

Technical Memorandum

To: Nick Seymour, Auckland Council
Eric Van Essen, Auckland Transport

From: Max Robitzsch

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Job N^o: 13182.06

Project Title: Mt Albert Town Centre - Video Camera Assessment of Peak Hour Right Turns

This technical memorandum provides a short summary of a video camera-based survey assessment of traffic flows turning right from New North Road at Mt Albert Road during the peak hours.

The assessment was undertaken to inform a potential right turn ban from New North Road into Mt Albert Road at this intersection by identifying what percentage of the potentially prohibited existing right turn trips are “local” versus “regional” trips. Regional trips are considered more likely to be able to be redirected via Richardson Road -> Owairaka Avenue -> Mt Albert Road than local trips.

1. Traffic Survey Background

1.1 Location of Cameras

Cameras were set up at three locations:

- Location 1 – the “baseline” location which videoed all right turners, looking southwest at the intersection of New North Road and Mt Albert Road;
- Location 2 – the first “downstream” location, just west of Allendale on Mt Albert Road, looking east; and
- Location 3 – the second “downstream” location, just west of Owairaka Avenue on Mt Albert Road, looking east.

The three locations are shown in **Diagrams 1-3** below, with an overview in **Diagram 4**.

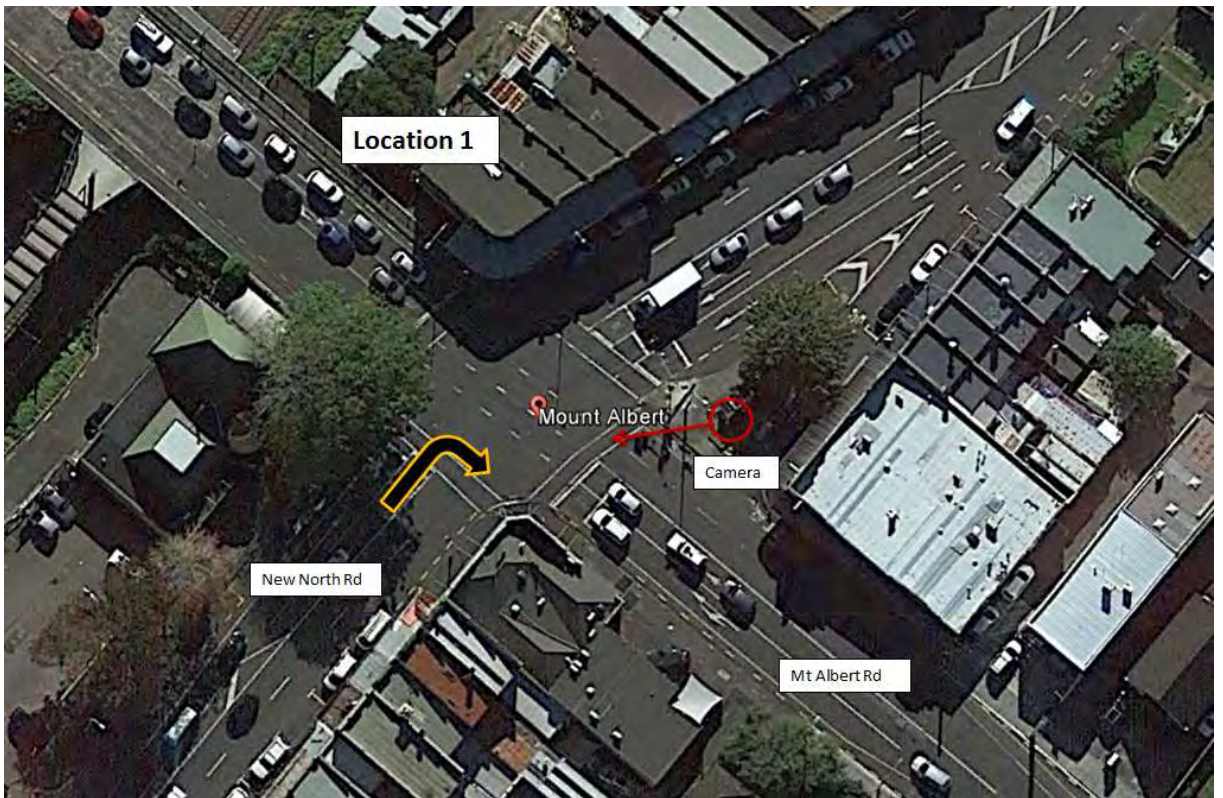


Diagram 1 – Location 1



Diagram 2 – Location 2



Diagram 3 – Location 3

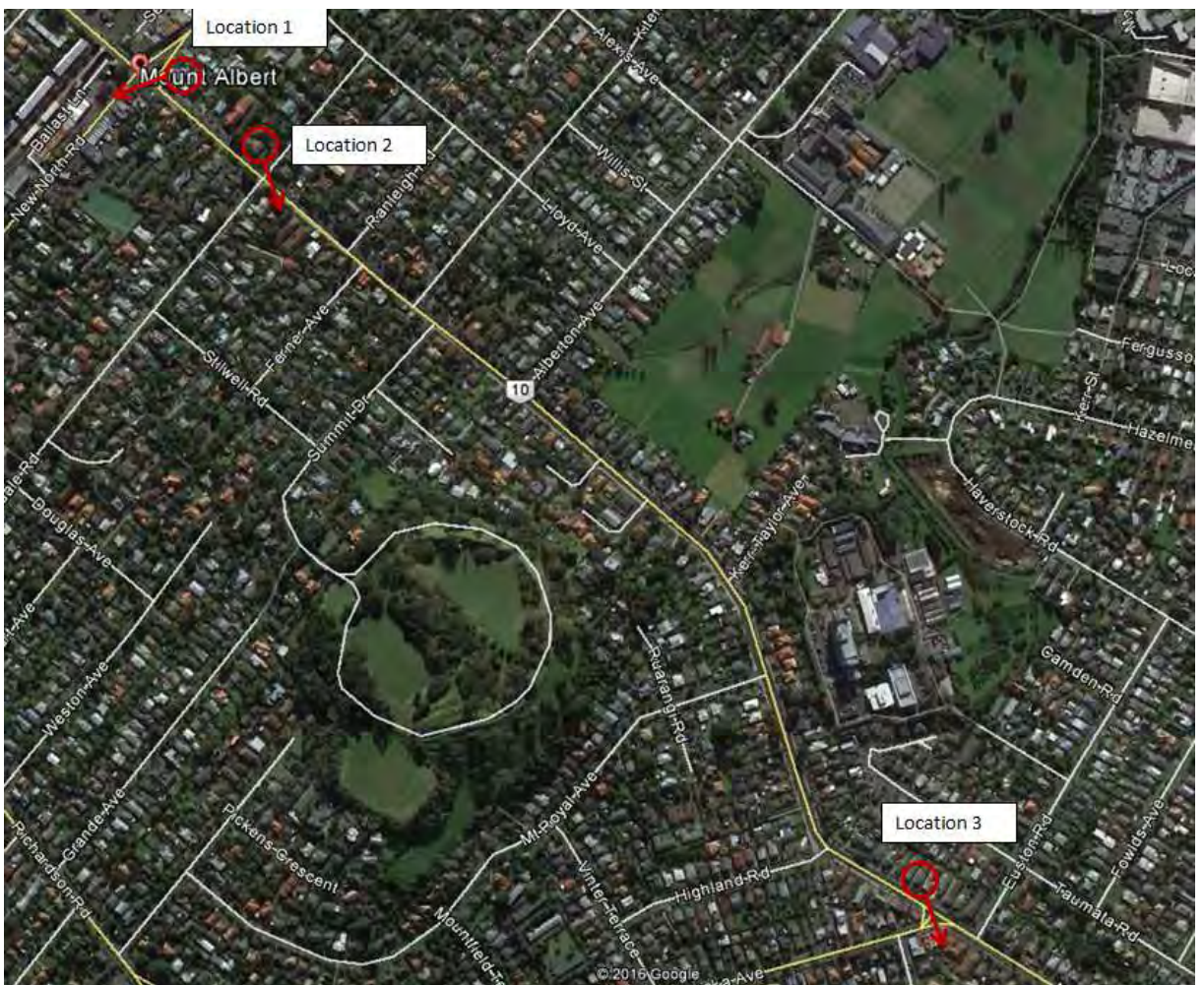


Diagram 4 – Overview of locations



1.2 Survey period

The surveys were undertaken 7am to 9am on Tuesday 1 November 2016 and 4pm to 6pm on Wednesday 3 November 2016, which represent the network morning and evening peaks.

It is noted that there was a 3-4 minute camera malfunction early in the PM peak. However, this would be expected to have caused the survey to miss only approximately 5 or 6 vehicles (based on, and compared to 176 vehicles which were recorded turning right in the remaining 116 minutes). As the key results from the post-processing are percentage-based, not totals-based (i.e. identifying percentages of “local” versus “regional” trips), this is not considered to affect the results to a notable degree.

