PAVEMENT MANAGEMENT SERVICES

CAPABILITIES STATEMENT

New solutions for your pavement assets
At Pavement Management Services (PMS), we are passionate about pavements. From the first day you start work with us you will never look at a road again in the same way! What other people see as commonplace, we see as opportunities and challenges.

We live and breathe pavements; we often find ourselves telling family and friends about a pothole we’ve seen or a poor paving job that’s going to fail in the next couple of years. They might not care – but we do.

Why? Because we know it can be done better, and collectively as a society we need to do better. We know that what we do every day has a positive impact in saving time, money and resources while ensuring a safer and more serviceable road network. We want to do it every day and we want to do more. We pride ourselves on delivering a superior product to our clients and enjoy the satisfaction of a job well done.

So we invest in the best available equipment, we constantly educate and keep ourselves up to date on important developments from around the world. We develop software solutions where there are no off-the-shelf solutions available. We listen to our clients’ needs, and we work to inform the market and our clients on how to do it better.

This document outlines some of our key capabilities. Please focus on the solutions – and not the technology. If you’re involved in road asset management, hard standing, airports, ports, highways and have a problem – we look forward to providing you a solution we can both be proud of.

John Yeaman
Managing Director
Pavement Management Services
Pavement Management Services is a high technology civil engineering consultancy firm specialising in superior quality testing, design, evaluation and management of pavements used in roads, airports and ports. We offer a range of pavement asset management tools and solutions that help clients effectively monitor the condition of their infrastructure. Whether you manage roads and highways, ports, airfields or car parks or are involved in construction, maintenance or design of any of this infrastructure, we have the equipment, people and experience to ensure the most cost effective infrastructure is built and maintained for as long as possible.

**Roads**
We provide an integrated transportation solution to clients who manage the needs of modern infrastructure transport systems, combined with the challenging task of renewing and maintaining networks that were never designed for the volumes and weights they are required to carry now.

**Ports**
We provide specialist pavement testing and design services to meet the need of ports and terminal operators in the design, building, rehabilitation and expansion of heavy duty pavements, hard standing and terminal sites.

**Airports**
Our airport testing services include a range of geophysical and non-destructive investigations of airfield pavements to provide a range of information on their construction and condition to assist in certification and design upgrades.

**Public-Private Partnerships**
We have a strong track record on outsourced maintenance contracts since 1995 both nationally and internationally. We are a ‘one-stop-technical partner’, providing services such as: Asset valuation and preservation planning; Dilapidation studies for road, rail and tunnel projects; Post construction assessment of condition against contract specifications on major highway upgrades.
Pavement Management Services was established in 1981 by Dr John Yeaman (senior), following his development of our PARMMS Road Manager pavement management system to meet the needs of local government authorities in Australia. Since then, the company has grown from a one-man consultancy into a team of dedicated engineers, technicians and support staff, providing complete solutions for pavement and highways management throughout the world.

PMS pioneered advanced pavement deterioration prediction techniques used to optimise road maintenance planning over long-term contracts. We provided such services to the contractor for one of Australia’s first public/private partnership (PPP) schemes, the maintenance of a road network in Sydney for what was initially a 10-year contract (later extended to a 14 year period) commencing in 1995.

In 1983, we were the first company in Australia to use Falling Weight Deflectometers, (FWDs) to assess pavement strength. At that time, it was clear that sophisticated equipment was needed in order to provide adequate technology to a more sophisticated pavement engineering market. PMS acquired Australia’s first FWD from Dynatest Engineering A/S in Denmark. FWD-016 was the 16th FWD built and the first in Australia by ten years.

In conjunction with ARRB, we designed and built the first laser profilometer for Australia.

We have continued to invest in cutting-edge technologies, such as ARAN, our automated crack detection and advanced video acquisition system.

Our success has two key elements:

1. An advanced understanding of the properties of road construction materials and our willingness to explore solutions outside of normal specifications to better meet our clients’ needs

2. Our ability to capture current road asset conditions and analyse likely deterioration effects and impacts on future works needs and budgets.

