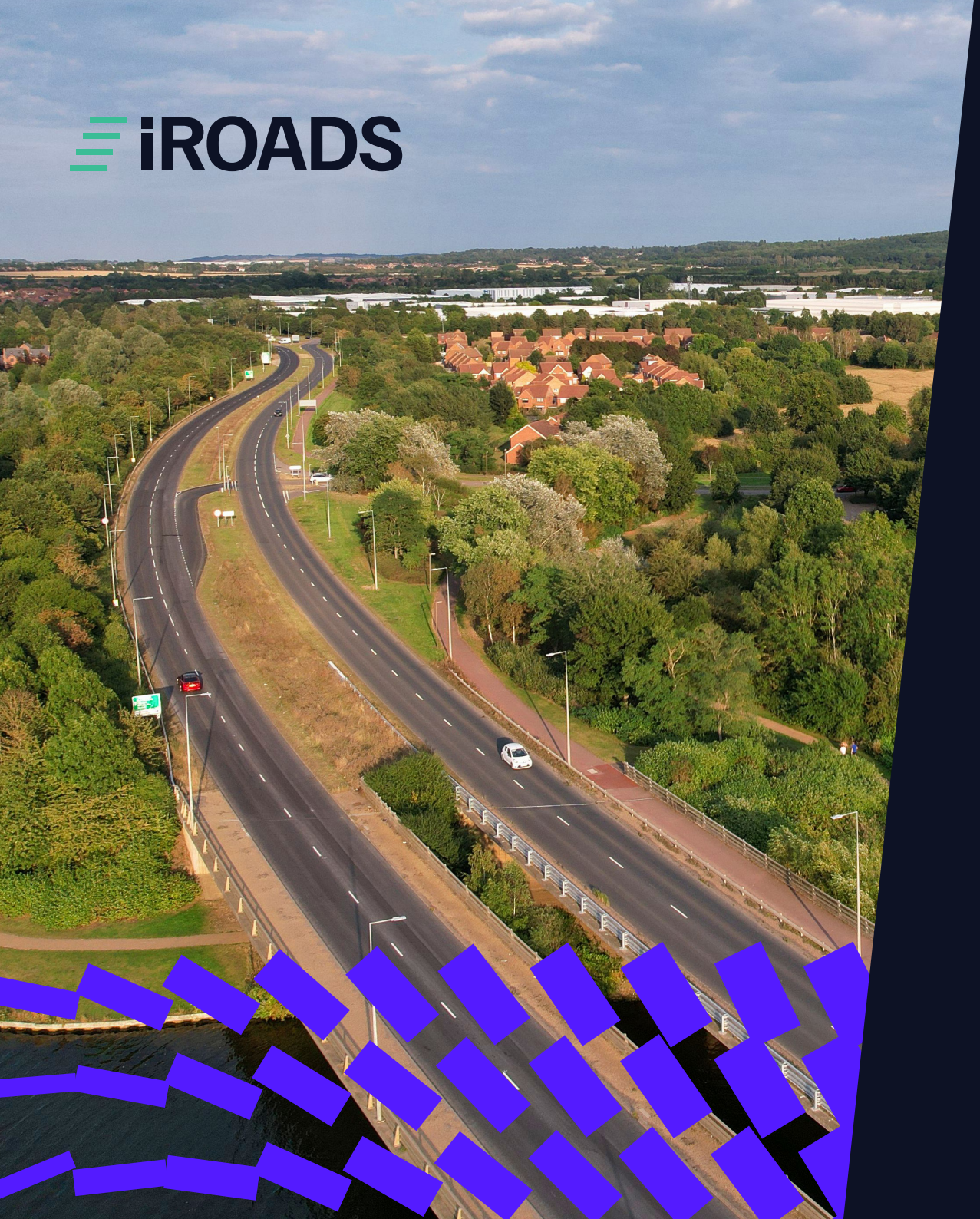


iROADS

Road Asset Management

Unlocking the value of your asset management data.

Maximising value from every investment decision

/ trlsoftware.com

TRL Shaping transport

Expert and innovative software

iROADS is TRL's innovative road asset management platform, providing a comprehensive set of tools for asset management, works management, and investment planning for highways infrastructure assets.

TRL supports Highways Authorities at local, regional, and national scale to become more effective in the management of their highways infrastructure.

Supported by TRL's asset management expertise, iROADS brings together asset condition, asset inventory, construction, planning, and spatial information to help clients achieve best value from their highways asset management data, turning complex datasets into practical insight for engineers and executives alike. Designed for interoperability, iROADS uses open-API technology and extensive connectivity, enabling smooth integration with existing systems (including finance, reporting and contractor systems) and supporting strong customer outcomes with minimal disruption.

