

# Applying Common Sense to the Definition of an Undefined Public Road

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## ABSTRACT

*Undefined public roads exist throughout the State. How is an undefined public road defined? The cadastral bible for NSW surveyors, Hallmann's "Legal aspects of boundary surveying as apply in New South Wales" makes short mention of such roads and makes the presumption that the road reserve is centred on the existing road formation. So simply put, the road is where the road is. In other words, the physical road formation as it exists at the time determines the location of the public road reserve. But what if the physical road no longer exists and what if the road has moved significantly from its original position? These are some of the challenges which faced Resource Design & Management Pty Ltd (RDM) when it undertook the acquisition survey for the Upgraded Pacific Highway through the Glenugie State Forest, some 20 km south of Grafton. The purpose of the survey was to establish the additional area to be acquired from the State Forest for the upgrade. Both the Pacific Highway and Lookout Road were undefined public roads and simply relied on a description in the NSW Government Gazette and the Parish Map to establish their status. The challenge was all the more difficult firstly by the fact that Lookout Road had been obliterated by the new works and secondly by the fact that Lookout Road was found to have moved some 500 m from its original position. This paper describes the methodology used, in this instance, to define an undefined public road when the physical road formation no longer exists and also when the road was found to have moved considerably from its original position.*

**KEYWORDS:** *Cadastral surveying, undefined public roads, indirect survey evidence, easement over track in use, GIPSICAM.*

## 1 INTRODUCTION

The acquisition survey for the Glenugie Upgrade was commissioned approximately two years after the new road works were completed and opened to traffic. The purpose of the survey was to determine the additional land to be acquired under the Roads Act 1993 from the Glenugie State Forest for the Glenugie Upgrade, exclusive of the existing public roads. The upgrade corridor contained two public roads, being the Pacific Highway and Lookout Road.

The survey was complicated as both the Pacific Highway and Lookout Road were found to be 'undefined' public roads. In other words, the roads were public roads that had never been defined by previous surveys. Research into such roads found next to no reference material relating to undefined public roads, apart from Hallmann (1994) and even then there was minimal discussion. Hallmann (1994) makes short mention of such roads and simply indicates the presumption is that the road reserve is centred on the existing formation. Under normal circumstances, where the roads still exist, the survey would have been a relatively simple

matter in so far as determining the location of the formation of the two roads. However, both roads threw up some interesting issues with respect to their definitions which are the subject of this paper.

## 2 BACKGROUND

The NSW Minister for Planning approved the Glenugie Upgrade project in December 2009. The 7 km upgrade forms part of the larger Woolgoolga to Ballina Pacific Highway Upgrade project. The Glenugie Upgrade extends from Franklins Road to Eight Mile Lane some 20 km south of Grafton (Figure 1).

