NSW GOVERNMENT | Transport for NSW

Heavy Truck Crash Data Analysis

Update as at May 2012

RFAC Meeting June 2012

Margaret Prendergast

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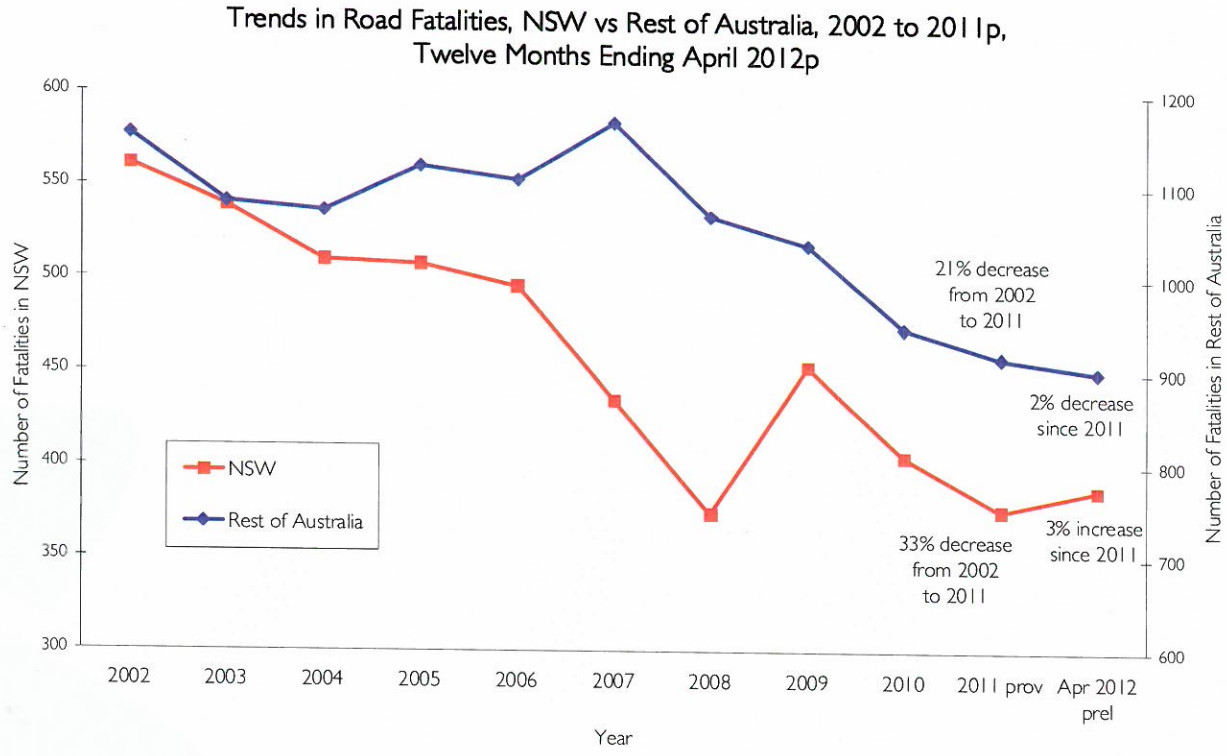
NSW v Rest of Australia 2002 to 2012

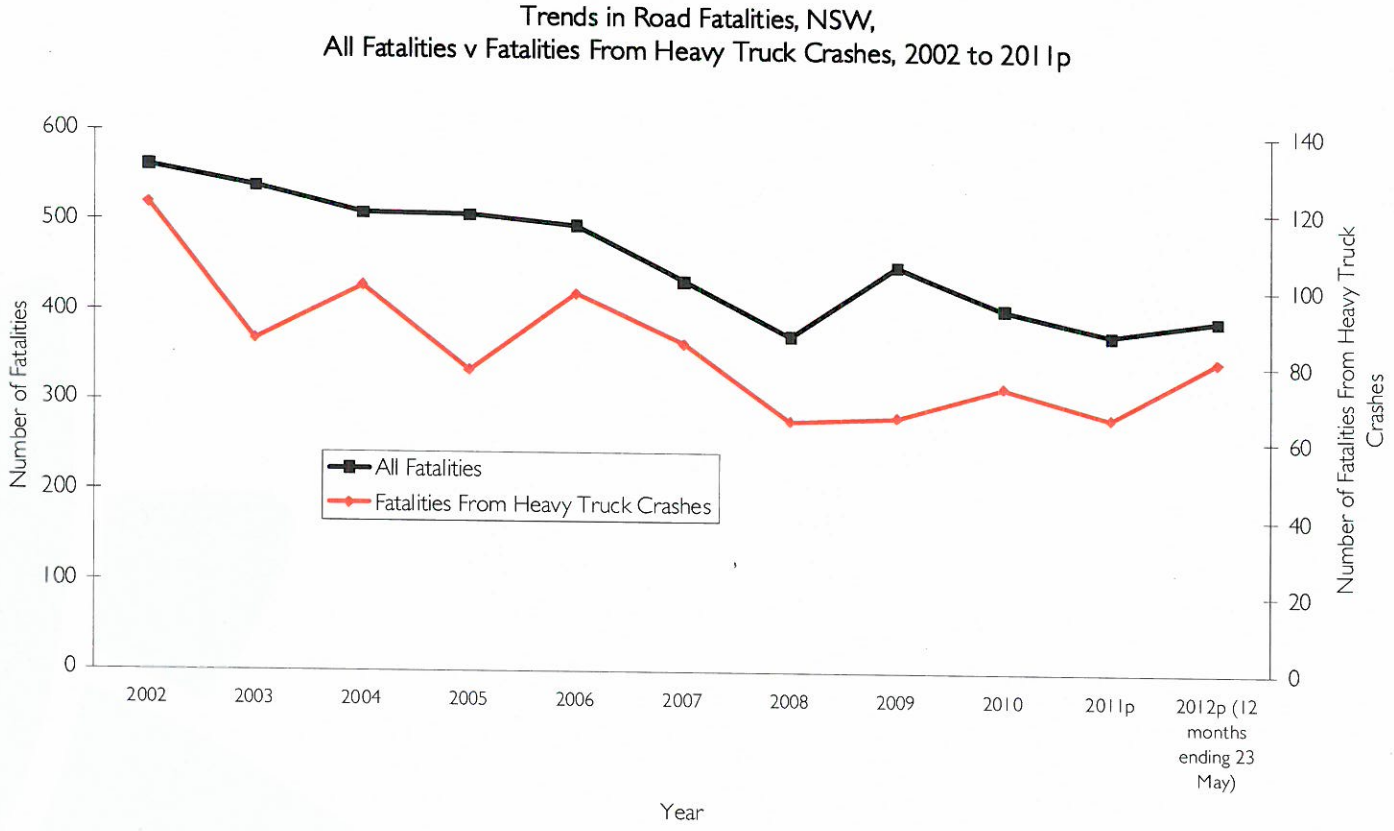
- NSW experienced impressive reductions in road fatalities between 2002 and 2011, whilst the Rest of Australia has decreased to a lesser extent over that period
- However, road toll increases in NSW so far in 2012 contrasts with the small decreases for the Rest of Australia
- NSW has saved around 550 lives compared with the road toll reductions for the rest of Australia over the past decade



NSW ICAC EXHIBIT

NSW Road Toll Trends – Heavy Trucks 2002 to 2012p

- Trends for heavy truck crash fatalities since 2002 have been generally a little better than the overall road toll performance
- However for the twelve months ending 23 May 2012 the road toll increased by 5% compared with the previous year, but heavy truck crash fatalities increased by 23%



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Heavy truck involvement in serious road trauma

- Heavy trucks are often involved in serious road trauma in NSW, in part because when a heavy truck is involved in a crash their vehicle mass elevates the crash forces involved and hence increases the severity of the crash.

- Heavy trucks
  - Represented only 2.2 % of registered motor vehicles in NSW (RMS June 2011)
  - Accounted for 7% of all motor vehicle travel in NSW *(ABS SMVU 2010)*
  - Crashes involving heavy trucks accounted for 17% of all fatalities on NSW roads in 2008, 15% in 2009, 18% in 2010, 18% in 2011 and 22% in 2012 (1 January to 23 May only)

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Heavy Truck Fatalities v All Fatalities in NSW

Trends for Fatalities and Fatal Crashes in NSW, 2002 to 2012p

Year	All Crashes		Heavy Truck Crashes			Heavy Truck as % of Total	
	Fatalities	Fatal Crashes	Fatalities	Fatal Crashes	Killed / Fatal Crashes	Fatalities	Fatal Crashes
2002	561	501	121	109	1.11	22%	22%
2003	539	483	86	69	1.25	16%	14%
2004	510	458	100	86	1.16	20%	19%
2005	508	459	78	70	1.11	15%	15%
2006	496	449	98	80	1.23	20%	18%
2007	435	405	85	78	1.09	20%	19%
2008	374	353	65	59	1.10	17%	17%
2009	453	408	66	51	1.29	15%	13%
2010	405	365	74	60	1.23	18%	16%
2011p	376	348	66	60	1.10	18%	17%
2012p (12 months ending 23 May)	394	363	81	71	1.14	21%	20%

Note : 2011 data are provisional figures and 2012 data are preliminary figures

- The 2012 result (12 months ending 23 May) for fatalities from heavy truck crashes now at the highest levels since 2007.
- Heavy truck fatalities continue now account for around 21% of total fatalities (12 months ending 23 May 2012)

Recent Trends for Heavy Truck Fatalities in NSW

Fatalities From Heavy Truck Crashes, NSW, Year x Month, 2002 to 2012p

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2002	6	7	9	10	13	14	8	8	14	8	14	10	121
2003	3	5	8	5	9	7	6	9	4	13	10	7	86
2004	4	14	11	9	2	10	2	12	8	9	12	7	100
2005	7	3	6	8	7	10	2	6	6	6	7	10	78
2006	18	7	7	10	3	10	4	6	3	11	12	7	98
2007	3	6	9	5	3	10	8	6	3	8	9	15	85
2008	8	3	5	1	4	8	6	7	6	8	4	5	65
2009	2	5	4	7	5	5	5	7	7	4	5	10	66
2010	12	6	9	6	6	7	4	2	9	7	3	3	74
2011p	2	4	7	3	4	4	6	14	4	6	5	7	66
2012p	9	5	7	6	6								33

2012p preliminary data for the period 1 January to 23 May only

- *Note: 2011 and 2012 data preliminary*
- So far in 2012 (up to midnight 23 May) there have been 33 fatalities from heavy truck crashes, already half the total recorded for the whole of 2011
- Highest monthly total in 2012 occurred in January (with 9 fatalities, includes two multiple fatality crashes)

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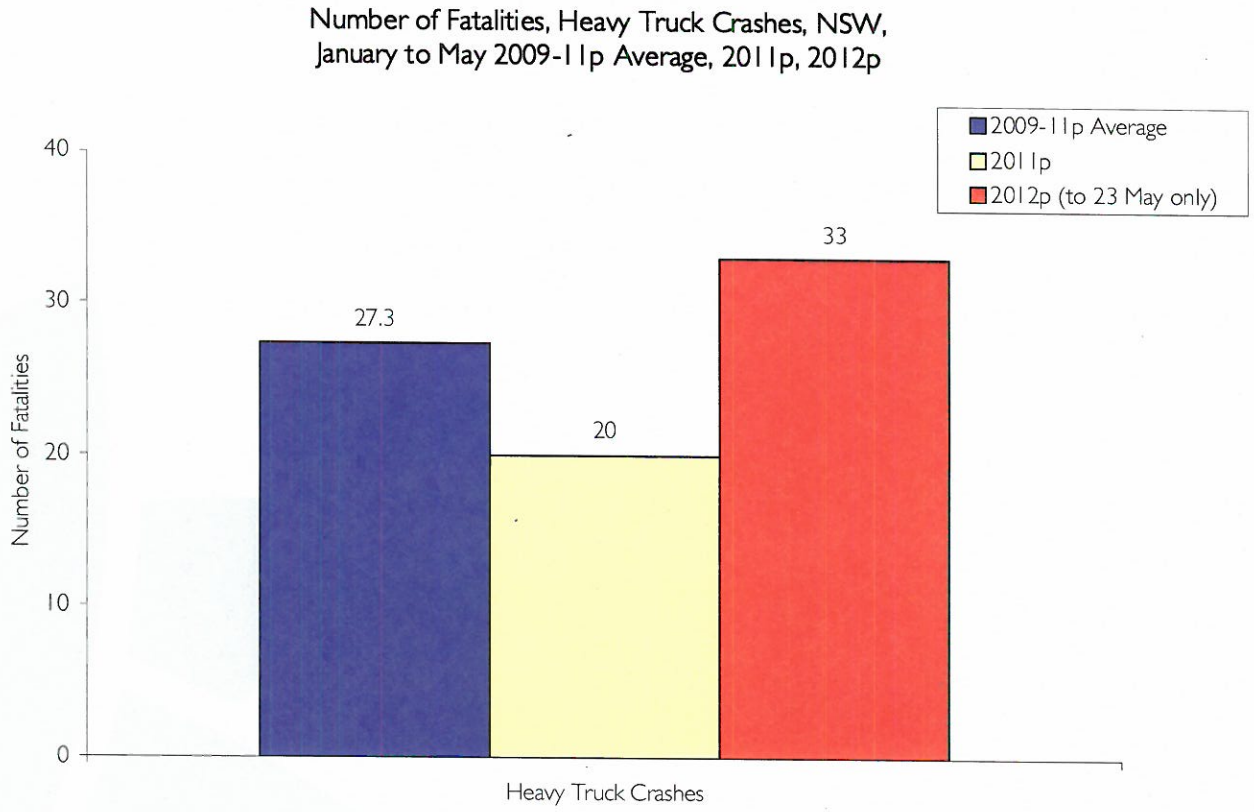
2012 Progress
Fatalities From Heavy Truck Crashes

