Building Asset Management and GIS Capabilities within Regional Australia

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Introduction

We all know how large Australia is; To manage public infrastructure it takes 537 local government bodies covering a diverse range of metropolitan, regional, rural and indigenous communities. The vast majority, 60 to 70%, are regional or remote councils.

Nationally, local councils spend in excess of $32 billion each year providing infrastructure, economic and community services to local communities *(Roads alone account for $26.1 billion for the 2016 – 17 financial year)*.

Furthermore, roads owned and maintained by local governments account for 75% of the entire Australian road network, or 662,000 kms.

	Urban					Non - Urban					Total
	Highway	Arterial	Local	Busway	Total	Highway	Arterial	Local	Busway	Total	
NSW	1,500.7	4,068.9	34,688.0	53.1	40,310.7	10,341.3	69,844.7	88,127.4	-	168,313.4	208,624.1
VIC	1,676.4	5,096.5	30,930.1	-	37,703.0	6,592.7	30,477.0	74,248.7		111,318.4	149,021.4
QLD	1,099.6	2,379.0	27,825.0	35.2	31,338.8	10,915.8	19,062.0	165,314.9		195,292.7	226,631.5
SA	289.7	1,931.2	10,280.3	25.9	12,527.1	3,484.6	14,480.4	62,812.1		80,777.1	93,304.2
WA	1,489.1	1,682.8	16,392.6	13.2	19,577.7	9,944.1	15,174.4	112,236.0	6.1	137,360.6	156,938.3
TAS	349.3	566.9	3,066.2	-	3,982.4	1,529.0	3,288.5	11,095.8		15,913.3	19,895.7
NT	23.5	312.5	963.4	-	1,299.4	2,649.8	13,691.5	1,797.4		18,138.7	19,438.1
ACT	60.0	334.6	2,760.2		3,154.8	38.7	65.5	359.3		463.5	3,618.3
Other					-		18.6	160.6		179.2	179.2
AUS	6,488.3	16,372.4	126,905.8	127.4	149,893.9	45,496.0	166,102.6	516,152.2	6.1	727,756.9	877,650.8

Figure 1: Distribution of road classes per state in Australia

With a substantial asset stock for many road authorities, it is important to manage these assets sustainably, but how effectively are we doing this? The research from the National State of the Assets report suggests that $30 billion is required to renew and replace infrastructure in poor condition, now or in the short-term.

Australia's population of about 25M (2018) is projected to reach 36M by 2050 which will mean passenger transport and commercial freight will grow. This is assuming other methods are not utilised to steady this increase in road traffic.

With traffic volumes expected to increase this could deteriorate roads faster, and with an estimated $14.5 billion backlog in renewals of roads and bridges

identified in the National State of the Assets report we could find ourselves in a bit of a predicament in 10 to 20 years.

So how do we change from being reactive to proactive and reduce the backlog? I believe the solution is with cost effective and proven asset management techniques to confirm asset register dimensions and accurately determine intervention levels of renewals and implementing appropriate service levels we can slowly chip away at this backlog. This, together with proper asset management planning, will ultimately benefit the community with safer roads and an aim to reduce costs due to correctly intervening at the right time.

One recent project completed by Shepherd demonstrates this approach can be completed cost effectively and upskill Council staff at the same time to undertake this work in the future. It is critically important to upskill staff in remote locations as they have limited opportunities to attend IPWEA events, and transfer of knowledge and current practices is important.

A Road Condition Survey of 2,855 kms was undertaken utilising specialised hardware known as RACAS to complete the survey. We were able to model this data with other Council metrics to determine the condition of sealed surfaces, sealed pavements and unsealed pavements. This modelling was used to create a works plan, and ultimately a comprehensive valuation and asset management plans.

After this entire process we were able to complete gap analysis and forecast costs into the future to assist in the long-term viability of this Council. Importantly, Council staff involved in the project were upskilled during the process and now have the capability to complete this work in the future.

Referencing
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BIOs

Patrick McGuire is a Spatial Sciences professional with experience working in the Local Government and private sector promoting best practice in Surveying, GIS and Asset Management. Patrick is professionally certified in GIS and asset management planning in Local Government. Patrick also serves as committee member for the Tasmanian IPWEA division.