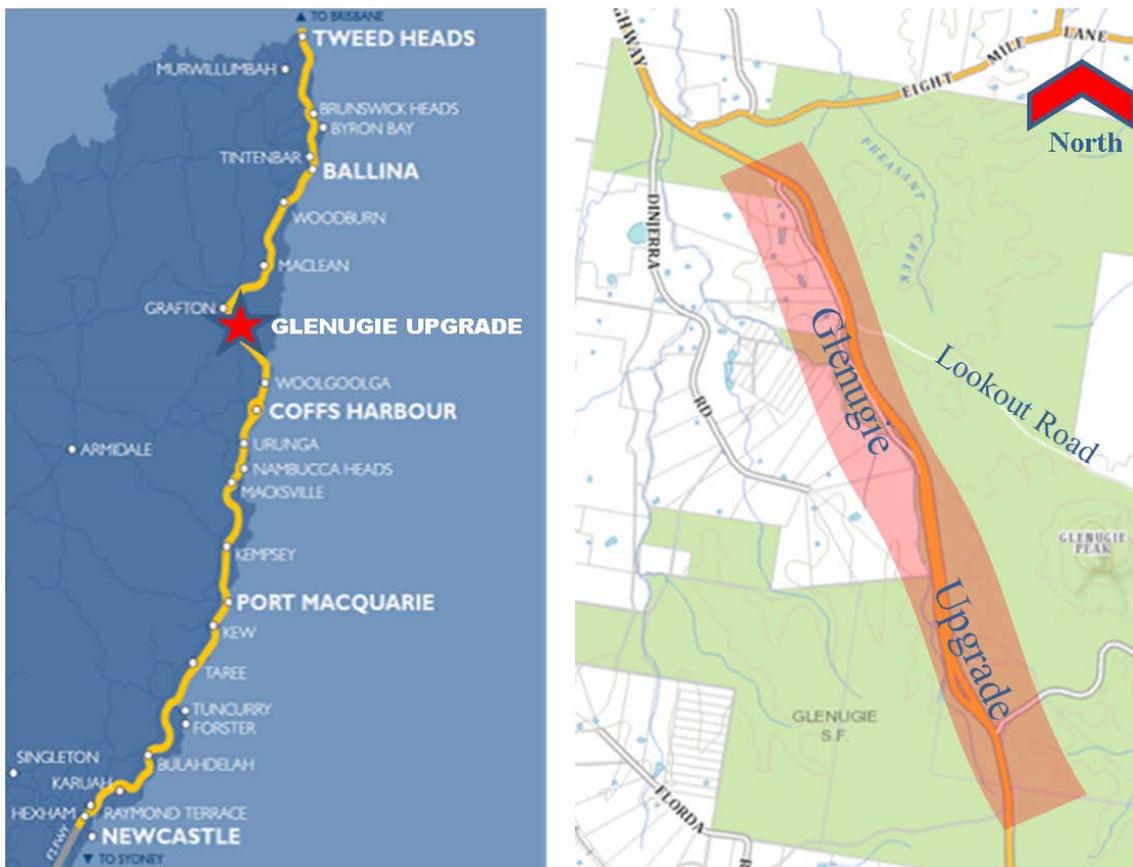


Figure 1: Location of the Glenugie Upgrade.

The Glenugie Upgrade project is wholly contained within the Glenugie State Forest. The project was completed and opened to traffic in October 2011 (Figures 2 & 3). As the project was wholly contained within the Glenugie State Forest, the acquisition of the corridor was not undertaken prior to the construction works. Resource Design & Management Pty Ltd (RDM) was contracted by NSW Roads and Maritime Services (RMS) to undertake the acquisition survey in June 2013, almost two years after the project was completed.



Figure 2: Glenugie Upgrade under construction looking south.



Figure 3: Glenugie Upgrade opened to traffic.

### 3 OLD PACIFIC HIGHWAY

#### 3.1 Determining the Road Width

RMS in commissioning the survey advised that some preliminary investigation of the highway through the Glenugie State Forest had indicated the highway was defined as a fixed width on the existing formation. The width was to be confirmed as part of the acquisition survey.

Glenugie State Forest No. 26 was proclaimed by the NSW Government Gazette dated 10 December 1913, following its earlier notification on 2 June 1884. In July 1940, the State Forest was notified in the Government Gazette as National Forest No. 40. The notification related to the whole of Glenugie State Forest No. 26, excluding “a strip of land 3 chains wide embracing the Pacific State Highway passing through this land in a south-easterly direction” (Figure 4).

Arandim or Glen Ugie Creek aforesaid and on all other sides by that bank downwards to the point of commencement EXCLUSIVELY of a strip of land 3 chains wide embracing the Pacific State Highway passing through this land in a south-easterly direction a public road 1 chain wide in a north-westerly direction from the south-western corner of portion 109 Parish of Lanitza

Figure 4: Excerpt from Government Gazette July 1940.