- Compared with 2011 and the three year average, fatalities from heavy truck crashes have experienced an increase so far in 2012 (1 January to 23 May only)



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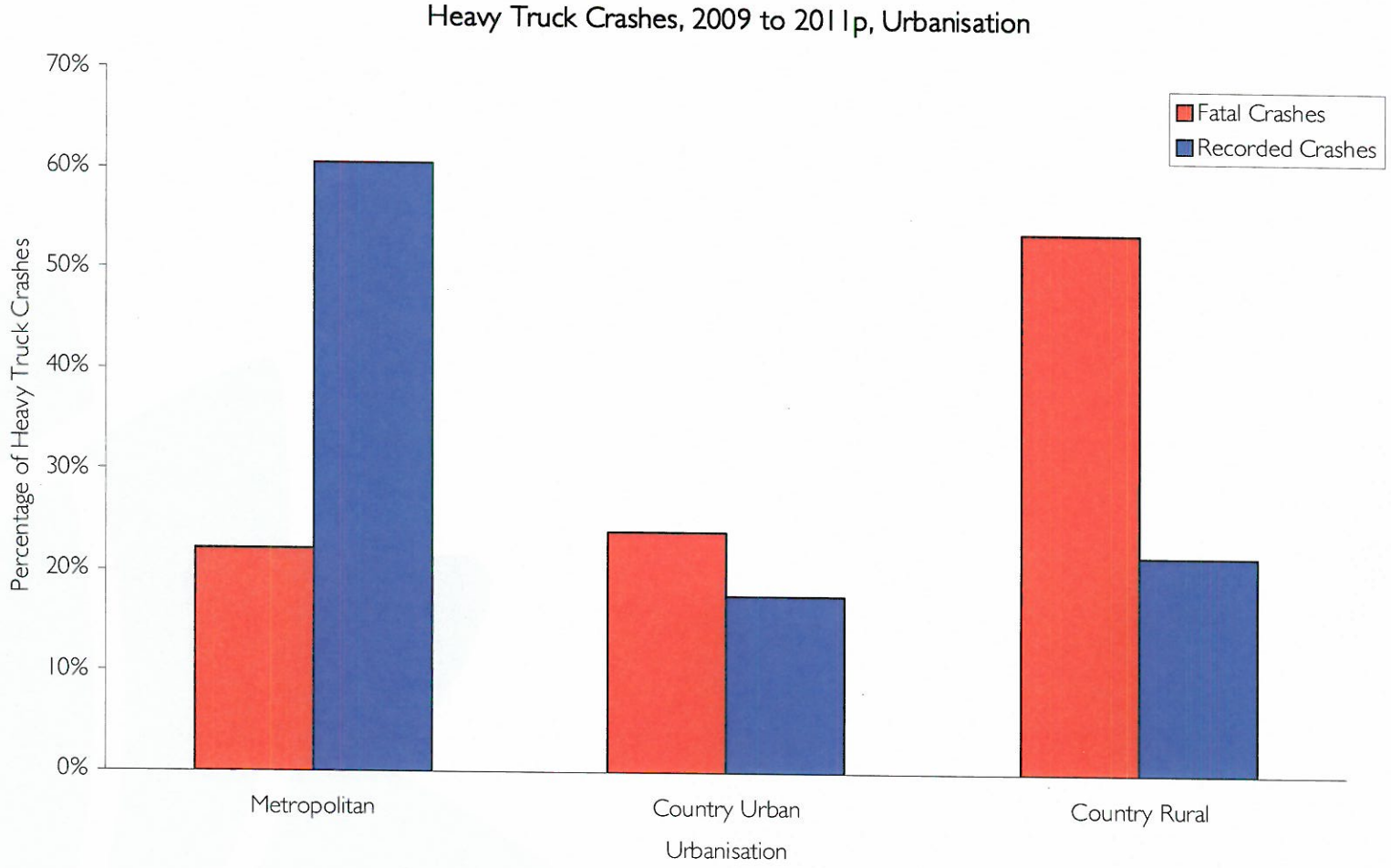
Urbanisation

- The majority of heavy truck crashes occur on metropolitan roads, but the majority of heavy truck fatal crashes occur on country roads, particularly country rural roads



NSW ICAC EXHIBIT

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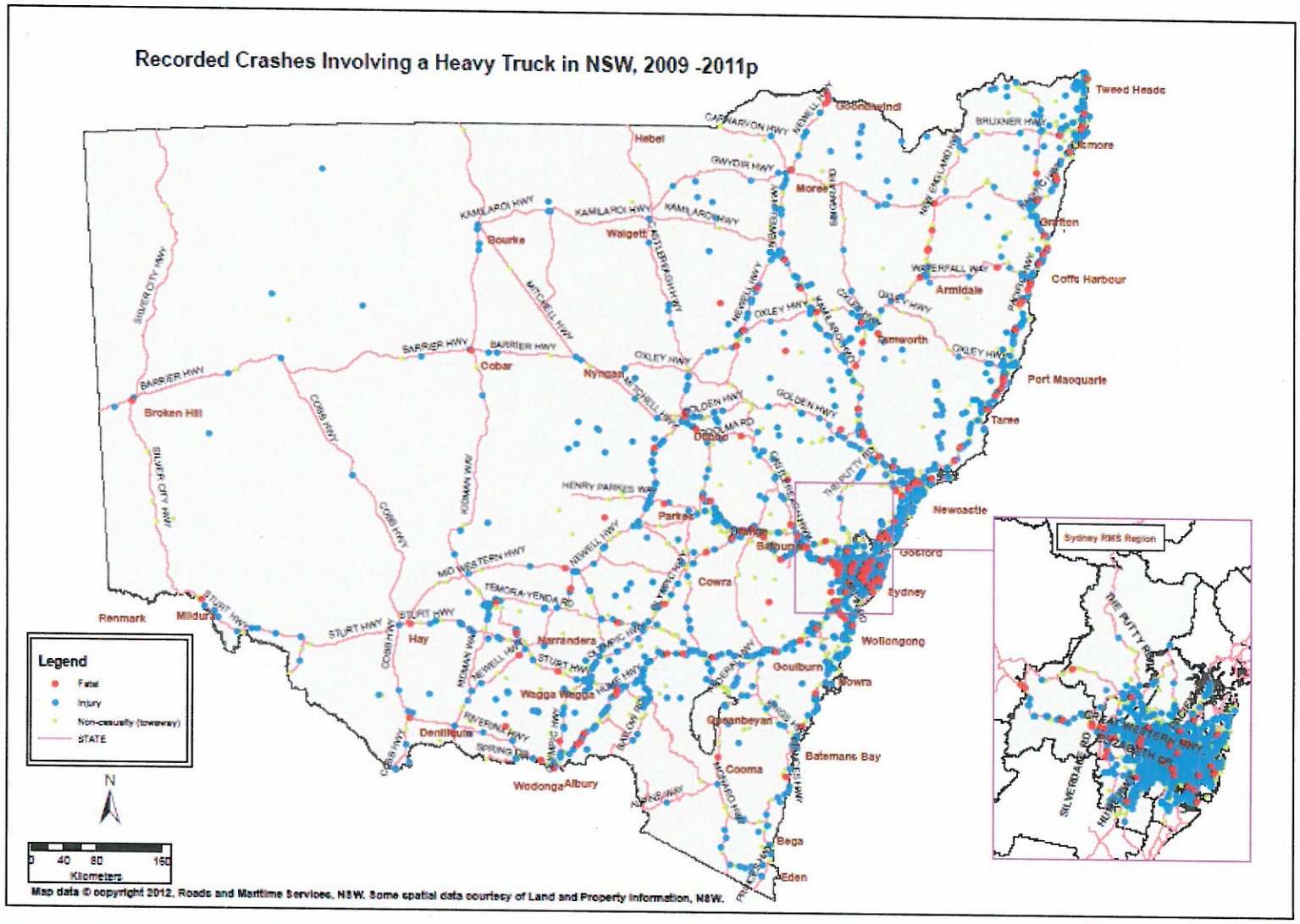
Location of Heavy Truck Crashes



NSW ICAC
EXHIBIT

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Location of Heavy Truck Crashes Sydney RMS Region

