

Investigation into incorrectly located crashes on SH45 in Tataraimaka

Purpose of this investigation

A report produced on 17 December 2018 titled *Report on a Loss-of-Control Incident leading to a Two-Vehicle Crash on State Highway 45 on 16 April 2018 - Report No. 1a/STAUNSTRUP-MOORE-18* by Mr. T. J. Stevenson (the Stevenson Report) identified that certain crashes in the Transport Agency's Crash Analysis System (CAS) have been changed from what was provided by police in their Traffic Crash Reports (TCRs). A subsequent request by Phil Pennington to Waka Kotahi New Zealand Transport Agency (refer OIA-7232) requested an explanation for this.

Details of the investigation

Crash Location Details for 6 crashes highlighted as being in an inaccurate location in Stevenson Report

Crash Date	Crash Severity	Weather conditions at time of crash	Investigation findings	Is the crash located in CAS?	Reason for error	Distance from correct crash location
29 August 2015	Non- injury	Light rain	<p>Inaccurate location may be the result of the Police narrative describing the bend as a downhill right travelling towards New Plymouth.</p> <p>520 North of Weld Road Lower is a downhill right bend travelling north towards New Plymouth.</p> <p>520 South of Weld Road Lower is an up hill left bend towards New Plymouth.</p> <p>It could be the coder has searched for the downhill right bend</p> <p>Sometimes the police location contradicts the narratives they give and as coders a judgement has to be made using all information given.</p> <p>In this case the Armco barrier hit by role 1 was the difference that confirmed the location coded is inaccurate as there are Armco barriers 520 N of Weld Road Lower and none South of Weld Road Lower.</p>	No	Human error	1042m East of correct location

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6 May 2016	Non- injury	Fine	Coded correctly and location described correctly but geographic location is inaccurate	No	System fault Geolocation issue in old CAS	308m East of correct location
19 June 2016	Non- injury	Fine	Coded correctly and location described correctly but geographic location is inaccurate	No	System fault Geolocation issue in old CAS	795m West of correct location
2 January 2017	Non- injury	Mist/fog	Coded correctly and location described correctly but geographic location is inaccurate	No	System fault Geolocation issue in old CAS	776m West of correct location
9 August 2017	Non- injury	Heavy rain	Coded correctly and location described correctly but geographic location is inaccurate	No	System fault Geolocation issue in old CAS	760m West of correct location
27 March 2018	Non- injury	Fine	Coded correctly and location described correctly but geographic location is inaccurate	No	System fault Geolocation issue in old CAS	372m North of correct location

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Crash Location Details for 23 other crashes on SH45 in Tataraimaka between 1 January 2015 – present

Crash Date	Crash Severity	Weather conditions at time of crash	Investigation findings	Is the crash located in CAS?	Reason for error	Distance from correct crash location
17 February 2019	Minor	Fine	Narrative and diagram support the location	Yes		
7 January 2019	Non-injury	Fine	Narrative and diagram support the location	Yes		
28 May 2019	Non-injury	Heavy rain/strong wind	Narrative and diagram support the location	Yes		
11 November 2017	Minor	Fine	Coder has entered location to be – 120 N TIMARU BR, but has been placed at 120 S TIMARU BR.	No	Human error	240m East of correct location
20 February 2017	Non-injury	Heavy rain	Coder has entered location as 85 N, but has been placed at 85 S from TIMARU BR feature	No	Human error	180m North of correct location
20 May 2018	Non-injury	Fine	Narrative and diagram support the location	Yes		
6 September 2015	Non-injury	Light rain	Narrative and diagram support the location	Yes		
2 January 2016	Minor	None	Narrative and diagram support the location	Yes		

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17 February 2016	Minor	Light rain	Narrative and diagram support the location	Yes		
3 January 2016	Non-injury	Light rain	Narrative and diagram support the location	Yes		
27 January 2016	Non-injury	Light rain	Narrative and diagram support the location	Yes		
23 March 2016	Non-injury	Light rain/strong wind	Narrative and diagram support the location	Yes		
31 March 2017	Serious	Mist or fog	Narrative and diagram support the location	Yes		
7 February 2017	Non-injury	Mist or fog	Narrative and diagram support the location	Yes		
13 November 2015	Non-injury	Fine/bright sun	Narrative and diagram support the location	Yes		
1 May 2016	Serious	Fine/overcast	Narrative and diagram support the location	Yes		
16 April 2018	Non-injury	Fine/bright sun	Narrative and diagram support the location	Yes		
25 December 2016	Minor	Light rain/overcast	Narrative and diagram support the location	Yes		
25 March 2018	Non-injury	Fine/bright sun	Narrative and diagram support the location	Yes		

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5 August 2018	Non-injury	Heavy rain/overcast	Narrative and diagram support the location	Yes		
28 February 2020	Minor	Fine/overcast	Narrative and diagram support the location	Yes		
26 December 2019	Non-injury	Fine	Narrative and diagram support the location	Yes		

Conclusions

The investigation confirmed that the 6 crashes identified in the Stevenson Report were inaccurately allocated. One crash was a result of human error. The remaining 5 crashes appear to be the result of the way geospatial co-ordinates were assigned to crashes in old CAS stored the location information of a crash. In addition to these 6 crashes the investigation assessed the additional 23 crashes that have occurred in the area between 2015 and present. Of these 23 crashes another 2 crashes have been placed in an inaccurate location. These appear to be the result of human error, and we will be fixing the location of these crashes. In 2019 the old-CAS system was replaced. The new-CAS solution has a series of automated business rules and functions specifically designed to help prevent the input of inaccurate information as occurred in these instances. In addition, Waka Kotahi is in the process of developing a detailed suite of automated data quality checks that will increase the quality of our crash data by highlighting and reporting on potential data issues on a regular basis. As well as the information held in CAS, Waka Kotahi will produce a detailed crash report under certain circumstances. Waka Kotahi usually only produces crash reports for crashes on the state highway network which resulted in a fatal injury. These reports focus on the road and roadside conditions; for example, road surface, signs, markings. The investigation was not able to identify any Waka Kotahi crash reports relating to any of the 23 crashes.

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