From this notification there was an original expectation that the existing Pacific Highway corridor would simply be 3 chains (60.35 m) wide, embracing the existing road formation. However, a number of road widening plans undertaken by the NSW Department of Main Roads (DMR) in 1939, namely Ms. 3130 Gfn and Ms. 3131 Gfn, showed the adjoining Pacific Highway as being 100 links or 20.115 m wide (Figure 5). This width was also repeated in the subdivision of the adjoining land in 1982 (DP263104).

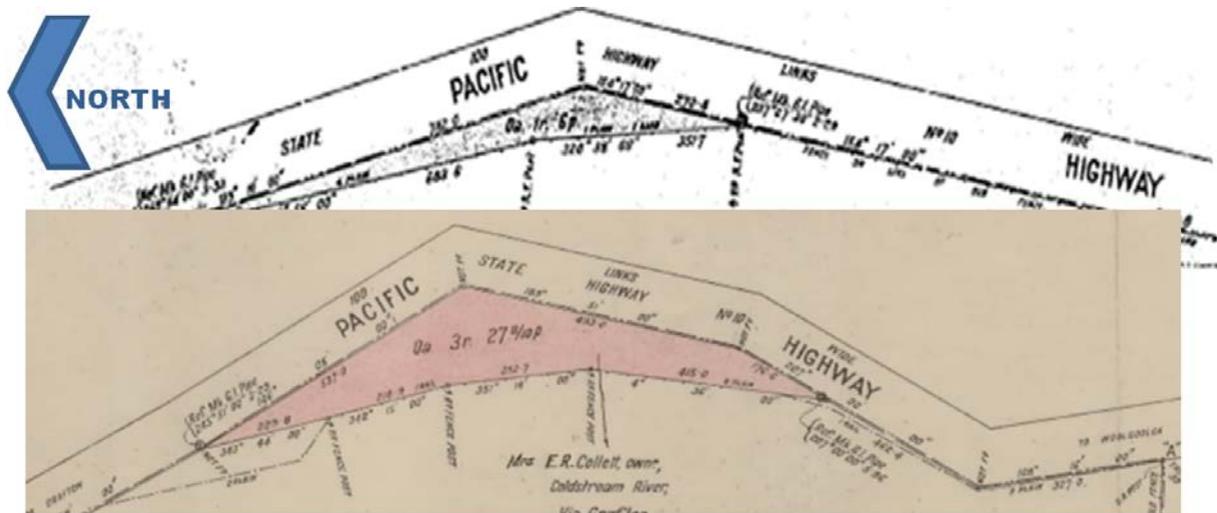


Figure 5: Excerpts from Ms. 3130 Gfn and Ms 3131 Gfn.

Contrary to these plans, DP719173 undertook some road widening of the highway in 1984 and was the first plan of survey required to define the eastern boundary of the highway – it did so on the basis of the corridor being 30.175 m (150 links) wide. The plan also agreed with the width shown on the Parish Map of Lanitza, both of which are shown in Figure 6. Accordingly, the width of the Old Pacific Highway of 30.175 m (150 links) was adopted for the ongoing acquisition survey.

### 3.2 Defining the Old Pacific Highway

The Old Pacific Highway abuts the eastern boundary of Portions 57 & 58 in the Parish of Lanitza as shown on the Parish Map (Figure 6). However, from near the south east corner of Portion 58 through to Glenugie Creek and beyond, the highway is bordered on both sides by the Glenugie State Forest No. 26. A thorough investigation of this section of the highway did not uncover any previous survey activity or plans to define its location. This led to the conclusion that the highway was undefined through the State Forest, apart from the area surveyed as part of DP719173 (Figure 6).