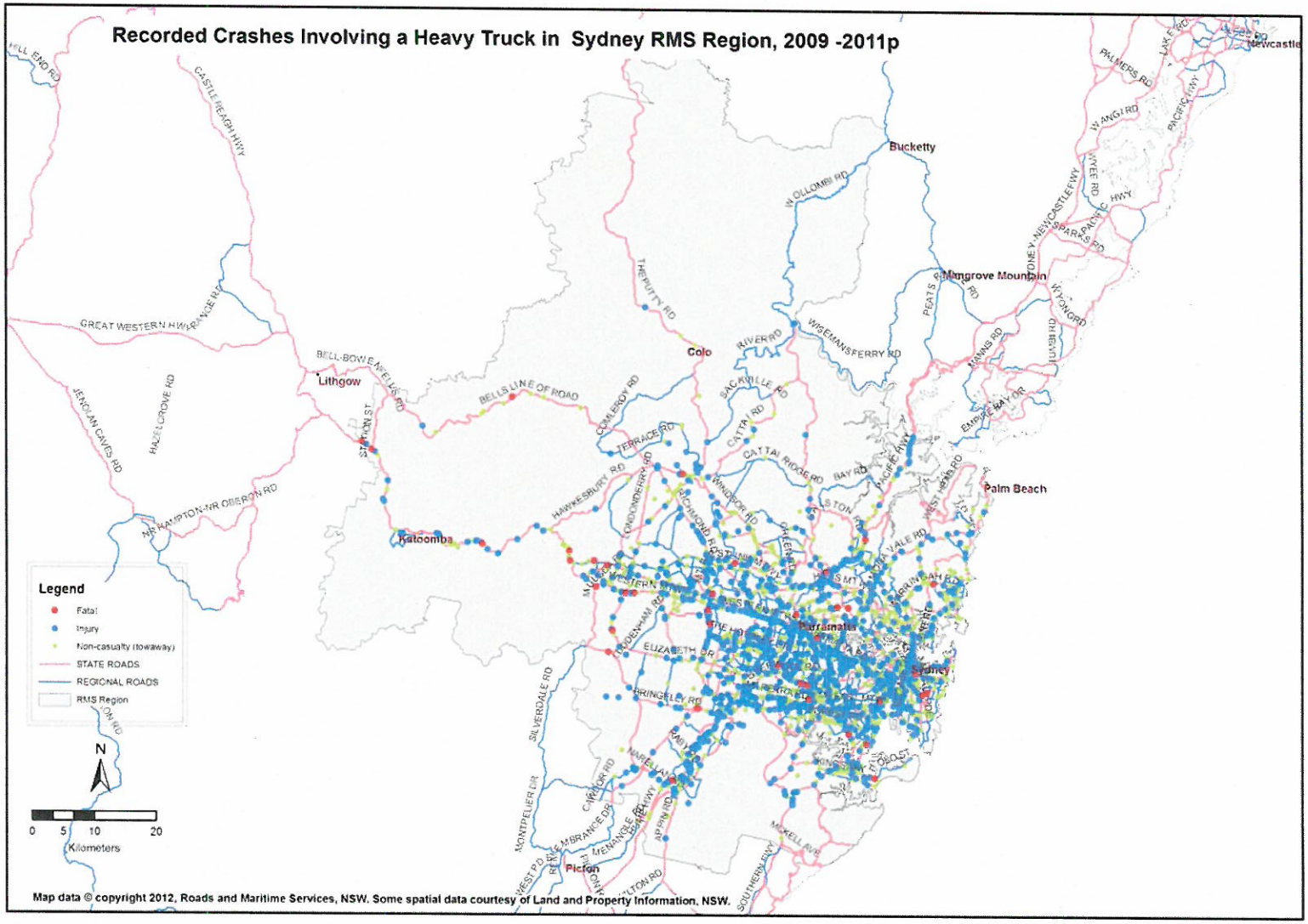

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EXHIBIT

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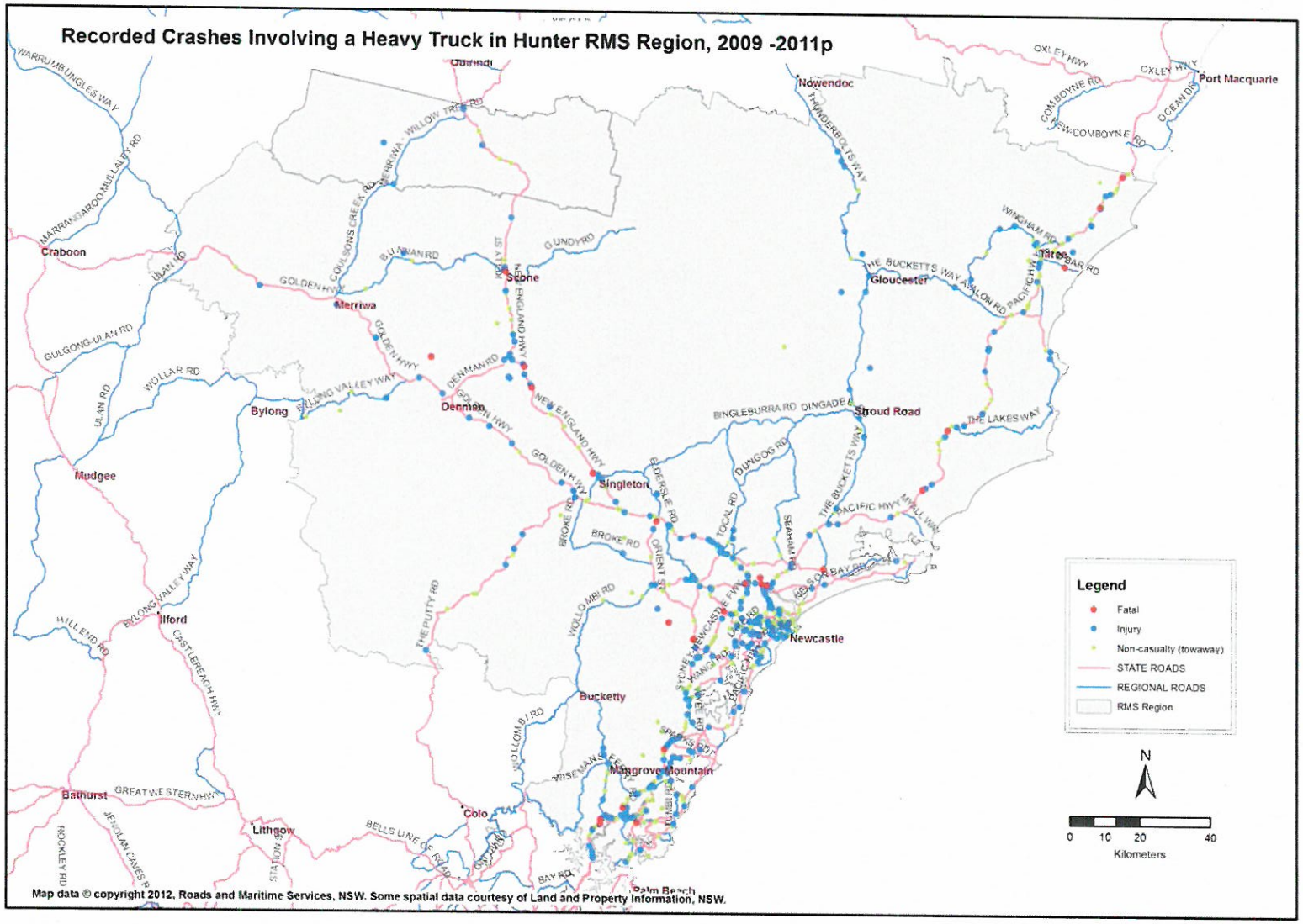
Location of Heavy Truck Crashes Hunter RMS Region



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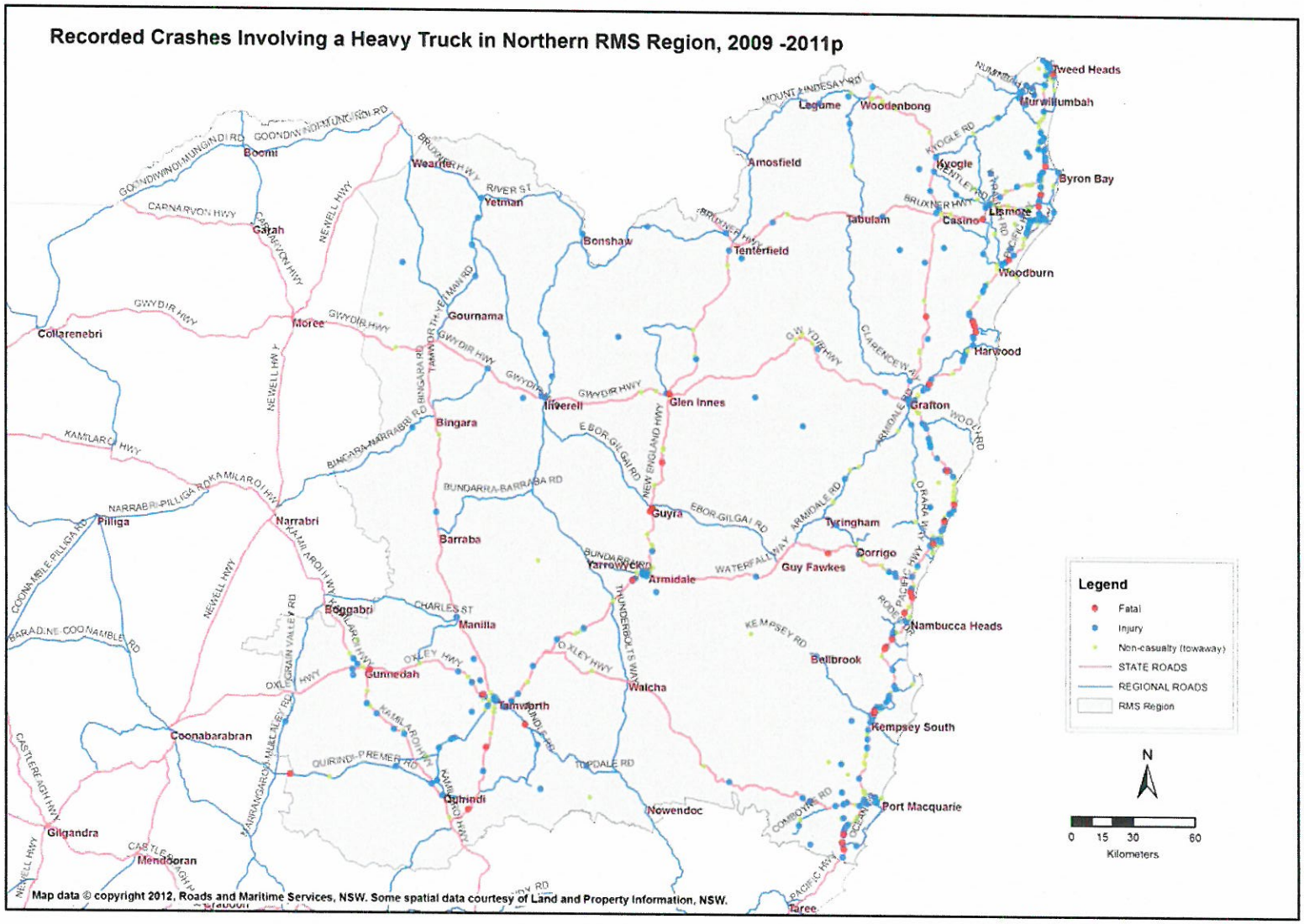
Location of Heavy Truck Crashes Northern RMS Region

NSW ICAC EXHIBIT



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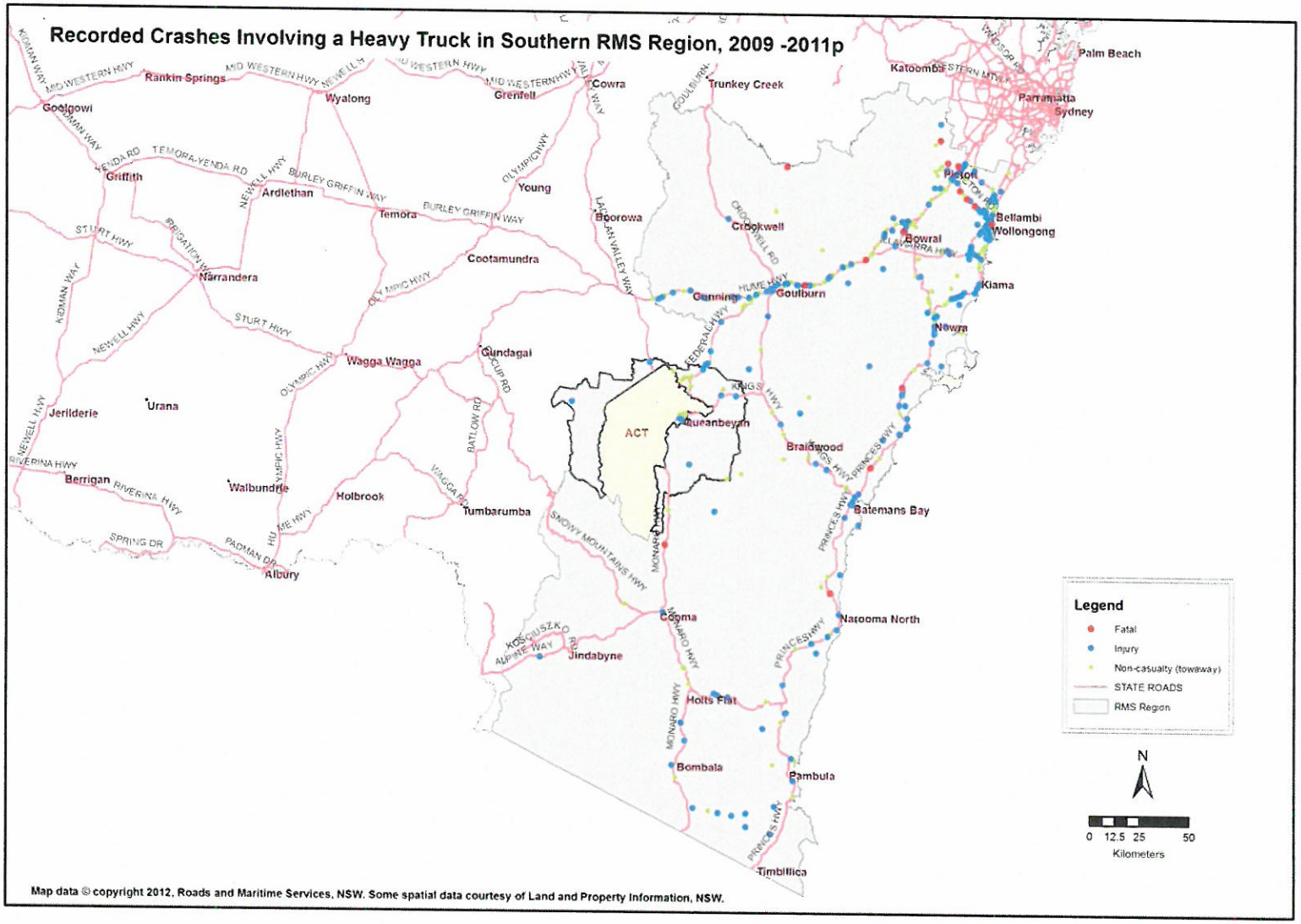
Location of Heavy Truck Crashes Southern RMS Region

