

Evidence of the Problem

Observed Boom Gate Closure Data

Observed boom gate closure data for the morning peak has been extracted from VicRoads' traffic signal system, Sydney Coordinated Adaptive Traffic System (SCATS) from a two-week period in May 2015.

For level crossings that do not have railway signal linked to traffic light signals, boom gate closure times were estimated based on other adjacent crossings on the same line.

Line	Road Name	Suburb	Road Type	Traffic Volumes - two-way 24 hr weekday average 4-17 May 2015	Boom Gate Closure – percentage of morning peak 4-17 May 2015
Cranbourne - Pakenham	Grange Road	Caulfield East	Arterial	17,100	42%
	Koorng Road	Carnegie	Local	14,900	62%
	Murrumbeena Road	Murrumbeena	Arterial	16,000	61%
	Poath Road	Hughesdale	Local	11,200	54%
	Clayton Road	Clayton	Arterial	21,200	63%
	Centre Road	Clayton	Arterial	20,000	59%
	Corrigan Road	Noble Park	Local	11,600	48%
	Heatherton Road	Noble Park	Arterial	22,300	51%
	Chandler Road	Noble Park	Arterial	16,000	48%
Cranbourne	Abbotts Road	Lyndhurst	Local	22,500	13%
	Thompsons Road	Cranbourne West	Arterial	19,200	16%
Pakenham	Sth Gippsland Hwy	Dandenong South	Arterial	34,000	16%
	Hallam South Road	Hallam	Arterial	19,700	33%
	Clyde Road	Berwick	Arterial	22,400	28%
Frankston	North Road	Ormond	Arterial	37,800	23%
	McKinnon	McKinnon	Local	10,200	36%
	Centre Road	Bentleigh	Arterial	13,700	36%
	Charman Road	Cheltenham	Local	12,300	36%
	Balcombe Road	Mentone	Arterial	16,200	36%
	Edithvale Road	Edithvale	Arterial	13,400	34%

Line	Road Name	Suburb	Road Type	Traffic Volumes - two-way 24 hr weekday average 4-17 May 2015	Boom Gate Closure – percentage of morning peak 4-17 May 2015
	Station Street	Bonbeach	Local	4,400	36%
	Station Street	Carrum	Arterial	11,800	18%
	Eel Race Road	Carrum	Local	5,500	18%
	Seaford Road	Seaford	Arterial	17,400	26%
	Overton Road (Skye Road)	Seaford	Local	9,800	27%
Glen Waverley	Toorak Road	Kooyong	Arterial	38,500	35%
	Burke Road	Glen Iris	Arterial	22,200	32%
Belgrave	Blackburn Road	Blackburn	Arterial	15,600	48%
	Heatherdale Road	Ringwood	Local	9,000	52%
	Mountain Highway	Bayswater	Arterial	39,600	22%
	Scoresby Road	Bayswater	Arterial	21,700	15%
Craigieburn	Buckley Street	Essendon	Arterial	15,000	58%
	Glenroy Road	Glenroy	Arterial	19,500	38%
Upfield	Moreland Road	Brunswick	Arterial	15,800	21%
	Bell Street	Coburg	Arterial	40,600	24%
	Camp Road	Campbellfield	Arterial	20,100	11%
Hurstbridge	Grange Road	Fairfield/Alphington	Arterial	25,400	33%
	Lower Plenty Road	Rosanna	Arterial	16,600	13%
South Morang	Bell Street	Preston	Arterial	52,100	21%
	High Street	Reservoir	Arterial	35,600	21%
Sunbury	Furlong Road	St Albans	Local	14,400	27%
	Main Road	St Albans	Arterial	17,100	52%
	Melton Hwy	Taylors Lake	Arterial	38,100	15%
Werribee	Aviation Road	Laverton	Local	6,800	47%
	Cherry Street	Werribee	Local	20,200	26%
	Werribee Street	Werribee	Arterial	19,800	23%
Lilydale	Manchester Road	Mooroolbark	Local	24,700	26%
	Maroondah Hwy	Lilydale	Arterial	29,000	17%