The TRL team draws on a wealth of knowledge and experience to ensure iROADS meets user needs – responding quickly to enquiries and providing excellent customer service, in-depth support and consultancy.
Many organisations build long-term partnerships with TRL and continue to evolve their use of iROADS as needs change.



Unlock the value of your asset management data



Local Authorities face an ongoing challenge in managing highways assets, whether maintaining streetlights, roads, pavements, structures, drainage or public rights of way. Keeping track of a vast network of assets can be daunting and resource-intensive, particularly when information is fragmented across teams and systems.

iROADS has the potential to deliver significant benefits in efficiency and service delivery by enabling a comprehensive, effective asset management process. It allows asset owners and operators to realise benefits and savings through better management of road and infrastructure networks and supports the development of robust cases for appropriate levels of investment over the longer term.

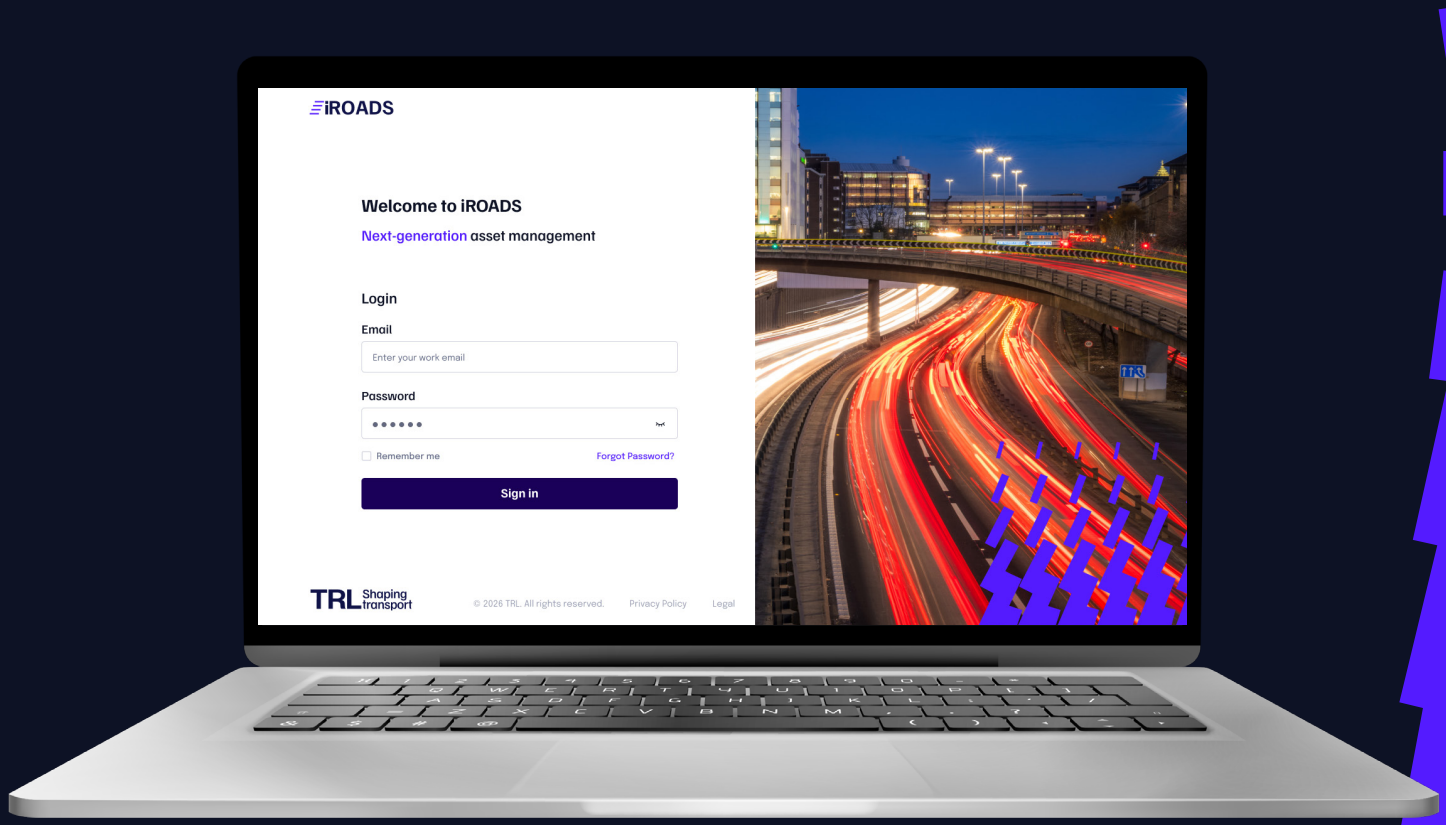
iROADS turns asset management plans from theory into practice. Its flexibility means it can be deployed anywhere in the world and can work with varied data, survey types, and workflows with the ability to integrate with tools such as HDM-4 where required.