NSW ICAC EXHIBIT



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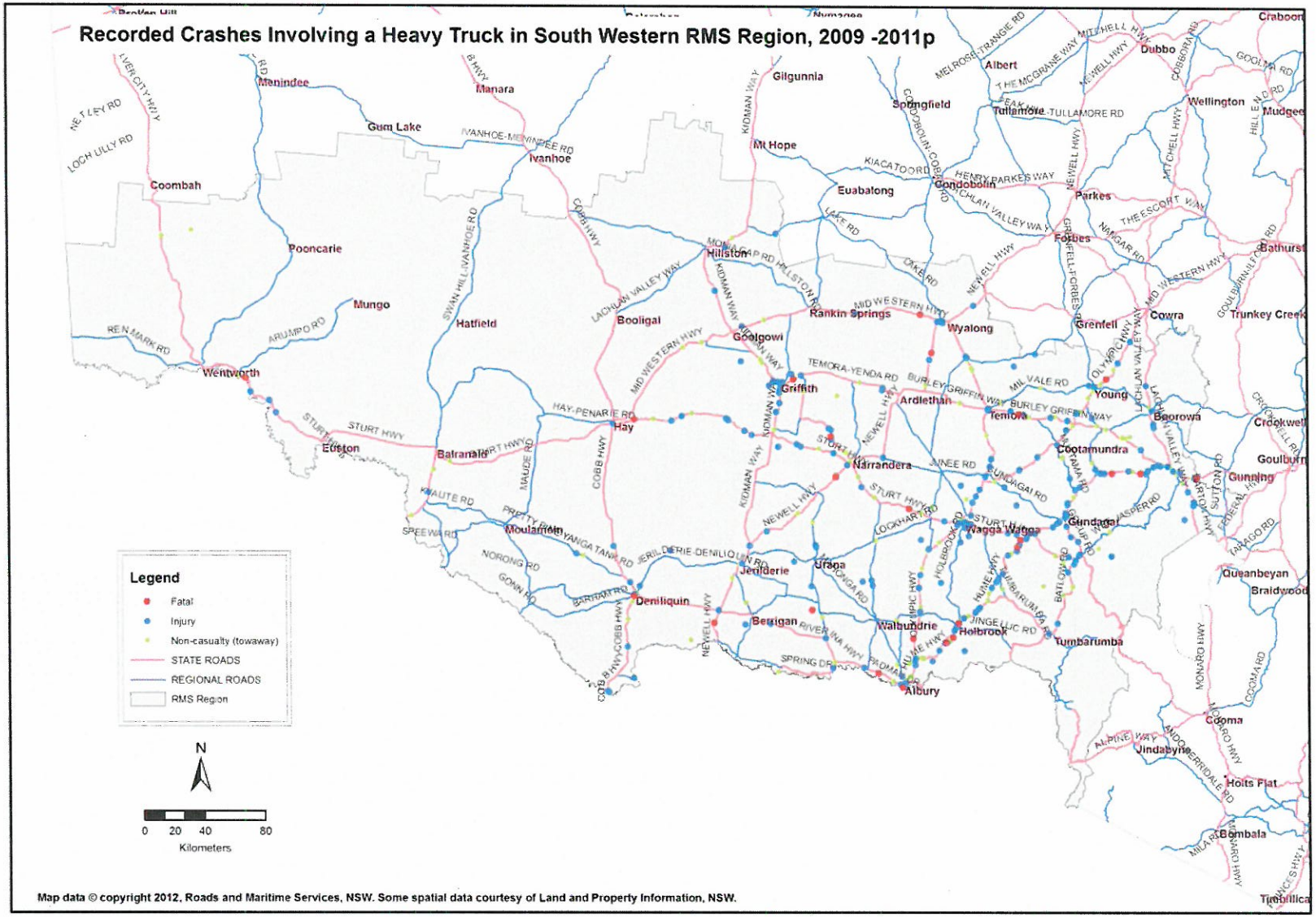
Location of Heavy Truck Crashes South Western RMS Region



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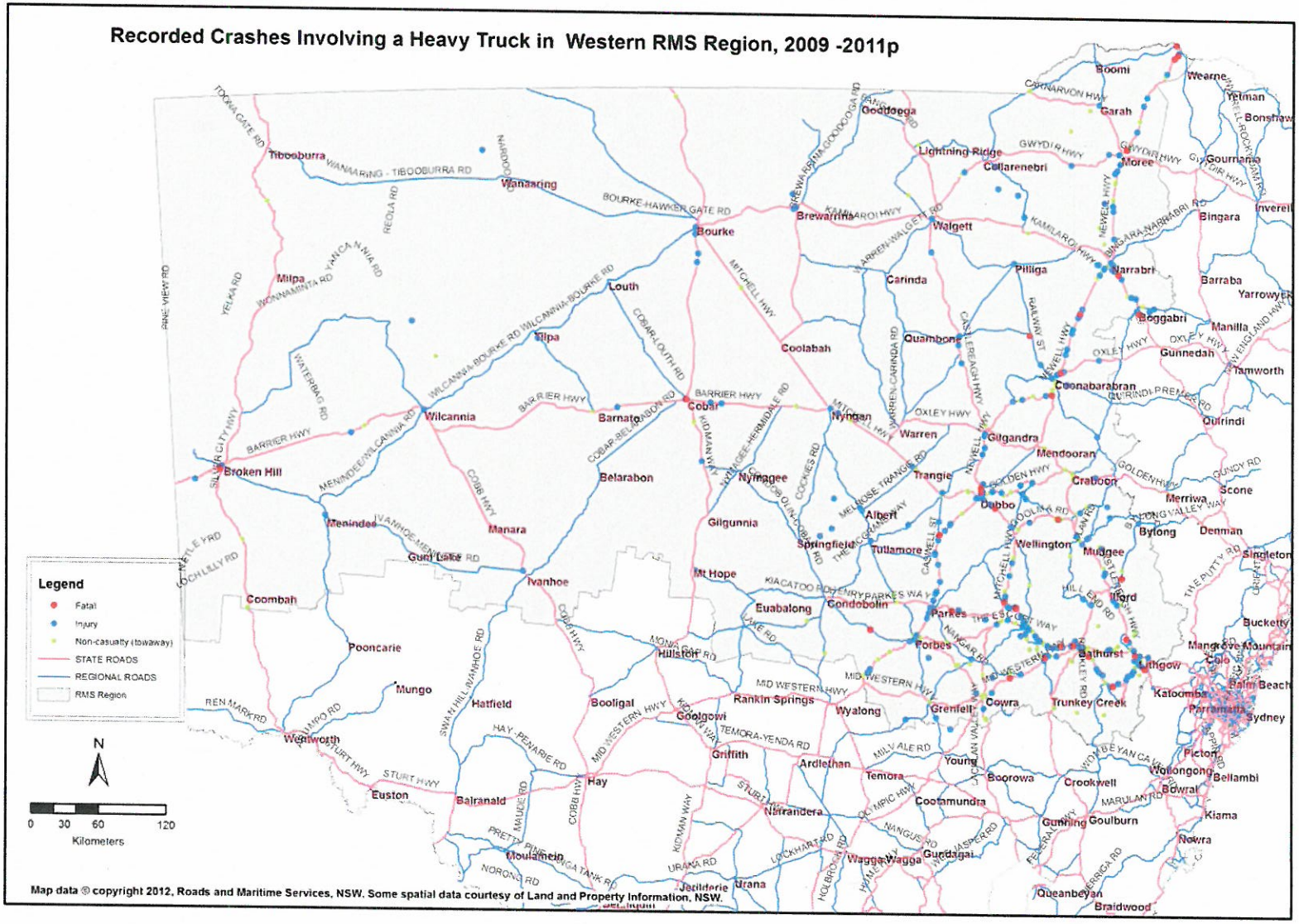
Location of Heavy Truck Crashes Western RMS Region

NSW ICAC EXHIBIT



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State Highways / Motorways

•The Pacific and Hume Highways are the major routes with the highest numbers of heavy truck fatal crashes and heavy truck crashes – not surprising given they are the major freight corridors for NSW

Heavy Truck Crashes on State Highways/Motorways, 2009 to 2011p

Top 10 By Number of Fatal Crashes

Rank	State Highway / Motorway	Fatal	All Recorded
1	Pacific	29	531
2	Hume	13	430
3	New England	11	152
4	Newell	11	136
5	Great Western	8	253
6	Mitchell	5	60
7	Princes	4	197
8	F3	4	166
9	Sturt	4	60
10	Mid Western	3	21

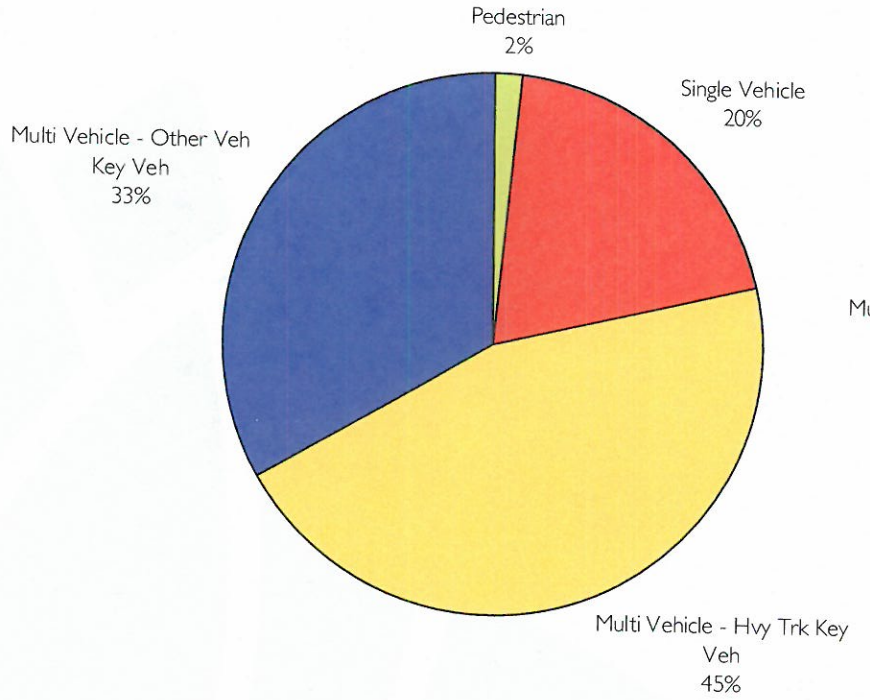
Heavy Truck Crashes
First Impact Crash Type

2735

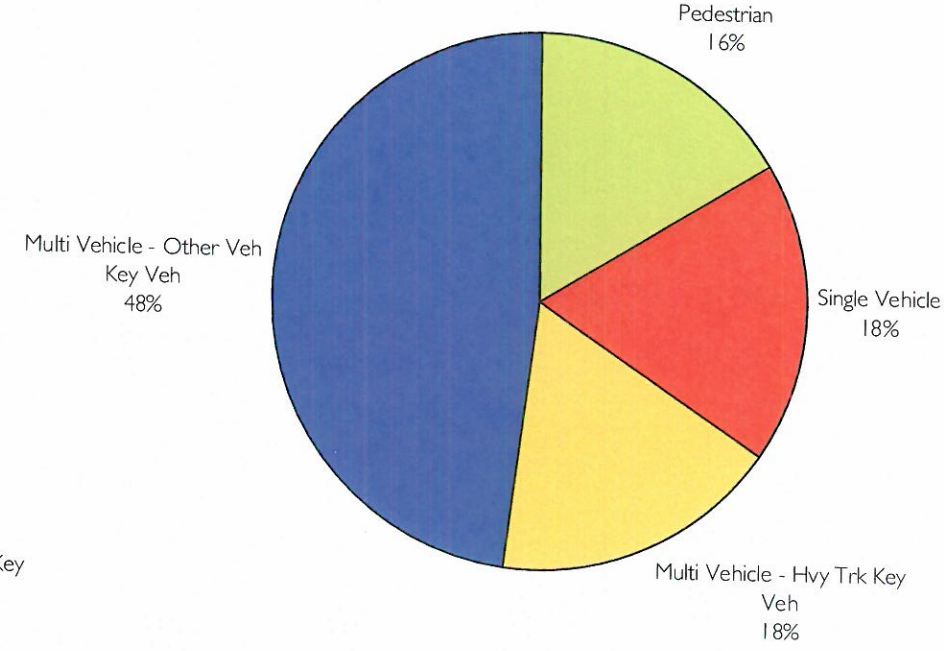
NSW ICAC EXHIBIT

- The majority of heavy truck crashes involve multiple vehicles (78%), where key vehicle status (fault) is skewed towards the heavy truck (45% v 33%)
- The majority of heavy truck fatal crashes also involve multiple vehicles (66%), but key vehicle status (fault) is skewed towards the other vehicle (48% v 18%)

Heavy Truck Recorded Crashes, 2009 to 2011p,
First Impact Crash Type x Key Vehicle Status



Heavy Truck Fatal Crashes, 2009 to 2011p,
First Impact Crash Type x Key Vehicle Status



