2021

Automated Road Surface Assessments

prepared by

Frontline Data Systems

Cheap, Outdated Surveying Methods Drive Up the Cost of Repairs

Road maintenance costs account for 10 percent of Victorian local councils' expenditure [1]. To keep these costs under control, an automated, data-driven, proactive maintenance plan is required [2]. With the decline of discretionary spending, local governments cannot afford to waste funding on poorly planned maintenance, but the Victorian Auditor General's 2021 *Maintaining Local Roads* report found they do exactly that:

"Councils do not collect the detailed data they need to monitor the costs of maintaining their local roads network"[1], which likely leads to much higher maintenance costs in the medium term. Councils are estimated to spend less than 1.3% of their yearly road maintenance budget collecting data on their network, but this reluctance to spend on data collection is likely costing them and their rate-payers dearly in the long run.

Better Road Asset Data with Magpeye

Manual assessments, which usually end their lives as a pile of arcane spreadsheets, have proved too unreliable for effective maintenance planning. LIDAR assessments are too slow, too expensive and unable to detect key defects. What local road maintainers need is a reliable, automated system that collects highly detailed road condition data all year round and presents it in a readable standardised format.

Est. Annual Spending per km
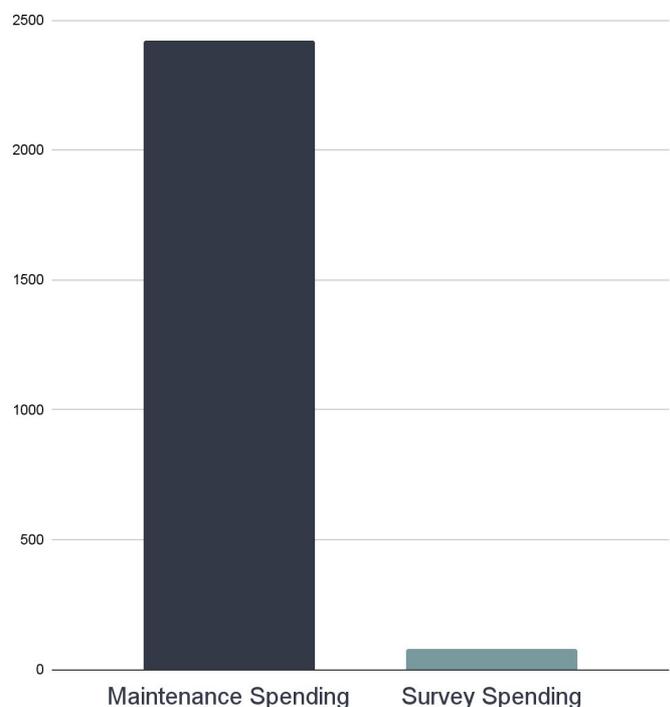
"Accurate and updated road condition data is essential for planning road maintenance. It allows councils to prioritise council funds for roads that need it the most" [1]

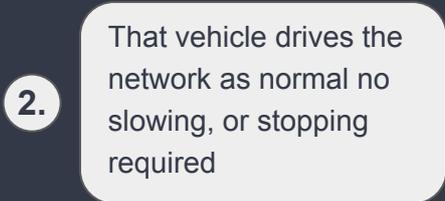[1] Victorian Auditor General. Maintaining local roads. Technical report, March 2021.
[2] ACT Audit Office. Maintenance of Selected Road Infrastructure Assets. Technical report, June 2017.

The Magpeye System

1. One of our Magpeye optical sensing devices is mounted in an ordinary vehicle

2. That vehicle drives the network as normal no slowing, or stopping required

3. Captured Footage is uploaded to our servers

4. Our world-leading artificial intelligence engine assesses the uploaded footage and geolocates any defects

5. A highly detailed road condition report is published to our Magpeye dashboard

Magpeye Product Benefits

Multiple Surveys in One

The Magpeye system is a world leader in terms of flexibility. It can pick up hazardous defects such as potholes or texture loss, condition related issues like fatigue cracking or ravelling, and other features such as overhanging branches or white line defects. This means that with Magpeye, road maintainers can roll multiple survey types into one, freeing up more time for important work, like fixing defects.

