalities per fatal collision, 1.11 serious casualties per serious collision and 1.39 slight injuries per slight collision. Applying these figures to the collision and casualties costs gives us the following typical total costs per collision:

	Fatal	Serious	Slight
Financial cost of average collision	£815,205.76	£158,419.06	£24,867.94
Non cashable cost	£1,421,994.61	£107,089.35	£7,363.63
<b>Total cost</b>	<b>£2,237,200.37</b>	<b>£265,508.42</b>	<b>£32,231.57</b>



## ROAD TRAFFIC COLLISION ANALYSIS



Applying the TAG values to the collisions within the 1km buffer zones of level crossings gives us:

Data period (years)		Collisions within 1km radius of level crossings				
5		Fatal	Serious	Slight	KSI	Period total
Area Totals						Annual average
	Casualties	18	255	1,480	273	1,753
	Collisions	18	238	1,082	256	1,338
Per-casualty values						
	Lost Output	£727,712	£28,786	£3,584		
	Human Costs	£1,430,221	£196,136	£17,077		
	Medical & Ambulance	£6,466	£17,278	£1,520		
Per-collision values						
	Police	£21,349	£2,506	£647		
	Damage to Property	£13,111	£5,980	£3,533		
	Insurance & Admin	£358	£223	£135		
Total casualty costs						
	Lost Output	£13,098,812	£7,340,438	£5,304,272	£20,439,250	£25,743,522
	"Non-cashable" human costs	£25,595,903.04	£27,307,785.24	£10,898,172.46	£52,903,688	£63,801,861
	Medical & Ambulance	£116,380	£4,405,776	£2,250,136	£4,522,156	£6,772,293
	Ongoing Health & Social Care	£148,079	£22,706,893	£14,376,061	£22,854,971	£37,231,033
Total collision costs						
	Police	£384,276	£596,338	£699,549	£980,614	£1,680,163
	Damage to Property	£236,005	£1,423,241	£3,822,763	£1,659,245	£5,482,008
	Insurance & Admin	£6,449	£53,051	£146,485	£59,500	£205,985
Total cost to society		£39,585,904	£63,833,522	£37,497,439	£103,419,426	£140,916,865
Total financial cost		£13,990,001	£36,525,736	£26,599,266	£50,515,738	£77,115,004
Total public sector		£648,735	£27,709,007	£17,325,746	£28,357,742	£45,683,488
						<b>£28,183,373</b>
						<b>£15,423,001</b>
						<b>£9,136,698</b>

## Notes:

- 1) Human Costs comprise costs people would be willing to incur to prevent the casualty, and is not a cashable financial amount.
- 2) Health & Social Care costs are a combination of Medical & Ambulance costs and the direct cashable component of Human Costs. This figure is taken from the document "IAM Roadsmart, Evaluating the costs of incidents from the public sector perspective".
- 3) Total financial cost is the total cost to society minus the non-cashable component of human costs.

The table above shows these collisions cost the public sector over £9 million per year with a total financial cost of nearly £15.5 million per year.