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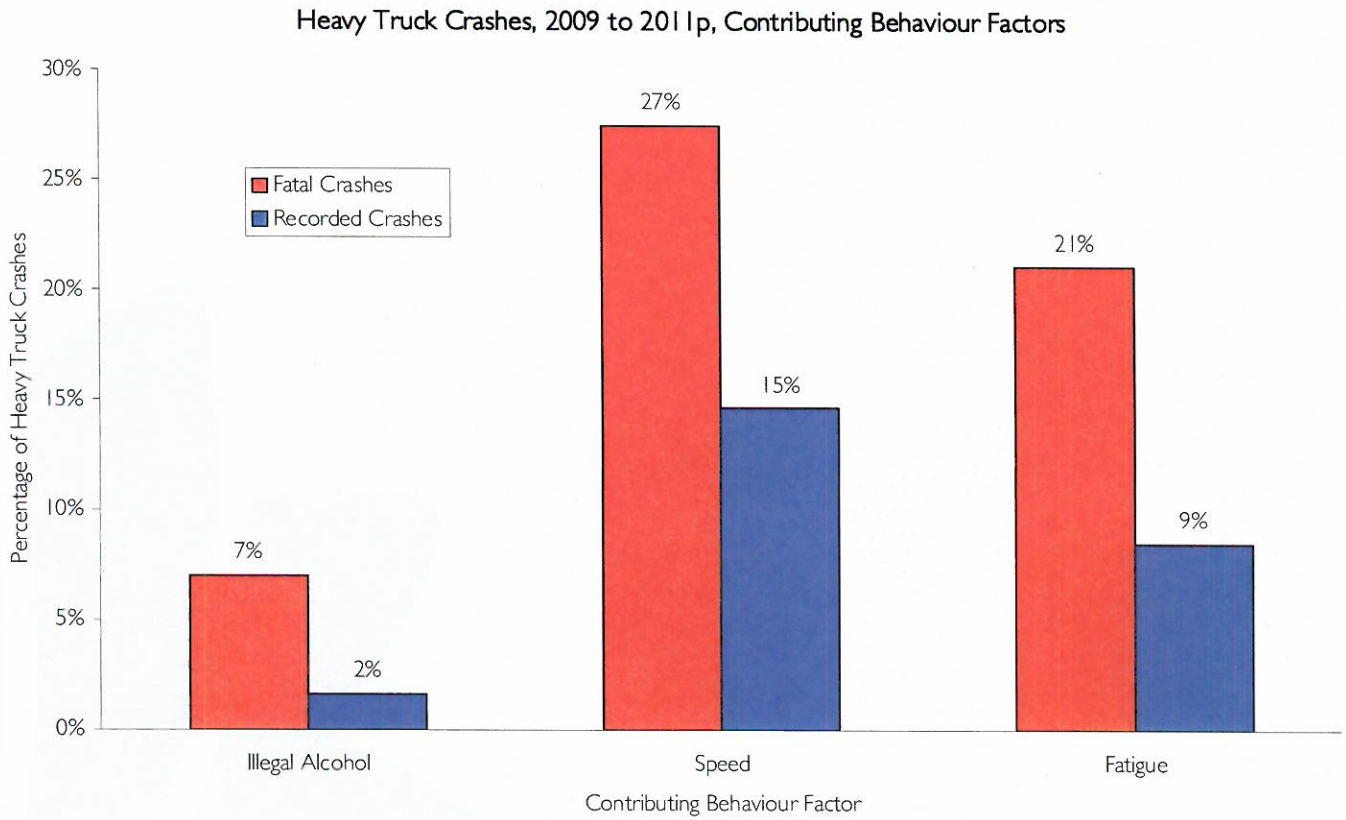
Contributing Behaviour Factors

- Compared with all heavy truck crashes, speed, fatigue and illegal alcohol are over-represented in heavy truck fatal crashes

(Note – factor present for any driver / rider involved in the crash – not necessarily applicable to the heavy truck driver involved in the crash)



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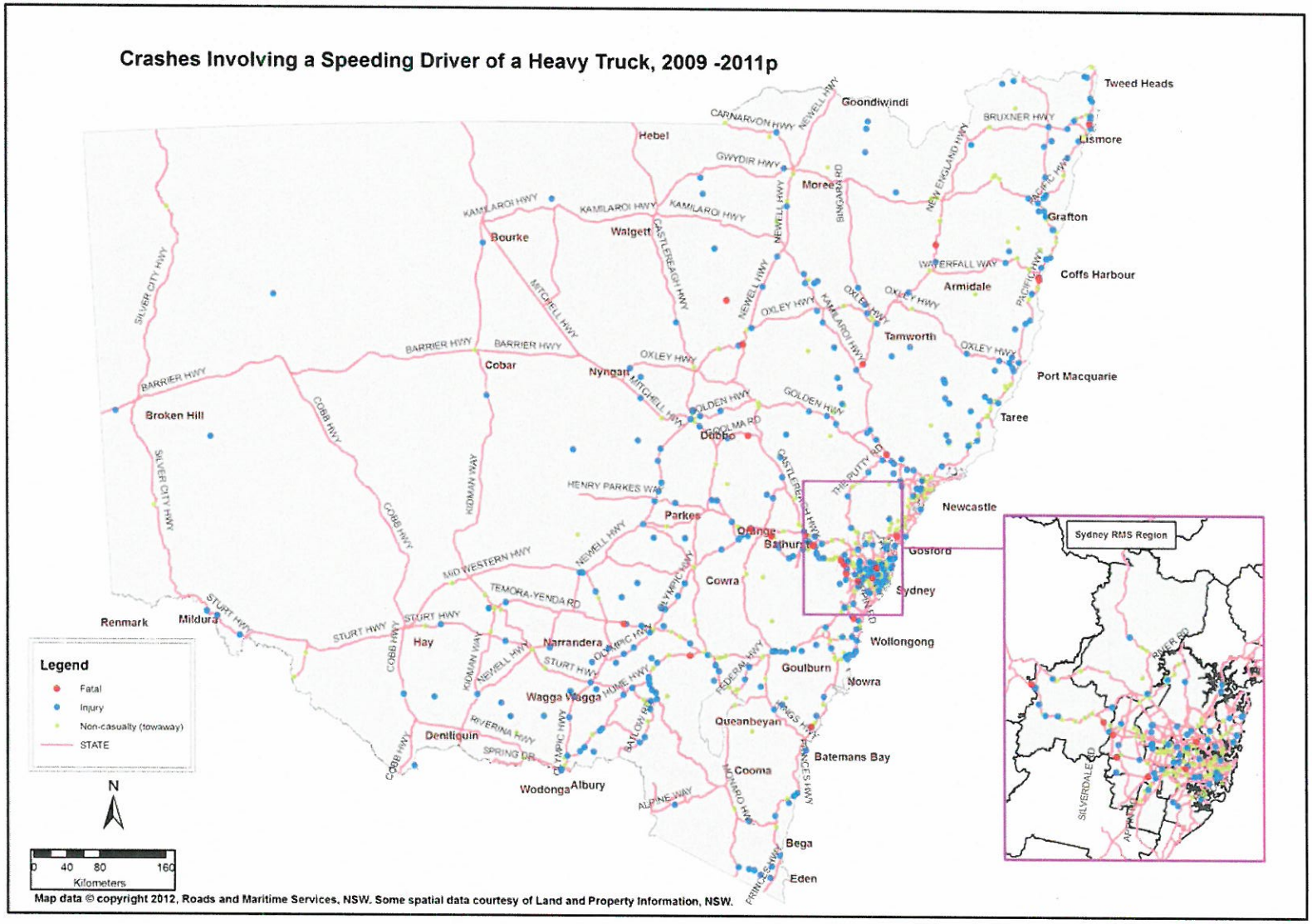
Location of Speeding Heavy Truck Driver Crashes



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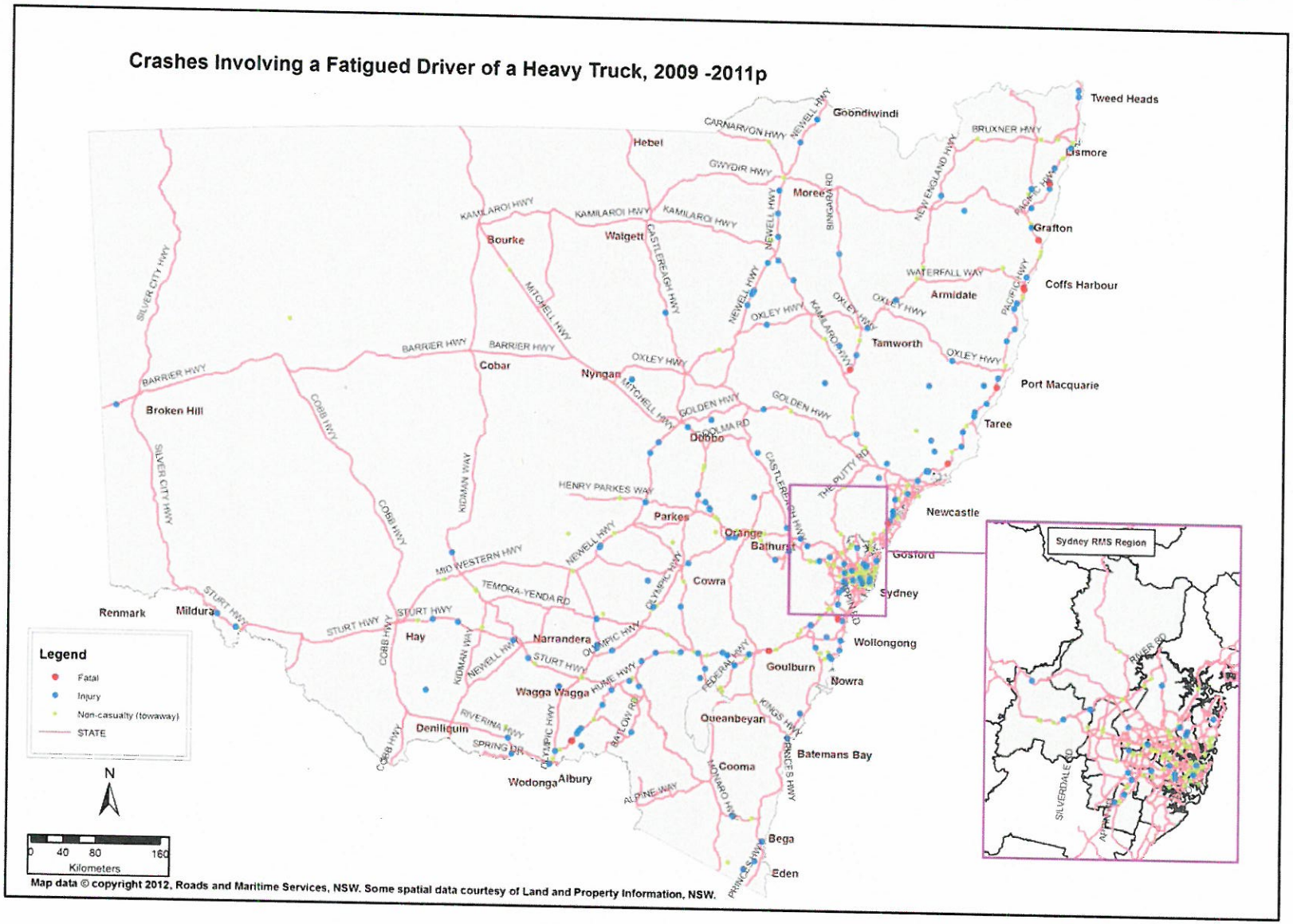
Location of Fatigue Heavy Truck Driver Crashes



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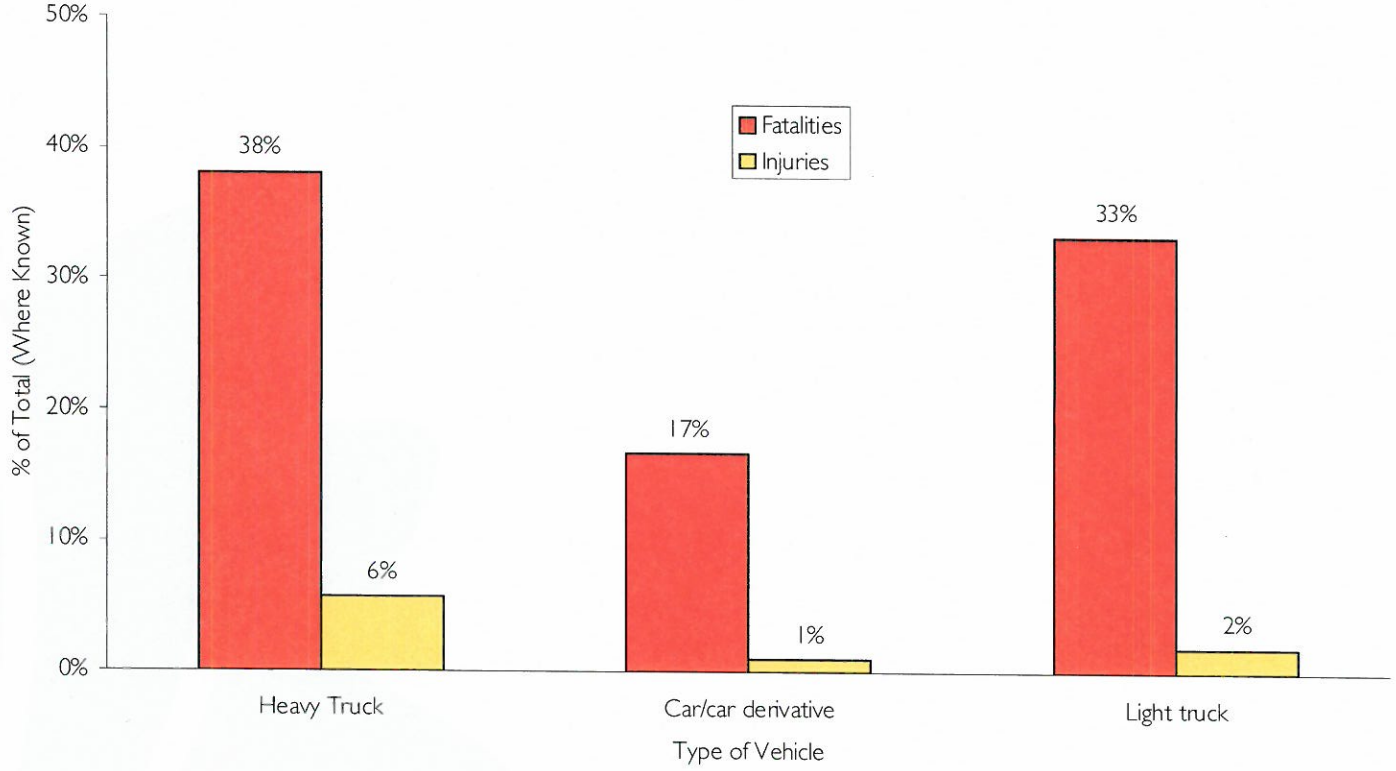
Driver Casualties Restraint Non Usage

