**Granular Pavement Compaction – Enhancing Compaction Procedures**

Emile van Zyl, Fulton Hogan

Granular pavement layer compaction is critical in any pavement to limit consolidation under traffic loading. Industry specifications mandates the use of the Nuclear Density Meter (NDM) as a compliance measure. The NDM in Backscatter Mode has been the specified norm regardless of pavement layer thickness, however this mode is only effective to ± 70 mm. Granular layers are commonly 150 mm to 250 mm thick whereby compliance is achieved easily in backscatter mode yet after construction, typically the first six months, consolidation may be observed in some sites.

Waka Kotahi NZTA has issued draft specifications *NZTA T23 2021: Estimation of The Density of Compacted Aggregate Layers by Direct Transmission* and *NZTA T24 2021: Determination of the Plateau Maximum Dry Density for Road Layers* to industry, however implementation has not yet been mandated. These specifications identifies the shortcomings of the NDM in backscatter mode and specifies methods and procedures to overcome it.

Fulton Hogan has identified this as a significant quality aspect prior to the specifications being mandated and has taken measures to adopt the notion of these specification to achieve better performing road pavements.

The presentation will include:

* Background and function of the NDM in the respective modes;
* High Level summary of NZTA T23 and T24 draft specifications;
* Fulton Hogan current approach to improve compaction with emphasis on Plateau Testing Procedure and Direct Transmission Method whilst NZTA T23 and T24 is not mandated in industry; and
* Operational changes and other impacts.