



## DATA COLLECTION LIMITED

### PAVEMENT CONDITION TESTING: HIGH SPEED SURVEY



# PAVEMENT CONDITION TESTING

## BENEFITS

- » Innovative, market leading technology
- » Surveying at traffic speed; no traffic management required
- » Vehicle Survey; no need for physical road inspections
- » Rating assets from the office
- » Simultaneously collecting and synchronising all data sets from one survey.
- » All datasets are collected and only the information required will be processed and analysed. Option of acquiring additional datasets at a later date without the need to resurvey.

Pavement condition data is essential to prioritise and manage maintenance activities on pavement surfaces - whether it's main arterials, back country rural roads, runways or ports.

Data Collection Limited specialises in surveying roads, airports, ports, railways, and providing data and information on the assets surface and sub-surface condition.

We operate a fleet of survey vehicles dedicated to collecting accurate, reliable and relevant data used in making sound engineering judgements and network level maintenance decisions.

Our services are ideal for those who require the high accuracy and variety of data needed to manage modern roads.

## Applications

- » Annual surveys along sealed and unsealed pavements, forms part of forward works programme
- » Inventory and assets record
- » Budgetary decisions for pavement maintenance and repair

## DELIVERABLES

### Project and Network level testing

Longitudinal profile and Roughness	Rut data	Macrotexture
Pavement surface rating	Asset Inventory Rating	Road Geometry
Video imagery	Laser based pavement imaging	GIS Information



# SURVEY: HIGH SPEED DATA SURVEY

## BENEFITS

- » Multitude of datasets collected in one survey: additional data can be obtained by further processing at a later date
- » The ability to reprocess data using a variety of parameters without the need to resurvey
- » Quality Control Sites surveyed before testing commences
- » Skilled operational staff ensuring accurate and reliable data is delivered
- » LCMS laser imagery; can be operated day or night

## Standards

- » AUSTRROADS Test Methods
- » ASTM Standards
- » AASHTO Standards
- » ISO Standards

High Speed Data (HSD) surveys typically require roughness, rutting, texture and geometry data at network level. Equipped with the latest Pavemetrics' Laser Crack Measurement System (LCMS) scanners, our HSD survey vehicle can simultaneously collect these data sets along with cracking and pothole detection, and a multitude of other surface defects in one survey.

LCMS combined with ROMDAS controller, videos cameras, GPS and distance measuring equipment, allows for video imagery that can be used to identify defects, monitor assets and undertake road safety audits, all in the safety of the office.

This HSD survey vehicle collected data can be easily imported into pavement management systems (like RAMM) to use the collected data, in conjunction with other data sets for maintenance and planning.

## Applications

- » Perform forward works programme and undertake asset valuation.
- » Plan maintenance activities and maintain the network to a high standard.
- » Annual survey allows pavement deterioration to be assessed and therefore determine modelling.

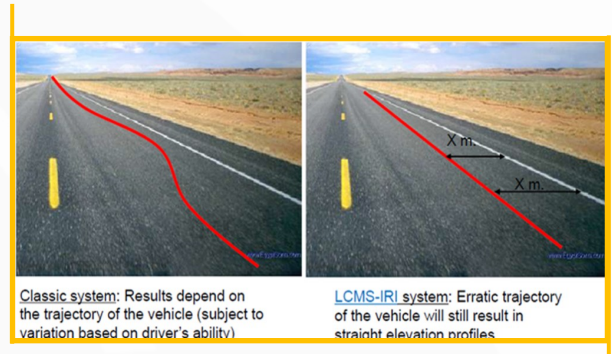


# LCMS: KEY HIGHLIGHTS

Our HSD survey vehicle is one of the most advanced, integrated and multi-functional road surveying system. It records a 4m wide profile every 5mm along the road at normal traffic speed. The high frequency of profiles allows for automatic identification of a range of critical pavement attributes. Because LCMS images are laser image-based they are completely unaffected by ambient light conditions (which is problematic in traditional video-based pavement imaging systems). This allows us flexibility to conduct survey during the day and at night.

## LCMS: Unique Features

- » Lane Tracking
  - » Eliminates the influence of vehicle wander
  - » True representation of pavement changes; references data to lane markings and kerb position instead of the vehicle's position.