Line	Road Name	Suburb	Road Type	Traffic Volumes - two-way 24 hr weekday average 4-17 May 2015	Boom Gate Closure – percentage of morning peak 4-17 May 2015
Laverton	Kororoit Creek Road	Altona	Arterial	22,300	11%
Williamstown	Ferguson Street	Williamstown	Arterial	22,300	23%

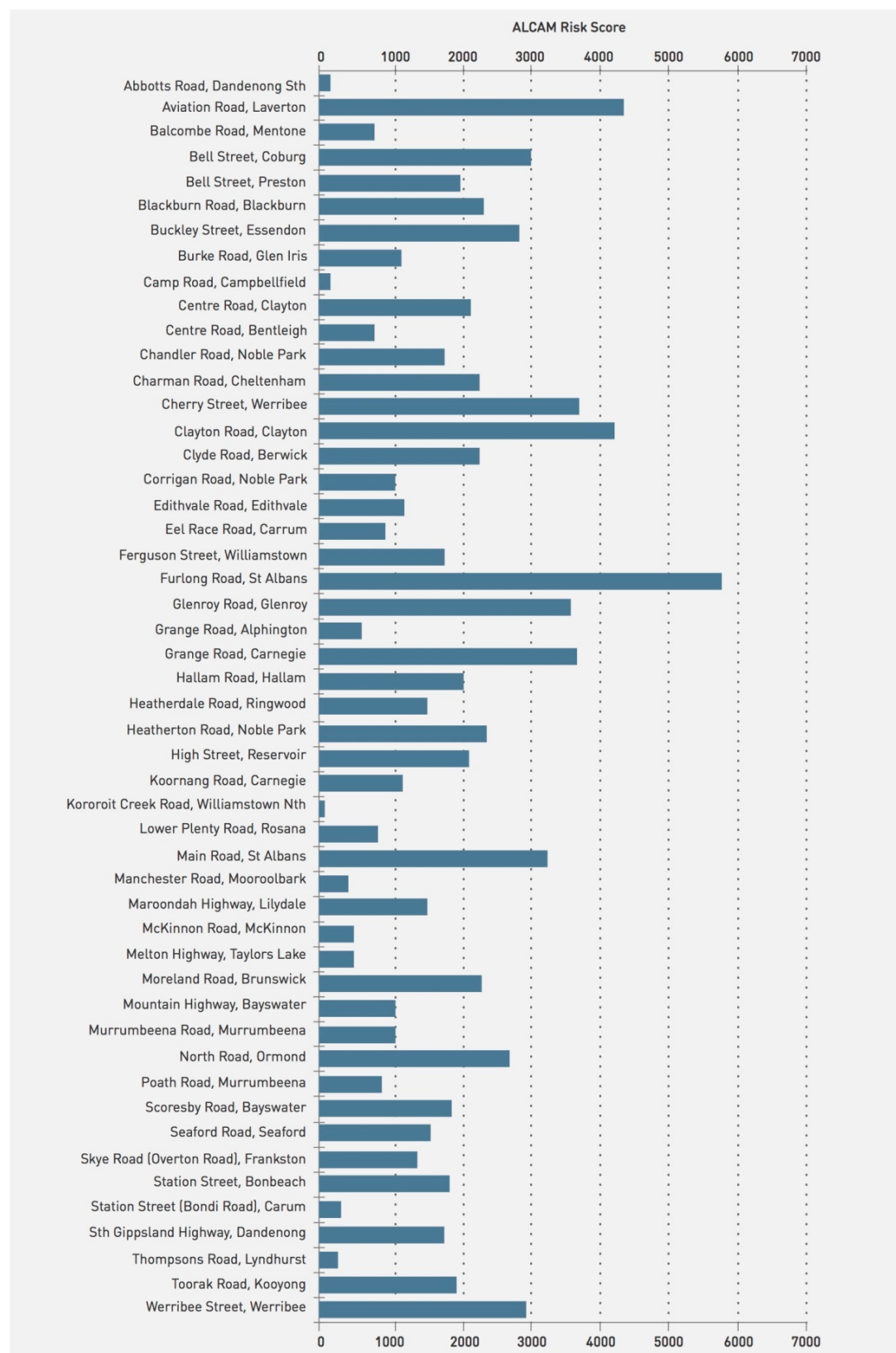
Fatality Occurrence Data: 1 January 2005 to 31 December 2014