- More than one-third of heavy truck drivers killed and one in sixteen injured are not wearing an available restraint
- Heavy truck driver casualties have higher levels of non usage compared with car drivers and light truck drivers

Percentage of Driver Casualties Not Wearing An Available Restraint, 2009 to 2011p,
Degree of Casualty, Type of Vehicle



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Heavy Truck Drivers Involved – State of Licence

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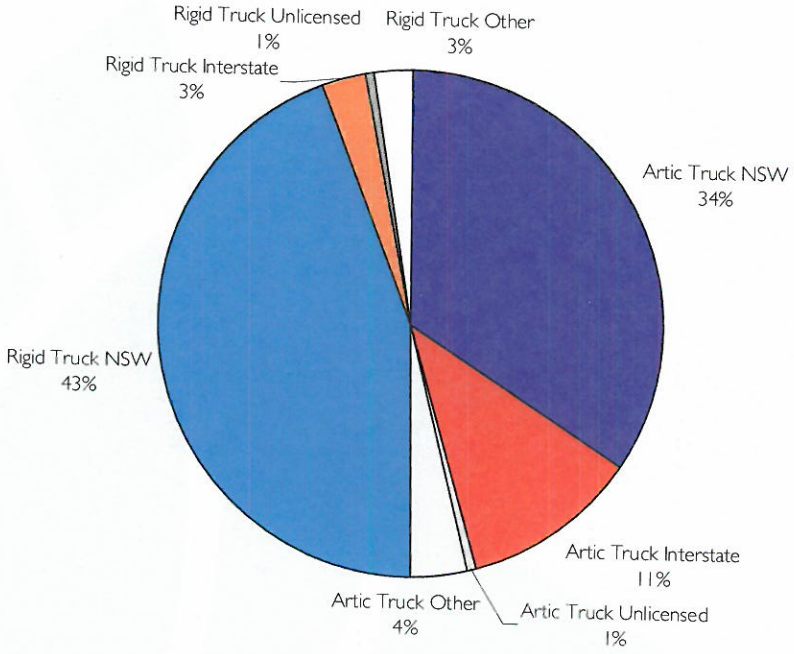
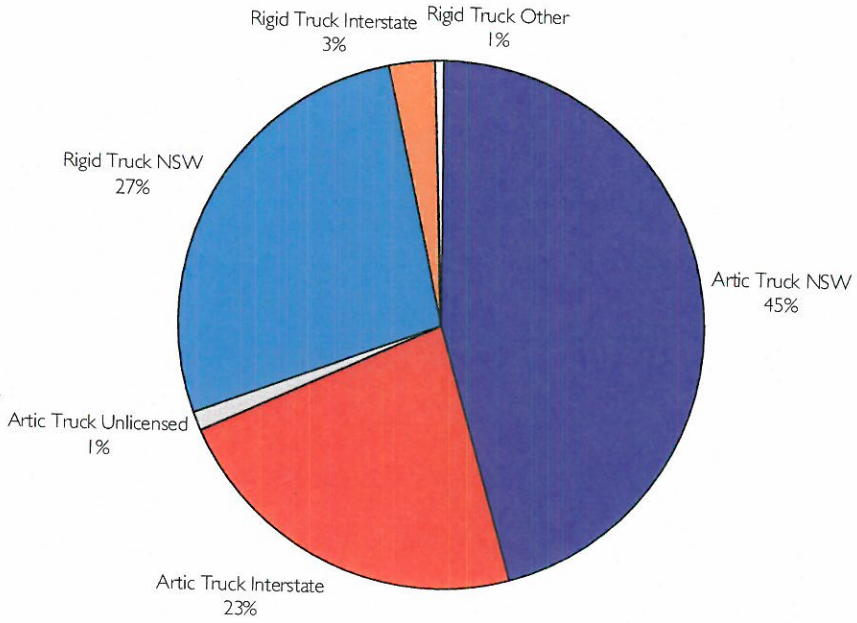
- The majority (77 per cent) of heavy truck drivers involved in heavy truck crashes have a NSW licence with another one in seven heavy truck drivers possessing an interstate licence
- NSW licence holders still account for the majority (72 per cent) of heavy truck drivers involved in fatal crashes, but interstate licence holders now account for one in four heavy truck drivers

Percentage of Heavy Truck Drivers Involved in Heavy Truck Crashes, 2009 to 2011p, State of Licence for Heavy Truck Driver



Percentage of Heavy Truck Drivers Involved in Heavy Truck Fatal Crashes, 2009 to 2011p, State of Licence for Heavy Truck Driver



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A study of the relationship between the locations of heavy truck crashes to heavy truck rest areas

Margaret Prendergast
Centre for Road Safety
June 2012

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Project Background

- Industry requested an analysis of the relationship between heavy truck crashes and heavy truck rest areas (HTRA).
- The focus of the project is to analyse the location of heavy truck crashes in relation to the location of heavy truck rest areas.
- Examined crashes in country non-urban areas 2006-2010.

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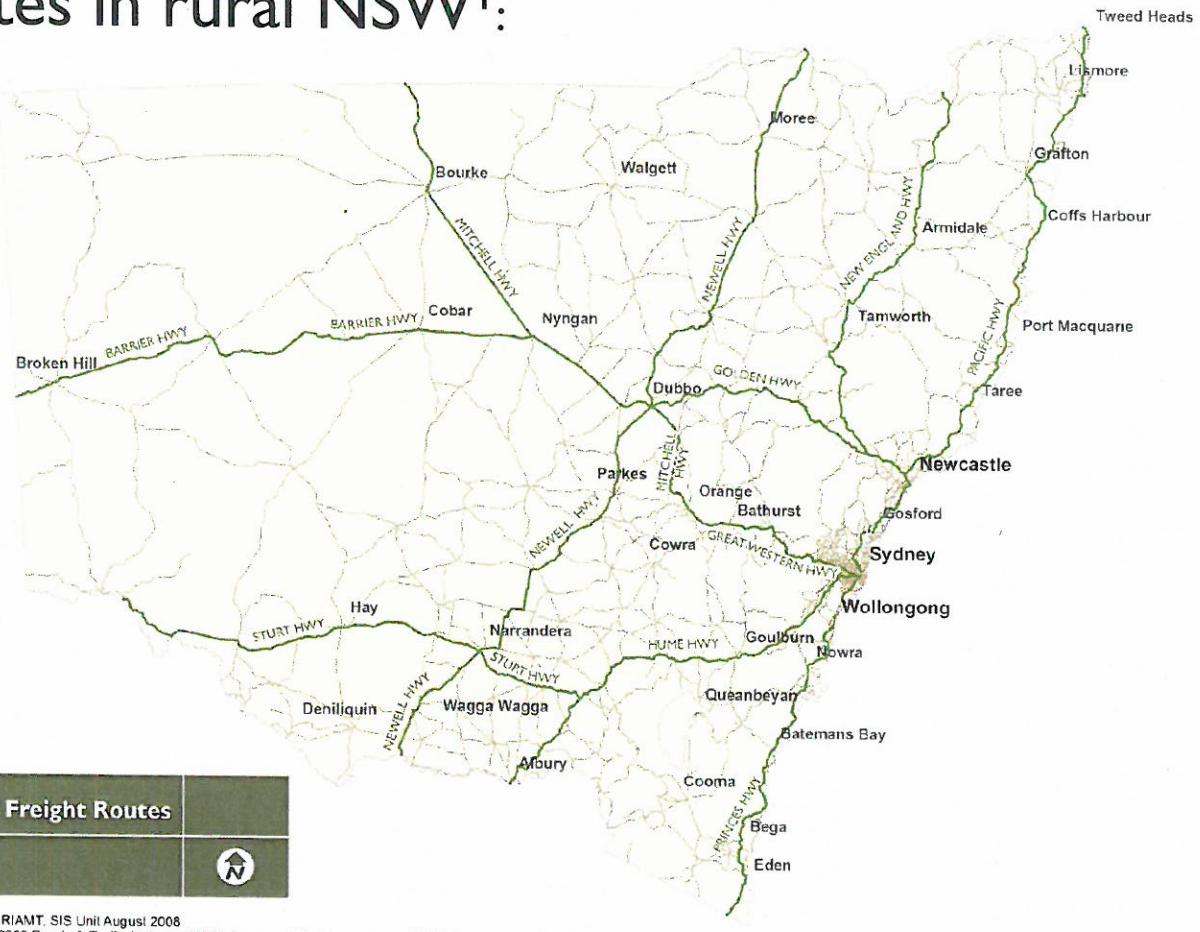
Freight Routes

NSW ICAC EXHIBIT

- Key freight routes in rural NSW[1]:

- Pacific Highway
- Hume Highway
- Great Western Highway / Mitchell Highway
- Mitchell Highway / Barrier Highway
- Sturt Highway
- Newell Highway
- New England Highway
- Princes Highway
- Kings Highway
- Golden Highway

Routes in red were included in study



Map produced by RTA, RIAMT, SIS Unit August 2008
Map data copyright (c) 2008 Roads & Traffic Authority, NSW. Some spatial data courtesy of NSW Department of Lands.

[1] *"Developing a strategy for major heavy vehicle rest areas on key rural freight routes in NSW: Strategic Network Management Learning Workshop" Tricia Zapanta, April 2009*

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Heavy truck crash statistics along selected routes

- Years 2006 - 2010

Highway	Highway length (km)	Heavy Truck Crashes				Heavy Trucks as percentage of all motor vehicles involved in crashes
		Degree of crash			Total number of crashes	
		Fatal	Injury	Tow-away		
Princes	470	5	67	79	151	4%
Pacific	1,080	56	295	337	688	**11%**
New England	638	14	104	129	247	8%
Hume	1,032	22	173	205	400	17%
Great Western / Mitchell / Barrier	1,084	12	79	70	161	7%
Newell	1,062	22	114	93	229	**20%**

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Heavy truck crash statistics along selected routes

Pacific Highway:

- Highest number of heavy truck crashes (688)
- Third highest proportion heavy truck involvement in crashes (11%)

Hume Highway:

- Second highest number of heavy truck crashes (400)
- Second highest proportion heavy truck involvement in crashes (17%)

Newell Highway:

- Median number of heavy truck crashes (229)
- Highest proportion heavy truck involvement in crashes (20%)

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2746

Heavy Truck Rest Areas – Route Comparison

NSW ICAC EXHIBIT

- Average distance between HTRA ranges between 5 (Pacific Highway) and 39 km (Princes Highway).
- Maximum distance between HTRA for Princes (176 km) and New England (159 km) Highways are considerably more than other routes (31-63 km).
- Relatively high heavy truck crash involvement for Newell, Hume and Pacific probably consistent with role as major road freight corridors.

Heavy Truck Accessible RA (HTRA)	Great Western / Mitchell / Barrier Highway	Hume Highway	New England Highway	Newell Highway	Pacific Highway	Princes Highway
Total Number of HTRA	76	74	66	116	124	10
Average distance between all HTRA (km)	14	7	9	9	5	39
Maximum distance between all HTRA (km)	63	31	159	46	34	176
Heavy trucks as proportion of all motor vehicles involved in crashes	7%	17%	8%	20%	11%	4%

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Overall observations

- Few crashes occur near rest areas.
- Possible relationship identified for New England and Princes Highways between location (or absence) of HTRA and involvement in crashes of heavy truck controllers.
- No relationship established between location (or absence) of HTRA and involvement in crashes of fatigued heavy truck controllers (but analysis was restricted by data limitations).
- Results were consistent across both 5 years of crash data and 10 years of crash data.

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Freight Route Conclusions

Results for the key freight routes fall into 3 categories:

1. New England and Princes Highways
2. Hume, Newell and Pacific Highways
3. Great Western/Mitchell/Barrier Highways (as a continuous route)

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New England & Princes Highways

- Sparsely-provisioned with HTRA.
- About half of crashes within 10km of HTRA.
- Crash patterns of heavy trucks vs all other motor vehicles were different with respect to HTRA.
- The availability of HTRA on these routes needs to be reviewed.

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Hume, Newell & Pacific Highways

2750

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- Well-provisioned with HTRA.
- Over 90% of crashes within 10km of HTRA.
- Heavy trucks vs all other motor vehicles = no pattern difference of crash involvements with respect to HTRA.