Research undertaken into undefined public roads found limited commentary or reference material for such a situation, other than a small mention in Hallmann (1994). Hallmann, in discussion on Section 73 of the Local Government Act 1906, states on pages 6-7, in part, that:

*“Many roads opened through reserves were not defined by survey and only an approximate indication of their position may be obtained from the parish maps. The whereabouts of their boundaries on the ground is a question of fact, the presumption being that the road extends 10.06 metres (33 feet) from either side of the centre line of the prepared surface in use, where the standard width of one chain was dedicated.”*

*The same section, as amended in 1908, also for the purpose of that Act extended the statutory definition of ‘public road’ so as to include inter alia a list of roads classified as main roads in Government Gazette dated 31 December 1906, many of which in part were undefined on the ground.”*

From the above, Hallmann (1994) makes the logical presumption that for an undefined public road, the road corridor extends centrally over the existing formation. On this basis, the centreline of the Pacific Highway where it is bordered on both sides by the Glenugie State Forest would be adopted to define the road corridor.



Figure 6: Excerpts from DP719173 and Parish Map of Lanitza.

### **3.3 Ambulatory Nature of Undefined Public Roads**

Another consideration with respect to an undefined public road is the ambulatory nature of such a road, i.e. the road may move at an easy pace in response to physical changes. Using the Pacific Highway as an example, it would be expected that over time the highway in general would have undergone a number of physical changes responding to the needs of modern day road transport and safety considerations. Therefore, would continual improvements to the highway over time to accommodate for larger vehicles and traffic of higher speed (e.g. involving widening or changes in alignments) be considered to be simply changes from time to time due to changing physical conditions? On this basis, an undefined public road remains ambulatory in nature up until such time as it is defined and fixed by survey.

### **3.4 Determination by Indirect Means**

The issue of defining the existing highway corridor was further complicated as parts of the existing formation were obliterated by the Glenugie Upgrade works and no physical evidence remained in parts to confirm its location prior to the works. Fortunately, RDM was able to obtain an electronic copy of the detailed ground survey undertaken by RMS for the engineering design of the Glenugie Upgrade. RDM was then able to extract the control traverse from the file. Of particular interest to RDM were connections to currently existing state survey control marks such as PMs and other current marks.

Through this process, RDM was able to extend the survey control to connect to the same marks and thereby undertake an adjustment of the original detailed ground survey to obtain a strong correlation with the survey control for the acquisition survey. It was then necessary to ensure the actual detail picked up pre-construction was of sufficient accuracy to be relied upon to re-establish the location of the Old Pacific Highway. This was achieved by comparing details of the old highway in areas where it was not disturbed as a result of the new road works. Again, the comparisons between the two models provided a strong correlation sufficient to adopt the detail survey for determining the location of the Old Pacific Highway.

## **4 LOOKOUT ROAD**

Referring back to the Government Gazette of July 1940 (Figure 4), the notification also excluded another road: “public road 1 chain wide in a north-westerly direction from the south-western corner of portion 109”. The road, in this case, was Lookout Road which was a minor gravel side-road connecting properties through the State Forest to the Pacific Highway (Figures 7 & 8). The whole of Lookout Road within the corridor had been obliterated as part of the construction works, leaving no physical evidence of its previous location. Again, the survey had to rely on indirect means to establish its location prior to the upgrade, utilising the previously mentioned detailed ground survey.

The definition of Lookout Road was expected to be a relatively straightforward process of simply overlaying the RMS detail survey over the established cadastral model to fix its alignment. However, this was not to be the case. It was not that the detail was incorrect; it was simply that the location of Lookout Road was noticeably different to that shown on the Parish Map of Lanitza. This difference was in the order of 500 m (Figure 9).