However, our true achievement has been our ability to develop a generation of pavement engineers who now serve throughout the industry in senior technical and management roles all resulting from their training and development at PMS.
The design, construction and maintenance of roads and civil infrastructure calls for wide-ranging expertise. We provide the data, technology and expertise required to mitigate and manage risks, protecting people, the environment and commercial investments. Our ‘end-to-end’ solutions for pavement and highway management throughout the world are outlined below.

**OUR CAPABILITIES**

Pavement Testing Services
PMS offers a full suite of testing services that can provide all the information you need on the pavements in your road network, airport runway or port working areas. These include:

- Structural capacity: FWD/HWD
- LCMS (Laser Crack Measurement System)
- Laser Profilometry, Ride Quality
- GPS referencing/GIS integration
- Asset inventory
- Road geometry
- Visual condition assessment
- Video imagery
- Ground Penetrating Radar (GPR) testing
- Geotechnical testing
- Skid resistance testing
- Annual testing regime development
- Footpath surveys.

Pavement Consulting Services
We provide a complete pavement management consultancy by professionally qualified and experienced pavement engineers. Our consulting services cover:

- Pavement performance monitoring
- Pavement failure investigation
- Maintenance and rehabilitation strategies
- Performance modelling
- Pavement design and design verification
- Project and network level analysis
- Budget analysis and forward work plans
- Construction quality assurance testing
- Dilapidation studies
- Road/network asset management
- Airports/ports pavements evaluation
- Traffic analysis
- Pavement management systems.
PMS provides an unmatched range of road asset management solutions to their clients. Therefore you can effectively monitor the condition of your infrastructure. This helps you determine the most economical treatments for road failures, estimate long-term maintenance, refurbishment and replacement costs, carry out ‘what-if’ scenarios to determine the lifecycle costs of changing service levels, and administer and control a wide variety of maintenance contractual frameworks.

**Project Level**

- Design of rehabilitation and maintenance options for existing infrastructure to achieve better performance with optimum capital expenditure
- Design and implement dynamic load performance testing and analysis of heavy duty pavement for functionality and remaining life
- Specialist design of high performance pavements including materials selection
- Compliance testing and quality assurance of works
- Contractor dispute resolution and expert witness testimony
- Review the commercial viability of pavement wear forecasts and profiles for toll roads and tunnels.

**Network Level**

- Management of major road networks from performance assessment through to design and implementation
- Prioritise maintenance, rehabilitation and reconstruction
- Pavement deterioration modelling
- Development of budgeted works programs
- Non-destructive field testing and performance assessment against KPIs
- Valuation of road infrastructure assets
- Rehabilitation options assessment
- Road network ‘health checks’.
Specialist pavement engineers know that pavement performance is affected by materials, environment, loading and construction as well as structural design – and it is the variability in these attributes that introduces risk. To manage and quantify these risks, PMS has developed a unique approach to pavement design, embracing fundamental materials analysis, climatic conditions, actual loading regimes and latest developments in pavement design philosophy.

Our approach differs from the traditional deterministic analysis (currently used by Austroads). Instead, we use our own probabilistic analysis approach to develop a holistic solution covering functional (safety and serviceability) design, structural (load-carrying) design and risk assessment.

- We are specialists in pavement design in hot-humid and hot-arid climates
- We save you money and time by reconstructing only what is required, and by making best use of existing structures and materials
- We model and certify non-standard materials to achieve optimal outcomes for each client
- We offer proven deterioration modelling based on over three decades of operations and field verification
- Our predictions match your work programs
- We provide long-term pavement performance monitoring.
CONSULTING SERVICES

Pavement Performance Monitoring
Annual road condition surveys and KPI assessments

Pavement Design & Design Verification
Specialists in hot-humid, dry-arid designs

Project & Network Level Analysis
Improve deterioration modelling from 30 years of experience

Construction Quality Assurance Testing
Construction inspections and compliance assessments

Dilapidation Studies
Inspection of roads prior to construction work commencing on the adjoining sites

Road/network Asset Management
Road asset management solutions that help clients effectively monitor the condition of their infrastructure

Airports & Ports Pavements
Specialist pavement testing and design services of heavy duty pavements

Road Failure Investigation & Expert Witness Testimony
Specialised forensic investigations of failed pavements

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