Great Western, Mitchell, Barrier Highways

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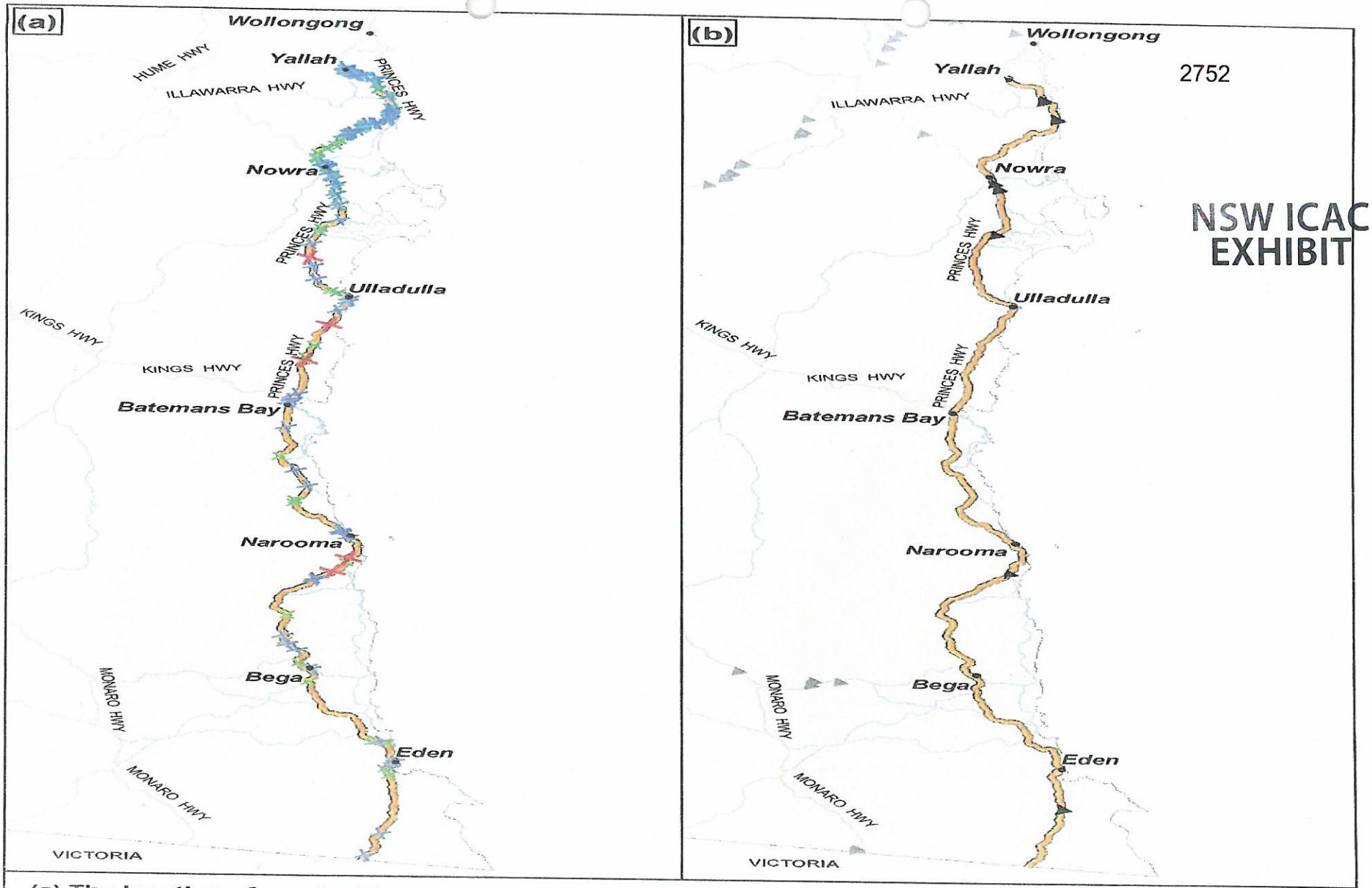
- Intermediately-provisioned with HTRA.
- About 3/4 of crashes within 10km of HTRA.
- Heavy trucks vs all other motor vehicles = no pattern difference of crash involvements with respect to HTRA.


(a)
Wollongong
Yallah
HUME HWY
ILLAWARRA HWY
PRINCES HWY
Nowra
PRINCES HWY
Ulladulla
KINGS HWY
KINGS HWY
PRINCES HWY
Batemans Bay
Narooma
Bega
MONARO HWY
Eden
MONARO HWY
VICTORIA
(b)
Wollongong
Yallah
ILLAWARRA HWY
Nowra
PRINCES HWY
Ulladulla
KINGS HWY
KINGS HWY
PRINCES HWY
Batemans Bay
Narooma
Bega
MONARO HWY
Eden
MONARO HWY
VICTORIA
2752
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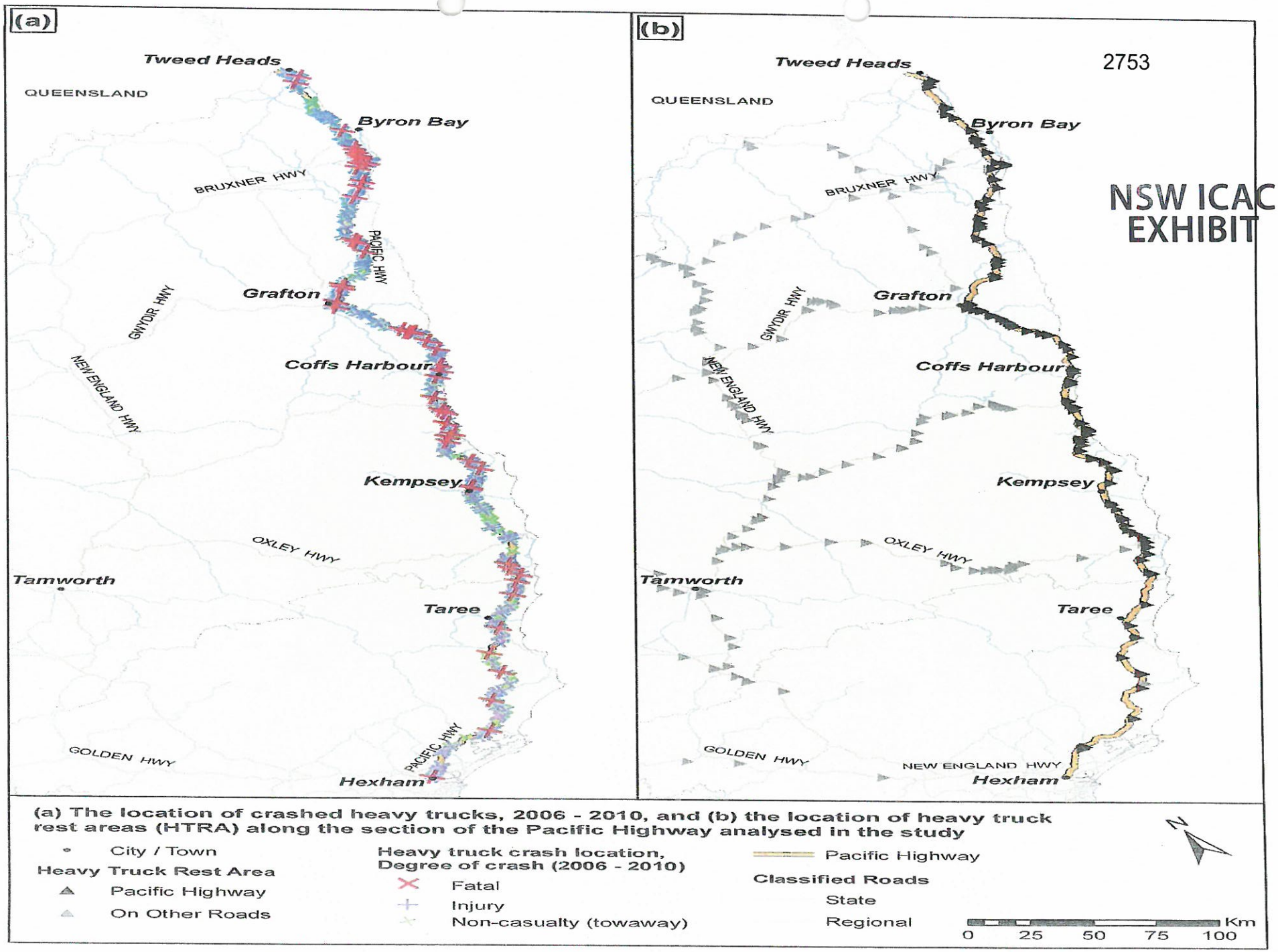
(a) The location of crashed heavy trucks, 2006 - 2010, and (b) the location of heavy truck rest areas (HTRA) along the section of the Princes Highway analysed in the study
City / Town
Heavy Truck Rest Area
Princes Highway
On Other Roads
Heavy truck crash location, Degree of crash (2006 - 2010)
Fatal
Injury
Non-casualty (towaway)
Princes Highway
Classified Roads
State
Regional
N
0
20
40
60
Km



(a) The location of crashed heavy trucks, 2006 - 2010, and (b) the location of heavy truck rest areas (HTRA) along the section of the Pacific Highway analysed in the study

- City / Town
- Heavy Truck Rest Area
  - Pacific Highway
  - On Other Roads
- Heavy truck crash location, Degree of crash (2006 - 2010)
  - Fatal
  - Injury
  - Non-casualty (towaway)
- Pacific Highway
- Classified Roads
  - State
  - Regional

