

# Case Study:

## Kerala Public Works Department

Responsible for managing 33,000 km of road network in Kerala, find out how iROADs allowed Kerala PWD to receive feedback direct from road users.



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 What Comes Next?

**“ iROADS... is very good and users love the simplicity... Road Users are directly capturing the feedback to iROADS which helps the authorities to understand public priorities. TRL Software are a team who we trust and have delivered. ”**

Kerala Public Works Department

# About Kerala Public Works Department

Kerala Public Works Department (PWD) plays a major role in the infrastructure development of the State of Kerala. The PWD maintains 33,593 KM of roads comprising of National Highways, State Highways, Major District Roads and Other District Roads. Maintenance of these assets are very important and requires a scientific needs-based approach, so that the available resources are to be utilised appropriately.

## Key Challenges

01

### Lack of Information

Without a system for keeping and updating inventory and condition of road assets, department didn't have access to accurate records of road assets.

02

### Ineffective Resource Allocation

Without reliable and current data, allocation of funds for maintenance was based on an ad-hoc approach, meaning priority areas were being missed.

03

### Siloed Information

With no system for PWD Engineers and Managers to collect, store and access data across the organisation, knowledge became localised to engineers.

04

### Inefficient Communication

Kerala PWD lacked an efficient process to gather and monitor issues raised by the citizens regarding problems on the road network.

## Project Background

Computerised road asset management systems play an effective and efficient role, supporting road agencies across the developed world and effective management of road assets for optimum maintenance and utilisation of funds.

Kerala PWD however, had an 15 year old GIS based Road Information system and HDM-4 based Road Maintenance Management System (RMMS) that wasn't performing. With limited functionality and outdated technologies Kerala wanted to completely upgrade the system and implement a state-of-the-art software system for road asset management.



# Project Results

Having implemented iROADS on 7,000km of core road network amazing results were achieved. It resulted in a 99% increase in issues reported and a 83% improvement in wait time for the issues to be resolved.

Kerala PWD are now focusing on digitising the rest of the 33,000km making up their entire road network. The focus is continuing the momentum and using iROADS to manage and maintain the road assets in the whole network using an evidenced-based approach.



## Project Benefits

- A Road Asset Management System providing condition and inventory information of all road assets owned by Kerala PWD which can be accessed by junior to senior management staff in the organisation with a user name and password.
- Instant access to management reports.
- Value for money spent on the network since the maintenance budget allocation will be data-led and needs based.
- Customer oriented approach to asset management with the launch of PWD4U Public Mobile App.
- Automated asset inspection and data collection through iROADS App for PWD.

## Connecting with the Public

As part of the project, Kerala PWD launched a mobile app, allowing members of the public to directly report issues. The app has a 4-star rating, and was downloaded by 30,000 people in the first 30 days. Over the first 50 days of the app, more than 11,000 issues were flagged by the public. Because of the connected approach, issues were passed to the relevant agency engineer and solved within 5 days.



## iROADS Benefits

Connect to any data assets via IoT and business systems using iROADS Digital twin hub.

Integrate ontologies into iROADS to break down in inter-department barriers and silos.

Climate resilience module to prepare climate-resilience schemes and disaster management.

Mobile apps for the agency to collect asset data and for citizens to raise issues on the network.

Bring your digital roads to live with graph representation in a live execution environment.

Output to Time Series Insights, storage and analytics using event routes to downstream services.

# What Comes Next?

Everything is changing. The Global Centre for Digital Business Transformation states that the transport domain has experienced the largest jump in vulnerability to digital disruption of any sector. All these benefits are being seen in Digital Asset Management. A suite of toolkits built on over 40 years experience, the best is yet to come for iROADS.



Working with Gaist as a strategic partner, we can provide customers with unrivalled intelligence and analysis of the whole roadscape.

## Vision Zero

Our mission is creating clean and efficient transport that is safe, reliable and convenient for everyone. One way to do this is breaking down silos between asset management and road safety. We want to provide a platform that is not just about maintaining assets, but also making them safer for the road user. Combining road safety insight into digital asset management platforms enables road network managers to consider network schemes to improve road safety.