In the ten-year period ending 31 December 2014, there have been 20 fatalities at or near a crossing to be removed as part of the level crossing removal program. A full list of the fatality locations and date of occurrence is shown below.

	Road name	Suburb	Date
1	Abbotts Road	Dandenong South	18/11/2008
2	Abbotts Road	Dandenong South	03/11/2012
3	Bell Street	Coburg	23/02/2005
4	Camp Road	Broadmeadows	20/03/2009
5	Centre Road	Bentleigh	10/02/2011
6	Centre Road	Bentleigh	01/04/2014
7	Centre Road	Clayton	01/04/2009
8	Charman Road	Cheltenham	16/03/2012
9	Cherry Street	Werribee	25/05/2012
10	Edithvale Road	Edithvale	15/07/2009
11	Gladstone Street (near High Street)	Reservoir	10/03/2006
12	Main Road	St Albans	08/03/2007
13	Main Road	St Albans	24/01/2012
14	Mc Kinnon Road	McKinnon	29/09/2011
15	Murrumbeena Road	Murrumbeena	27/04/2007
16	Skye Road (Overton Road)	Frankston	03/11/2010
17	Thompsons Road	Cranbourne North	11/04/2008
18	UP end of Platform Ginifer Station	St Albans	10/10/2011
19	Willis Street (near Main Road)	St Albans	04/10/2009
20	Willis St (near Main Road)	St Albans	13/09/2012

ALCAM Risk Score

The Australian Level Crossing Assessment Model (ALCAM) is an assessment tool used to identify key potential risks at level crossings. The risk of a serious incident is present at all 50 level crossings to varying degrees.



Source:
Australian

Level Crossing Assessment Model (2012)

Volume/Capacity ratio on arterial roads, morning peak, 2011 and 2031

Road congestion is often expressed in terms of the ratio of traffic volumes to a measure of the theoretical maximum capacity of a road: the Volume/Capacity (V/C) ratio. As V/C ratios approach 1.0, roads become full and sensitive to change leading to excessive delays, queues and a decline in travel speeds. The figures below show that V/C ratios on many roads, particularly in the inner areas of Melbourne, are already approaching and exceeding this benchmark and that V/C ratios are expected to worsen by 2031, particularly in the growth areas of the outer west, north and south-east.



Source: VITM model projections under current and future transport network and public transport frequency, level crossing remaining, without CPLU and MMRP

Road network use within one kilometre of key rail corridors

Areas in close proximity to rail corridors potentially face the worst deterioration in congestion as rail services and boom gate closures increase in future. VITM transport model projections of future road network use across significant rail corridors/screenlines are summarised below.