N

0 25 50 75 100 Km

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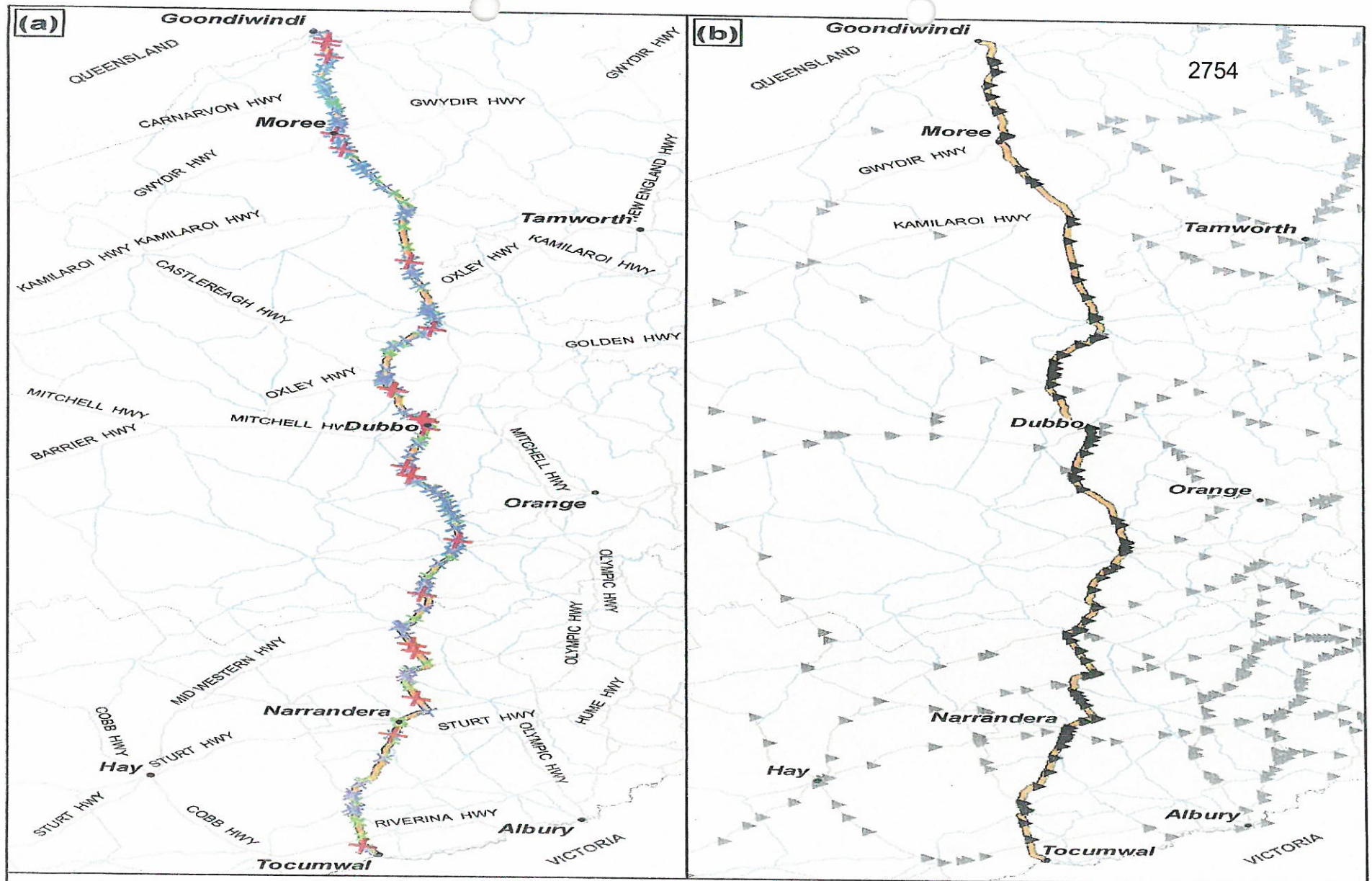
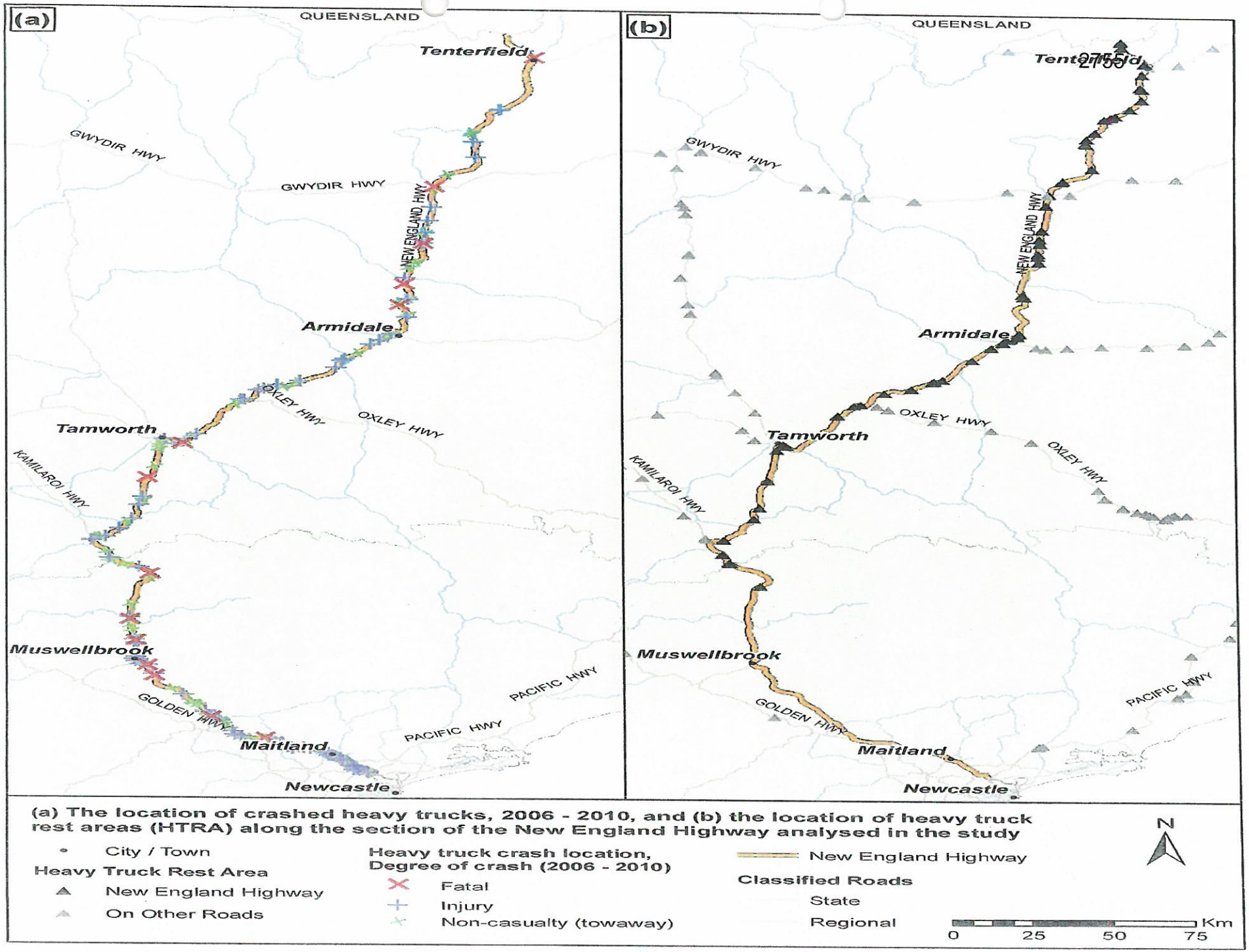


(a) The location of crashed heavy trucks, 2006 - 2010, and (b) the location of heavy truck rest areas (HTRA) along the section of the Newell Highway analysed in the study

- City / Town
- **Heavy Truck Rest Area**
  - Newell Highway
  - On Other Roads
- **Heavy truck crash location, Degree of crash (2006 - 2010)**
  - Fatal
  - Injury
  - Non-casualty (towaway)
- Newell Highway
- **Classified Roads**
  - State
  - Regional

N

0 50 100 150 Km



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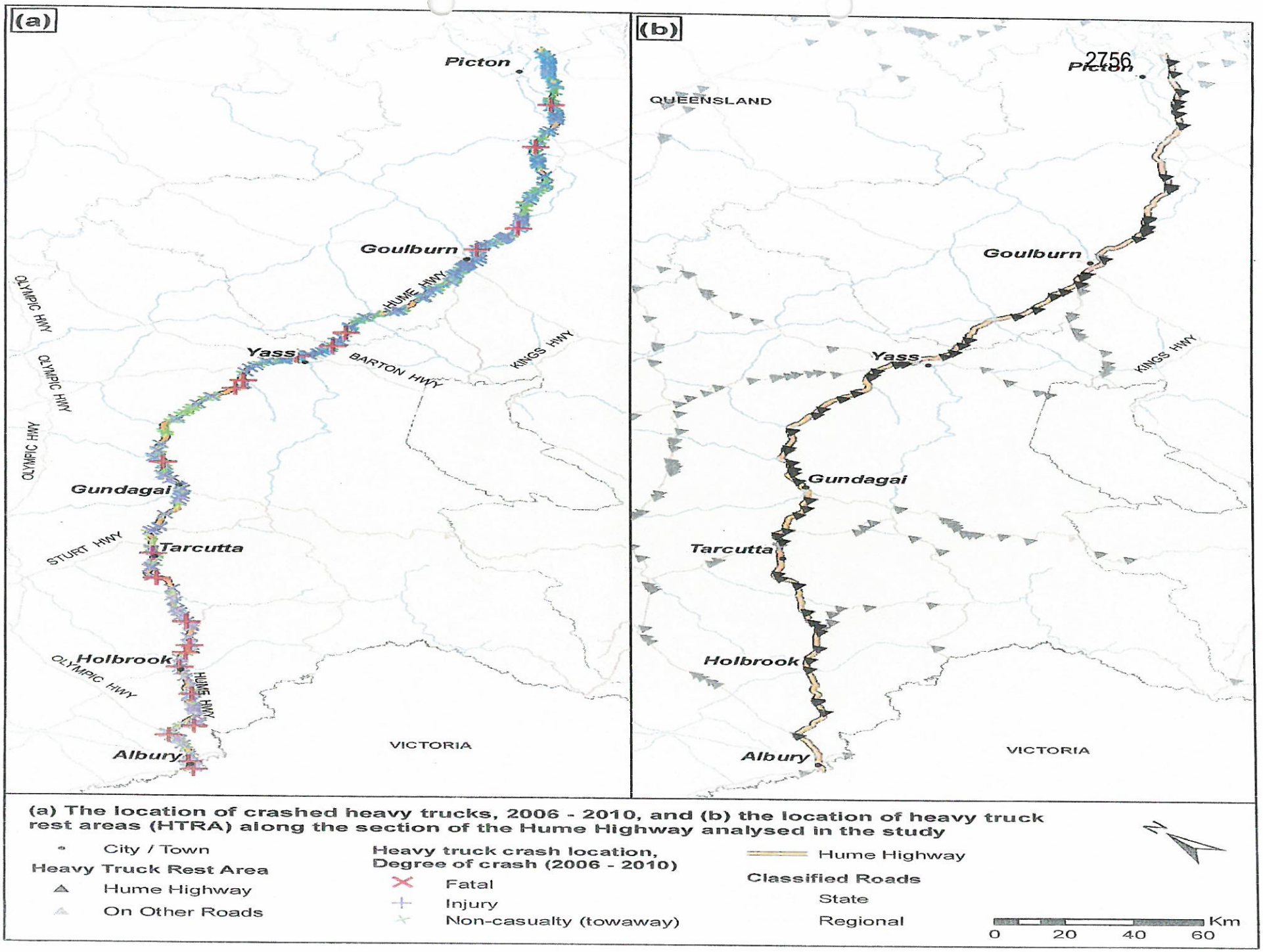


(a) The location of crashed heavy trucks, 2006 - 2010, and (b) the location of heavy truck rest areas (HTRA) along the section of the Hume Highway analysed in the study

- City / Town

Heavy Truck Rest Area
- Hume Highway
- On Other Roads

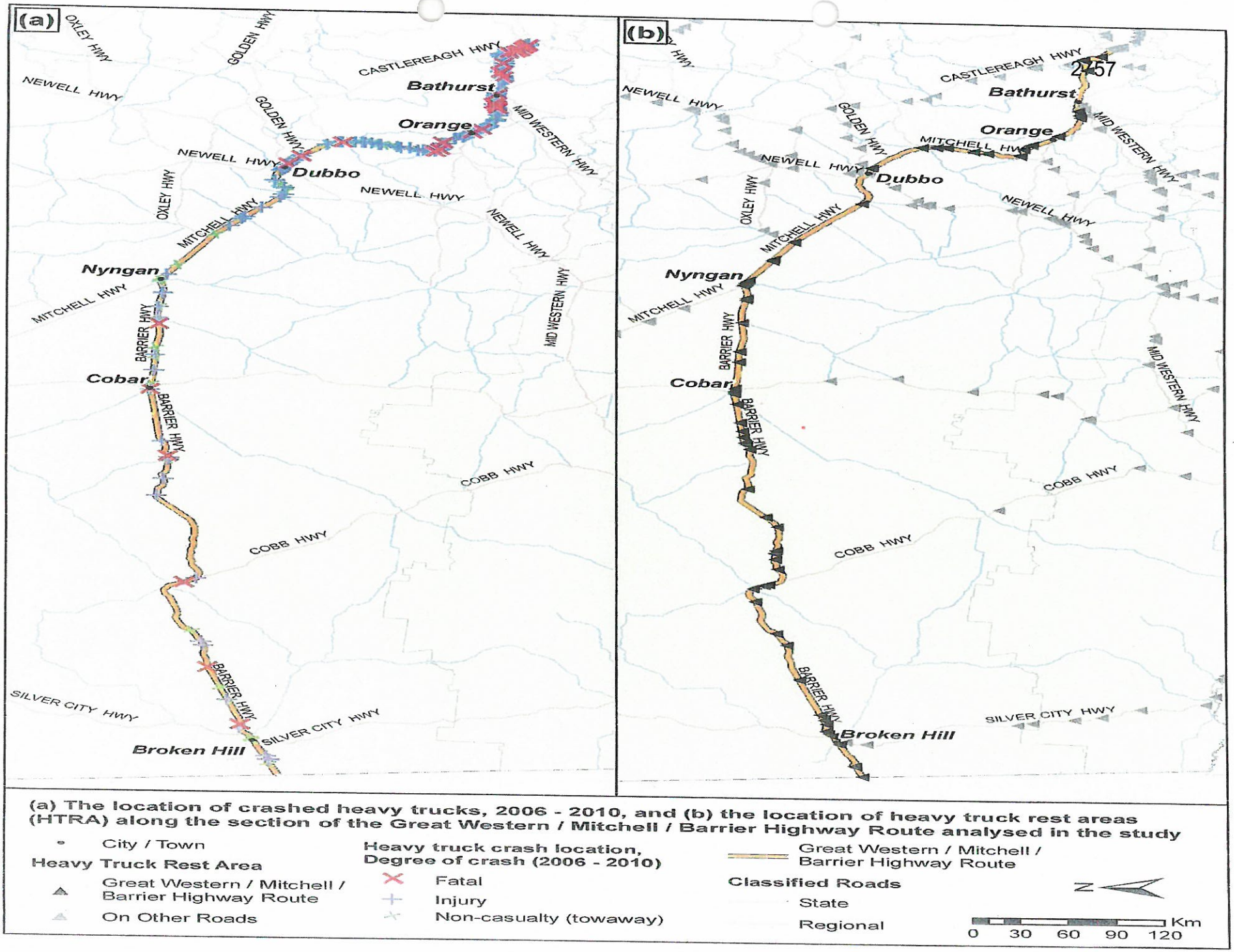
Heavy truck crash location, Degree of crash (2006 - 2010)
- Fatal
- Injury
- Non-casualty (towaway)

- Hume Highway

Classified Roads
- State
- Regional

0 20 40 60 Km

NSW ICAC EXHIBIT



(a) The location of crashed heavy trucks, 2006 - 2010, and (b) the location of heavy truck rest areas (HTRA) along the section of the Great Western / Mitchell / Barrier Highway Route analysed in the study

- City / Town

Heavy Truck Rest Area

- Great Western / Mitchell / Barrier Highway Route
- On Other Roads

Heavy truck crash location, Degree of crash (2006 - 2010)

- Fatal
- Injury
- Non-casualty (towaway)

- Great Western / Mitchell / Barrier Highway Route

Classified Roads

- State
- Regional

N

0 30 60 90 120 Km

NSW ICAC
EXHIBIT