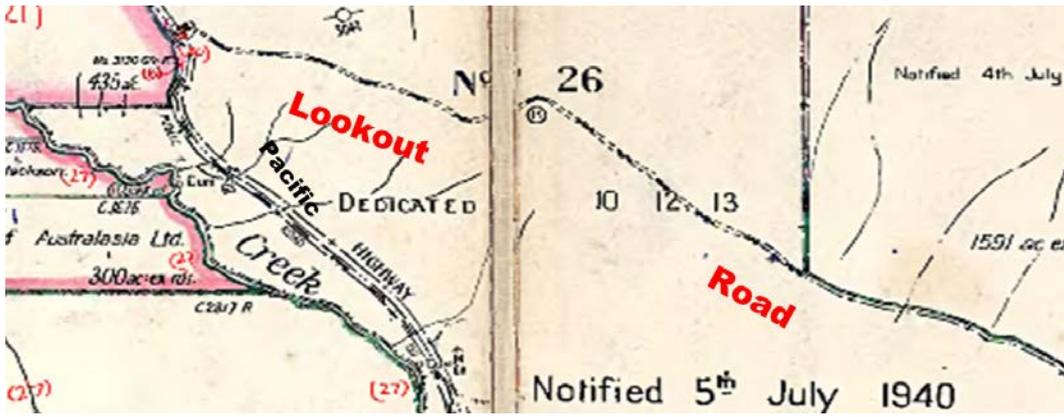


Figure 7: Excerpt of Parish Map showing Lookout Road.



Figure 8: A typical view of Lookout Road outside of the corridor.

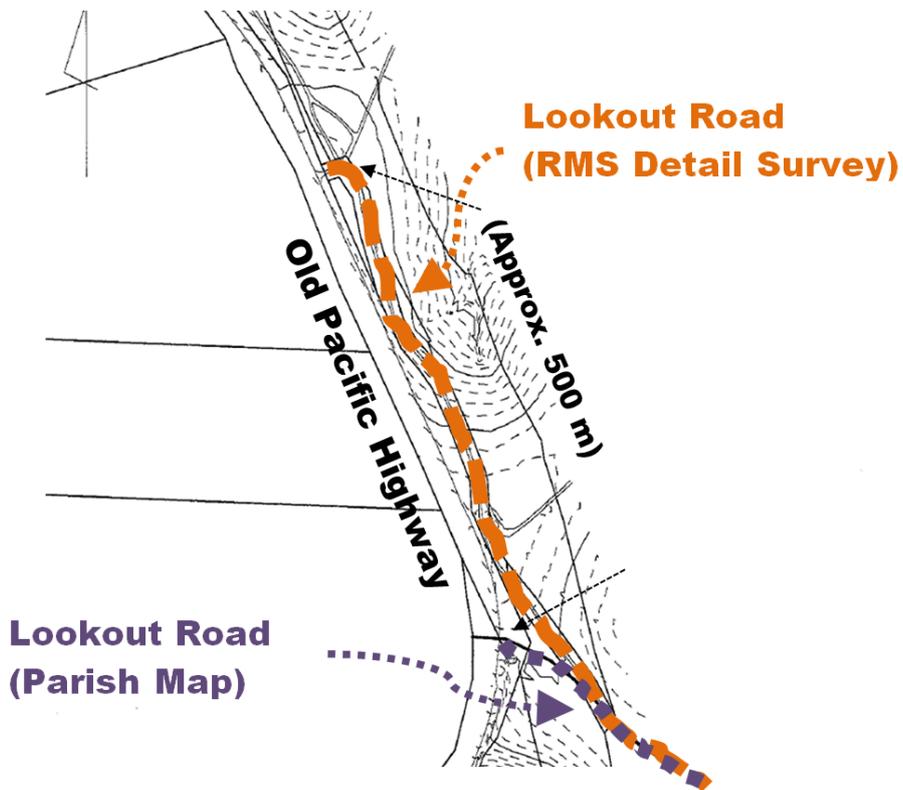


Figure 9: Lookout Road showing variation between RMS detail survey and Parish Map.

As previously determined, an undefined public road is considered to be ambulatory in nature. However, to what extent should this principle apply? Does the notion of ambulatory extend to 500 m?

This raised a number of questions with respect to what should be the underlying principles of an undefined public road. As stated earlier, there was scant information in regards to such roads, and accordingly it was necessary to adopt a common sense approach backed up where possible by already established principles for similar survey situations. In this case, the principle applying to ‘easement over a track in use’ as described in the NSW Registrar General’s Directions seemed apt (LPI, 2015): “the easement site might vary, from time to time, due to changing physical conditions”. This concept is well understood, but what if the track (or in this case road) varies by 500 m? Is it the same track or road?