- » Extremely high accuracy transverse profiles
  - » High accuracy transverse profiles with 4000+ points across lane compared to traditional (up to) 17 single transverse profile.



- » Macrotexture
  - » Traditional laser profilers only measure macro-texture in a single line, while LCMS can calculate macrotexture across the lane width.
  - » The LCMS can provide 5 longitudinal bands (the 5 AASHTO bands are central band, two wheel path bands, and two outside bands)

- » Roof mounted equipment

LCMS equipment is mounted 2.2m above the ground; less vulnerable to accident and damage than traditional multipoint laser rut bars mounted at bumper height.

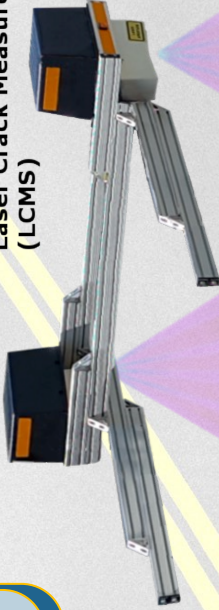
## DELIVERABLES

Cracking (width, depth, length, type and sealed or unsealed)	Rut Depth, Width and Cross-sectional	Longitudinal Profile and Roughness (IRI)
Texture (MPD, ETD, SPTD)	Bleeding	Shoving
Raveling	Pothole Detection	Concrete Joints and Faulting
Sewer and Storm Drain Detection	Pavement Marking Detection	Edge and Kerb Detection
Surface Defect Rating	Asset Inventory Rating	Road Geometry
Video Imagery	Laser based Pavement Imaging	GIS Centreline Data

**High Speed Network Survey:**

Pavement Condition Testing with high speed network vehicle to collect 3d profiles and images of the pavement surface using the latest technology Laser Crack Measurement System (LCMS). Simultaneously collect automated defects such as cracking, potholes, roughness, rutting, and texture data along with many other surface defects.

**Laser Crack Measurement System (LCMS)**



**High Resolution Odometer (HRDMI)**  
- High Accuracy Distance/Chainage

**Collected data referenced with Chainage:**

All data collected is referenced with distance/chainage whether it is 3d profiles, surface defects, or right of way images.

**Video Imagery:**

High resolution cameras to collect pavement surface condition for visual inspections. Helps to minimise the need for personnel to be on the field.

**Video Logging Modules**

- Right of Way with high resolution cameras

**Geo-reference collected data:**

Collected data is easily referenced with sub-meter GPS coordinates as per client's project needs.

**GPS/GNSS Modules**



# OVERVIEW: SURVEY SERVICES

## THE DCL ADVANTAGE

- » Leading-edge technology for accurate and comprehensive data for road maintenance prioritisation
- » Original manufacturers of the road survey technology
- » Unrivalled expertise to maximise capabilities and optimise system configuration
- » One stop shop solution with all required technical and operational experience
- » Pool of resources with offices in New Zealand and India

Data Collection Limited (DCL) is a New Zealand owned and registered company who perform highly technical highway surveys and manufacture ROMDAS equipment.

We have been manufacturing and providing advanced road survey equipment to clients for the past 30 years. From our origins in the early 1990s, we have a proven track record in the collection of highway and asset information, both in New Zealand and internationally.

DCL's Survey services specialises in providing innovative solutions for measuring and managing pavements. We invest in highly technical survey equipment that is designed to meet New Zealand and international standards.

Catering to the satisfaction of our clients, we provide data and information on assets, surface and sub-surface conditions. Our services can be applied to a wide spectrum of industries including roads, airports, ports and railways.

Our team has collective knowledge and technical skills with varied experience. We are dedicated to collect and report accurate, reliable pavement information which is critical to successfully prioritising budgets and maintaining a high standard of service.

## Our Expertise

We have a dedicated team offering technical expertise for two types of surveys:

### » Pavement Condition Survey

Information on the condition of the pavement surface and assets, visually and automatically

- » Pavement Surface Condition with video imagery
- » High speed survey with automatic pavement surface assessments
- » Automatic crack detection and mapping
- » GIS mapping
- » Roadside inventory and asset management
- » Road construction quality testing

### » Structural Testing

Providing sub-surface structural data

- » Falling Weight Deflectometer Testing to determine pavement strength and identify failures
- » Heavy Weight Deflectometer Testing; for thicker pavements, airports and ports