Our vision is not just about improving the networks, but making them safer, more reliable and more convenient. iROADS is part of that journey.

## As Simple as Pi

No one likes driving on a bumpy road. It's bad for the car, the driver's patience and the environment. A [recent study](#) in America found that extending the life of roads through preventative maintenance, resulting in reduced road roughness, can:

1. Reduce greenhouse gases by 2%
2. Cut transportation agencies spending by 10–30%
3. Save drivers 2–5% in fuel consumption, tire wear, vehicle repair and maintenance costs

"When pavement is in its early failure stage, preventive maintenance can restore performance and extend pavement life with lower costs," said study lead author Hao Wang. Getting in early is important, so measuring road roughness regularly is important. Luckily, measuring road roughness is as simple as Pi. By attaching a small Raspberry Pi box into an engineers car, the vertical deflection is measured when driving, and then fed into iROADS.

# World Class Traffic & Transportation Solutions

Today, TRL supports more than 1,000 clients across 145 countries, driving positive societal and economic benefits.

Our core areas of expertise include: road safety, vehicle safety, crash investigation, human factors & behavioral research, asset management & technologies; intelligent transport systems & traffic operations; sustainability & healthy mobility; major incident investigations.

Our innovative and evidence lead software solutions support the design, management and implementation of safe and reliable transport networks, with products being used worldwide by hundreds of Local Authorities, consultants and engineers.

## UTC, POWERED BY SCOOT® 7

to coordinate signalled junctions in a network

## Junctions 10

PICADY: for assessment of roundabouts

ARCADY: for junction design

OSCADY: for evaluation and optimisation of isolated junctions

## TRANSYT

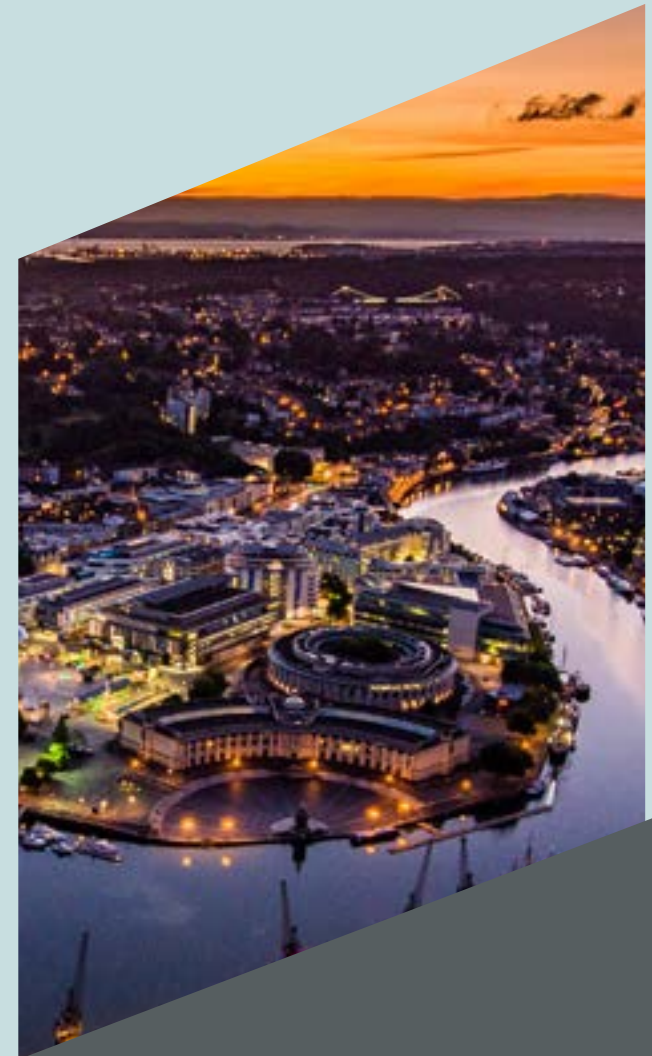
optimises coordinated signal timings

## iMAAP


for detailed crash data recording and analysis

## MOVA

to regulate traffic flow at isolated signalled junctions



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