The relocation of the Lookout Road intersection appears to have been a response at some point in time to the need for a safer access point to the Pacific Highway. A public road implies that the road is available for the general public to cross and re-cross at all times. If access to the Pacific Highway was denied temporarily whilst some maintenance work was being undertaken or that the change simply provided an alternate/preferred access to the highway, it would generally be accepted that the road would remain in its original location.

But what if access was fenced off to deny any further access? Would it be deemed that the road had simply varied due to changing physical circumstances? Coming back to the easement over track in use analogy, if a track in use moves significantly to avoid a land slip, fallen tree, or for some other reason, does the easement over the track in use move? RDM took the view that the easement over a track in use would move unless some timely action was taken to restore the track to its near original location.

Before accepting that Lookout Road had physically moved to its new location, based simply on the earlier detail survey, it was necessary to understand whether access to the highway still existed prior to the construction works. In this regard, with the help of RMS, RDM was able to obtain historical images from RMS’s Global-Inertial Positioning Systems Image Capture for Asset Mapping (GIPSICAM) system dated February 2007 (Figure 10). The GIPSICAM system is set up to photographically record geo-referenced images along the Pacific Highway at 10-metre intervals on a 2-year rotation.

Accordingly, RDM was able to view the area of interest and confirm that no physical road connection existed between Lookout Road and the Pacific Highway at or near the original location. The images showed Lookout Road running near parallel to the highway and with access denied by an old post and wire fence, which suggested the access had been closed off for some considerable time. Consequently, Lookout Road as an undefined public road was deemed to have moved with its formation to its new location some 500 m north from where shown on the Parish Map.



Figure 10: Images from GIPSICAM (2007) showing Lookout Road.

## 5 CONCLUDING REMARKS

The acquisition survey for the Glenugie Upgrade raised some unusual issues relating to 'undefined' public roads, which required a common sense approach to resolve them. The notion of ambulatory suggests variations over time in response to changing circumstances. However, the notion is simply moving at an easy pace, it does not imply sudden movement.

In the case of sudden movement, the analogy between an 'easement over a track in use' and an undefined public road appears to be more suited, given the circumstances where a track (or, in this case, an undefined public road) varies from time to time due to changing physical circumstances. The description of an 'easement over a track in use' does not imply whether

the variation needs to be sudden or gradual, nor does it imply that the change needs to be minor or major in extent. Presumably, it could be either or both.

However, the idea of the road moving some 500 m still required considerable thought and appropriate justification that the road was, in fact, still the same road. The test was whether the change was temporary or permanent in nature. The evidence provided by the RMS GIPSICAM system provided sufficient proof that the road had, in fact, changed and the change was permanent in nature. The GIPSICAM photographs indicated that access to the Old Pacific Highway from Lookout Road at or near the original location had been denied for considerable time by the fencing apparent at the time.

The survey and resulting investigations established a number of principles as suitable in the future definition of an undefined public road:

1. The road corridor extends centrally over the road's formation.
2. The road formation may vary from time to time due to changing physical conditions.

The resultant survey was accepted by RMS and subsequently registered by Land and Property Information (LPI) as DP1193563 on 3 March 2014.

## ACKNOWLEDGEMENTS

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## REFERENCES

Hallmann F.M. (1994) *Legal aspects of boundary surveying as apply in New South Wales* (2<sup>nd</sup> edition), Institution of Surveyors Australia, New South Wales Division, Sydney, 430pp.

LPI (2015) Registrar General's Directions: Easement over a track in use, [http://rgdirections.lpi.nsw.gov.au/deposited\\_plans/easements\\_restrictions/easement\\_over\\_track\\_in\\_use](http://rgdirections.lpi.nsw.gov.au/deposited_plans/easements_restrictions/easement_over_track_in_use) (accessed Jan 2015).