2021 Alternative Base Case and 2031 Alternative Base Case are presented in the table below.

	2011	2021	change from 2011 to 2021	2031	change from 2011 to 2031
Lilydale					
Number of Vehicles	119,792	127,731	6.6%	140,258	17.1%
Average Speed	31.33	29.79	-4.9%	27.36	-12.7%
Volume/Capacity Ratio	0.47	0.51	7.2%	0.56	18.1%
AM Peak: Percentage of links with V/C > 0.8	16.7%	16.7%	0.0%	33.3%	100.0%
PM Peak: Percentage of links with V/C > 0.8	16.7%	33.3%	100.0%	38.9%	133.3%
Belgrave					
Number of Vehicles	197,926	205,388	3.8%	221,588	12.0%
Average Speed	31.69	30.70	-3.1%	29.91	-5.6%
Volume/Capacity Ratio	0.38	0.40	4.5%	0.43	14.6%
AM Peak: Percentage of links with V/C > 0.8	4.5%	9.1%	100.0%	9.1%	100.0%
PM Peak: Percentage of links with V/C > 0.8	4.5%	9.1%	100.0%	13.6%	200.0%
Camberwell - Ringwood					
Number of Vehicles	237,013	253,228	6.8%	268,316	13.2%
Average Speed	21.35	22.57	5.7%	21.27	-0.4%
Volume/Capacity Ratio	0.44	0.49	10.5%	0.53	19.1%
AM Peak: Percentage of links with V/C > 0.8	17.9%	21.4%	20.0%	25.0%	40.0%
PM Peak: Percentage of links with V/C > 0.8	25.0%	28.6%	14.3%	32.1%	28.6%
Glen Waverley					
Number of Vehicles	218,605	230,327	5.4%	252,040	15.3%
Average Speed	31.17	30.49	-2.2%	31.09	-0.2%
Volume/Capacity Ratio	0.49	0.51	4.0%	0.56	14.4%
AM Peak: Percentage of links with V/C > 0.8	5.9%	5.9%	0.0%	5.9%	0.0%
PM Peak: Percentage of links with V/C > 0.8	5.9%	5.9%	0.0%	11.8%	100.0%
Cranbourne					
Number of Vehicles	113,065	154,586	36.7%	197,721	74.9%
Average Speed	43.28	39.82	-8.0%	37.57	-13.2%
Volume/Capacity Ratio	0.37	0.44	18.6%	0.50	33.9%
AM Peak: Percentage of links with V/C > 0.8	11.1%	11.1%	0.0%	27.8%	150.0%
PM Peak: Percentage of links with V/C > 0.8	16.7%	16.7%	0.0%	33.3%	100.0%
Pakenham					
Number of Vehicles	292,845	351,007	19.9%	412,100	40.7%
Average Speed	61.05	52.44	-14.1%	45.55	-25.4%
Volume/Capacity Ratio	0.39	0.46	18.1%	0.53	34.6%
AM Peak: Percentage of links with V/C > 0.8	6.3%	15.6%	150.0%	18.8%	200.0%
PM Peak: Percentage of links with V/C > 0.8	9.4%	15.6%	66.7%	21.9%	133.3%
Caulfield - Dandenong					
Number of Vehicles	451,424	489,504	8.4%	535,569	18.6%
Average Speed	37.80	38.67	2.3%	34.59	-8.5%
Volume/Capacity Ratio	0.43	0.47	8.7%	0.52	20.8%
AM Peak: Percentage of links with V/C > 0.8	20.0%	32.5%	62.500%	37.5%	87.5%
PM Peak: Percentage of links with V/C > 0.8	25.0%	40.0%	60.0%	42.5%	70.0%