A view of Frontline Data Systems' Magpeye dashboard, with individual faults identified and geolocated
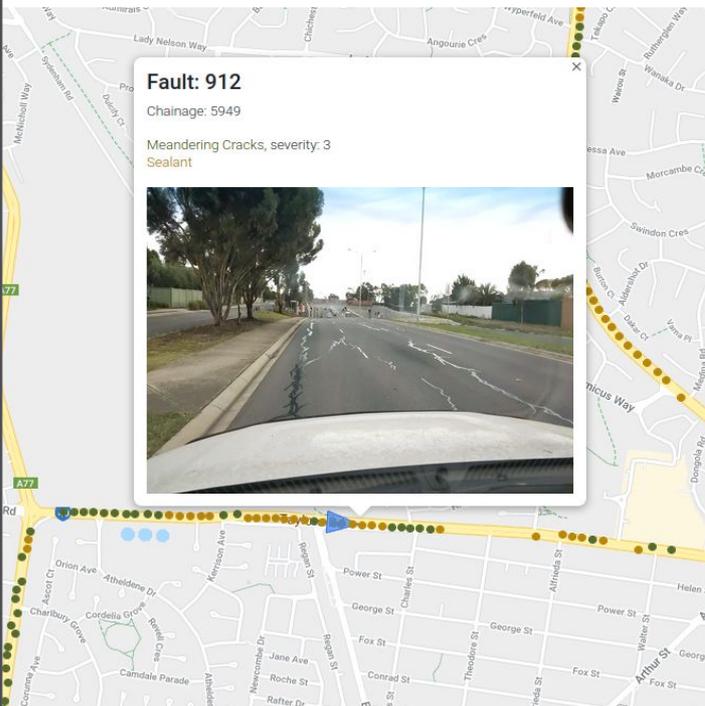

Safe

Unlike manual inspections, which must be carried out at slow speeds, and sometimes require surveyors to exit their vehicles on busy roads, Magpeye assessments are performed from the safety of the driver's seat, up to speeds of 100 kilometres per hour. This keeps council employees and the residents they share the roads with safe, and brings all of us one step closer to Target Zero of the National Road Safety Strategy.

High Quality Data

Human error and inconsistency are often seen as the largest flaw of manual assessments, but the real problem is how to store it all. Manual assessment data usually lives on a single computer as collections of large and often unreadable spreadsheets. These spreadsheets are almost always too convoluted to be understood by anyone except the long-time employee who wrote them, and when that employee retires they

usually end up taking several years worth of road condition data with them.

Magpeye data is stored in a geographic format, contextualised using Google Maps, in the cloud and displayed on a secure web application, accessible from anywhere in the world. Designed by user-experience experts, it's easy to operate and understand, even for someone with no prior road maintenance experience.

Better yet, once the data is recorded it's readily available forever, allowing councils to build powerful predictive models for their own road network, or simply sell on to other road maintainers who want to better understand the process of road degradation.

With Magpeye your road condition data becomes an asset rather than an inconvenience.

Built For Australia

Frontline Data Systems is a Melbourne based company, proudly Australian-owned and operated. We're committed to improving the quality of local roads, that's why our system was built, designed and battle tested right here in Melbourne, making our technology uniquely adapted to detecting defects in the Australian built environment. Our highly responsive customer support team is also based in Australia, so whenever you call up you are guaranteed to get in touch with someone who speaks your language.

Because we care about Australian roads we are currently offering free trials of our Magpeye system to eligible road maintenance authorities. To find out if your council may be eligible, simply get in touch via our website.

Delamination, 3   Ravelling, 2

Texture Loss, 2   Sealant

Scroll Speed   To Map

Chainage (m):   1879   /17201

Severe delamination captured and geolocated by the Magpeye System