1.3 Survey post-processing

The camera data was post-processed to assess whether a vehicle surveyed at Location 1 reappeared at Location 2 and 3 within a period of approximately 5 minutes or less (noting that average driving times from Location 1 to Location 3 were found to be approximately 2 minutes). All vehicles taking longer than this, or not appearing at Location 2 or 3 at all during the 2 hour surveys, were taken as local trips (i.e. stopping or turning off in the relevant block).

The post-processing also identified the percentages of vehicles turning right from New North Road into Mt Albert that later turned into Allendale Road or Owairaka Avenue.

2. Traffic Survey Results

With the parameters as described in Section 1, the survey provided the results as shown in **Diagram 5** and **6** below, for AM and PM peak respectively.

Location 1			Location 2			Location 3		
	New North			Allendale				
			2					
			73				45	
Carrington	Mt Albert		1				1	
	Difference (1 to 2)	2		Difference (2 to 3)	30			Owairaka
	New North			Allendale				
			2.6%					
			93.6%				57.7%	
Carrington	Mt Albert		1.3%				1.3%	
	Difference (1 to 2)	2.6%		Difference (2 to 3)	38.5%			Owairaka

Diagram 5 – AM peak (2 hour) flows as captured by data post-processing

As visible from the above Diagram 5, only a very small proportion (less than 3%) of the AM turning movements stopped in the block immediately east of the turn centre.

A very large proportion (93.6%) proceeded past Location 2.

A somewhat reduced proportion proceed past Location 3, thus being considered the “regional” trips (57.7% + 1.3% = 59%). These 59% of all right turn trips are considered divertable via Richardson Road, without needing to use local roads.



	Location 1			Location 2			Location 3		
Stage		New North			Allendale				
				4					
	Carrington		Mt Albert	146			92		
				23			7		
		176							
			Difference (1 to 2)	3		Difference (2 to 3)	74		Owaikara
		New North			Allendale				
				2.3%					
	Carrington		Mt Albert	83.0%			52.3%		
				13.1%			4.0%		
		100.0%							
			Difference (1 to 2)	1.7%		Difference (2 to 3)	42.0%		Owaikara

Diagram 6 – PM peak (2 hour) flows as captured by data post-processing

As visible from the above Diagram, only a very small proportion (less than 2%) of the PM turning movements stopped in the block immediately east of the turn centre.

A still very large proportion (83.0%) proceeded past Location 2. A much larger proportion turned right into Allendale Road at Location 2 than in the morning. However, it is possible that many of these would be people returning home to residences in or off Allendale, i.e. a rerouting of these trips via Richardson Road to Allendale Road (from the south) would not necessarily lead to a linear increase in Allendale Road traffic overall.

A somewhat reduced proportion proceed past Location 3, thus being considered “regional” trips (52.3% + 4.0% = 56.3%). These 56.3% of all right turn trips are considered divertable via Richardson Road, without needing to use local roads.

In summary, the survey establishes the following high-level conclusions:

- Traffic turning right at the town centre and then stopping in the first block between New North Road and Allendale Road is a very small share, at less than 2-3%. Combined with the overall low proportions turning right, this shows that impacts of the potential right turn ban on visitors to the town centre itself are negligible during peak hours;
- Approximately 50-60% of all traffic turning right at the town centre during the peak hours could be considered “regional” trips;
- With proper advance signage (likely at Richardson Road / New North Road) and after a period of initial acclimatisation, these regional trips would be deemed likely to accept a redirection via Richardson Road and Owaikara Avenue;
- The likely ease of redirection would also apply to trips that had their origin in the block of New North Road between Richardson Road and Mt Albert Town Centre – i.e. these trips would start out heading south instead of north, and then turn left into Richardson Road before proceeding via Owaikara Avenue. These trips would not need advance signage, as they would be predominantly locals well aware of a turn ban if implemented;
- Based on this survey, the level of traffic diverted onto local roads by a potential turn ban at the town centre is expected to reduce by a large proportion (at least 50%) compared to the earlier more conservative assessment, due to the high levels of “regional” trips. This is in addition to fact that multiple local redirection options will already reduce flows on any single local street;



- While actual redirection flows of course can only be estimated ahead of time, it is considered likely that actual added flows on any single local road redirection route are thus unlikely to be more than 30-40% of the total right turn flows (under the conservative assumption that 80% of the 50% remaining “local” traffic choose one single route); and
- Based on earlier flow assessment as reported in TDG’s memorandum of 20 October, this would represent in the order of less than 30 vehicles (one added vehicle every two minutes) during the AM peak hour, and less than 40 vehicles (one added vehicle every one and a half minutes) during the PM peak on the most-affected single local street.

TDG