	2011	2021	change from 2011 to 2021	2031	change from 2011 to 2031
Mordialloc - Frankston					
Number of Vehicles	104,106	105,784	1.6%	115,728	11.2%
Average Speed	24.37	24.41	0.2%	24.34	-0.1%
Volume/Capacity Ratio	0.15	0.15	-0.3%	0.17	9.7%
AM Peak: Percentage of links with V/C > 0.8	2.8%	0.0%	-100.0%	2.8%	0.0%
PM Peak: Percentage of links with V/C > 0.8	2.8%	2.8%	0.0%	2.8%	0.0%
Caulfield - Mordialloc					
Number of Vehicles	328,224	334,274	1.8%	354,691	8.1%
Average Speed	30.64	30.27	-1.2%	28.44	-7.2%
Volume/Capacity Ratio	0.34	0.35	2.4%	0.37	9.8%
AM Peak: Percentage of links with V/C > 0.8	6.0%	6.0%	0.0%	10.0%	66.7%
PM Peak: Percentage of links with V/C > 0.8	6.0%	14.0%	133.3%	14.0%	133.3%
Clifton Hill - Heidelberg					
Number of Vehicles	146,147	161,203	10.3%	171,590	17.4%
Average Speed	21.66	24.91	15.0%	23.94	10.5%
Volume/Capacity Ratio	0.46	0.51	11.5%	0.54	19.0%
AM Peak: Percentage of links with V/C > 0.8	30.0%	35.0%	16.7%	40.0%	33.3%
PM Peak: Percentage of links with V/C > 0.8	30.0%	40.0%	33.3%	40.0%	33.3%
Clifton Hill - South Morang					
Number of Vehicles	244,931	270,126	10.3%	307,101	25.4%
Average Speed	17.52	14.06	-19.8%	16.81	-4.1%
Volume/Capacity Ratio	0.34	0.38	10.6%	0.42	23.2%
AM Peak: Percentage of links with V/C > 0.8	11.1%	13.3%	20.0%	13.3%	20.0%
PM Peak: Percentage of links with V/C > 0.8	8.9%	11.1%	25.0%	15.6%	75.0%
Upfield					
Number of Vehicles	434,787	501,307	15.3%	568,496	30.8%
Average Speed	30.37	32.59	7.3%	29.54	-2.7%
Volume/Capacity Ratio	0.31	0.34	10.6%	0.39	26.0%
AM Peak: Percentage of links with V/C > 0.8	14.5%	16.4%	12.5%	23.6%	62.5%
PM Peak: Percentage of links with V/C > 0.8	12.7%	10.9%	-14.3%	23.6%	85.7%
North Melbourne - Glenroy					
Number of Vehicles	331,697	370,845	11.8%	414,855	25.1%
Average Speed	46.92	40.79	-13.1%	40.26	-14.2%
Volume/Capacity Ratio	0.47	0.48	2.6%	0.54	14.2%
AM Peak: Percentage of links with V/C > 0.8	20.0%	30.0%	50.0%	33.3%	66.7%
PM Peak: Percentage of links with V/C > 0.8	20.0%	33.3%	66.7%	40.0%	100.0%
Sunbury					
Number of Vehicles	363,522	414,498	14.0%	517,209	42.3%
Average Speed	49.46	57.51	16.3%	55.79	12.8%
Volume/Capacity Ratio	0.44	0.44	0.4%	0.52	19.2%
AM Peak: Percentage of links with V/C > 0.8	18.8%	12.5%	-33.3%	21.9%	16.7%
PM Peak: Percentage of links with V/C > 0.8	21.9%	15.6%	-28.6%	25.0%	14.3%
Werribee					
Number of Vehicles	275,686	324,036	17.5%	357,687	29.7%
Average Speed	52.35	50.17	-4.2%	49.46	-5.5%
Volume/Capacity Ratio	0.30	0.35	16.3%	0.37	25.8%
AM Peak: Percentage of links with V/C > 0.8	24.0%	28.0%	16.7%	28.0%	16.7%
PM Peak: Percentage of links with V/C > 0.8	12.0%	28.0%	133.3%	24.0%	100.0%
Newport - Laverton via Altona					
Number of Vehicles	36,018	38,530	7.0%	41,831	16.1%
Average Speed	25.69	24.70	-3.9%	24.41	-5.0%
Volume/Capacity Ratio	0.13	0.14	6.4%	0.15	16.2%
AM Peak: Percentage of links with V/C > 0.8	0.0%	0.0%	0.0%	0.0%	0.0%
PM Peak: Percentage of links with V/C > 0.8	0.0%	0.0%	0.0%	0.0%	0.0%

	2011	2021	<i>change from 2011 to 2021</i>	2031	<i>change from 2011 to 2031</i>
Williamstown - Footscray					
Number of Vehicles	274,813	287,933	4.8%	262,435	-4.5%
Average Speed	50.63	48.71	-3.8%	47.38	-6.4%
Volume/Capacity Ratio	0.46	0.48	5.6%	0.48	4.3%
AM Peak: Percentage of links with V/C > 0.8	12.5%	16.7%	33.3%	12.5%	0.0%
PM Peak: Percentage of links with V/C > 0.8	12.5%	16.7%	33.3%	8.3%	-33.3%