The iROADS Investment Optimiser helps compare investment scenarios and prioritise programmes so that strategic decisions are evidence-based, transparent and auditable – linking engineering need to cost-benefit, outcomes and risk. It also strengthens business cases, supports policy development, and helps ensure you maximise value from every investment decision.

Stand-alone, server-based or cloud-based

iROADS uses a flexible deployment model built around modular capabilities that can be combined to meet client requirements. It can be implemented as a standalone single-user system, a server-based multi-user system, or a cloud-hosted service.

The platform is complemented by integrated mobile apps for field data capture and dissemination, supporting the whole asset data lifecycle – from collection to reporting, planning and investment decision-making.



Turn data into investment returns

iROADS planning and decision-making helps deliver investment returns from asset management data by enabling:

- Improved network safety and reduced risk
- Improved return on investment in data and in asset maintenance and replacement
- Evidence-based development of policy
- More transparent, auditable and justified decision-making
- Improved conformance to contractual and statutory requirements and reduced penalties

iROADS delivers clear operational, reporting, and strategic benefits: it streamlines inspections, maintenance, and works through configurable modules and mobile workflows, while reducing friction between office and field teams with synchronised data and offline capability.

It strengthens reporting and data confidence with a centralised asset register, validation, audit trails and controlled data pipelines (staging/QA/approval and automation options), and supports stronger planning and investment decisions through whole-life cost outputs, resilience-informed prioritisation, and faster, more reliable HDM-4 dataset preparation and visualisation.





A system for real road management tasks

iROADS supports both the day-to-day and strategic tasks involved in managing and developing a highway network and associated infrastructure assets, including:

- Monitoring and achieving network performance targets (service levels, KPIs)
- Assessing the impact of alternative funding and maintenance regimes on future condition and performance
- Developing programmes for asset maintenance and/or renewal
- Developing asset investment business cases
- Managing and maintaining asset inventory and condition data
- Managing field work such as inspections and reactive maintenance
- Producing reports on asset information, works performance, costs…

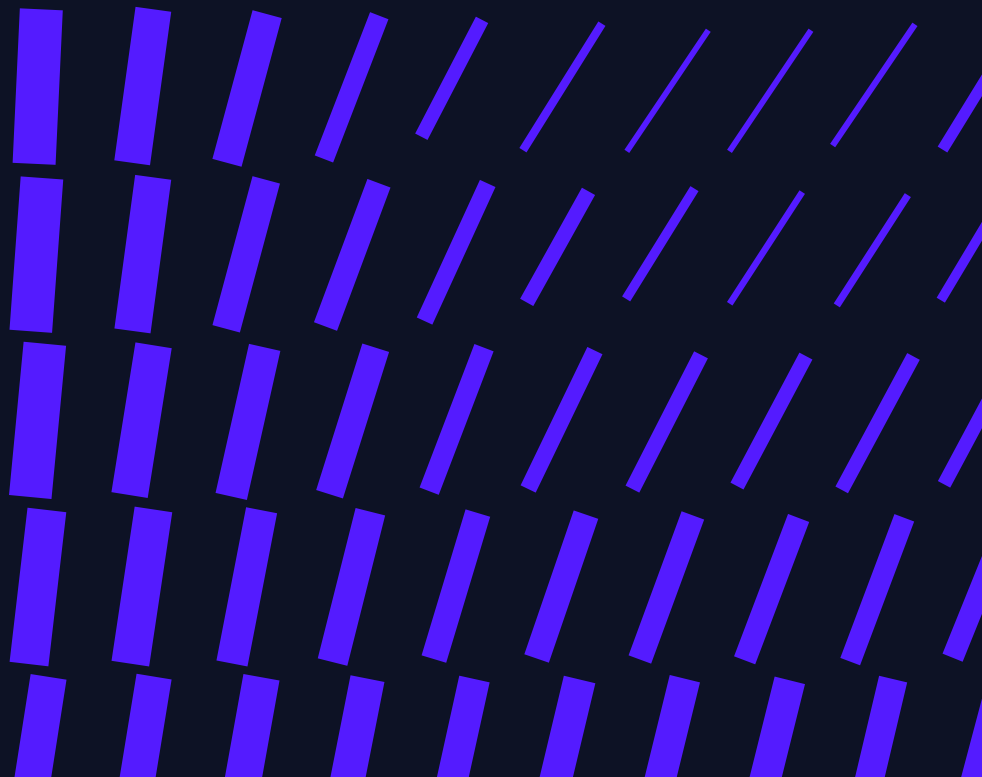
Multiple modules, one connected platform

iROADS is organised into modules which can be used independently or together in many combinations, allowing true enterprise flexibility to fit into customer organisation use cases and existing systems. It's easy to expand to new modules when ready, thanks to the underlying platform which connects all data in iROADS and provides it where needed.

Data quality and configuration

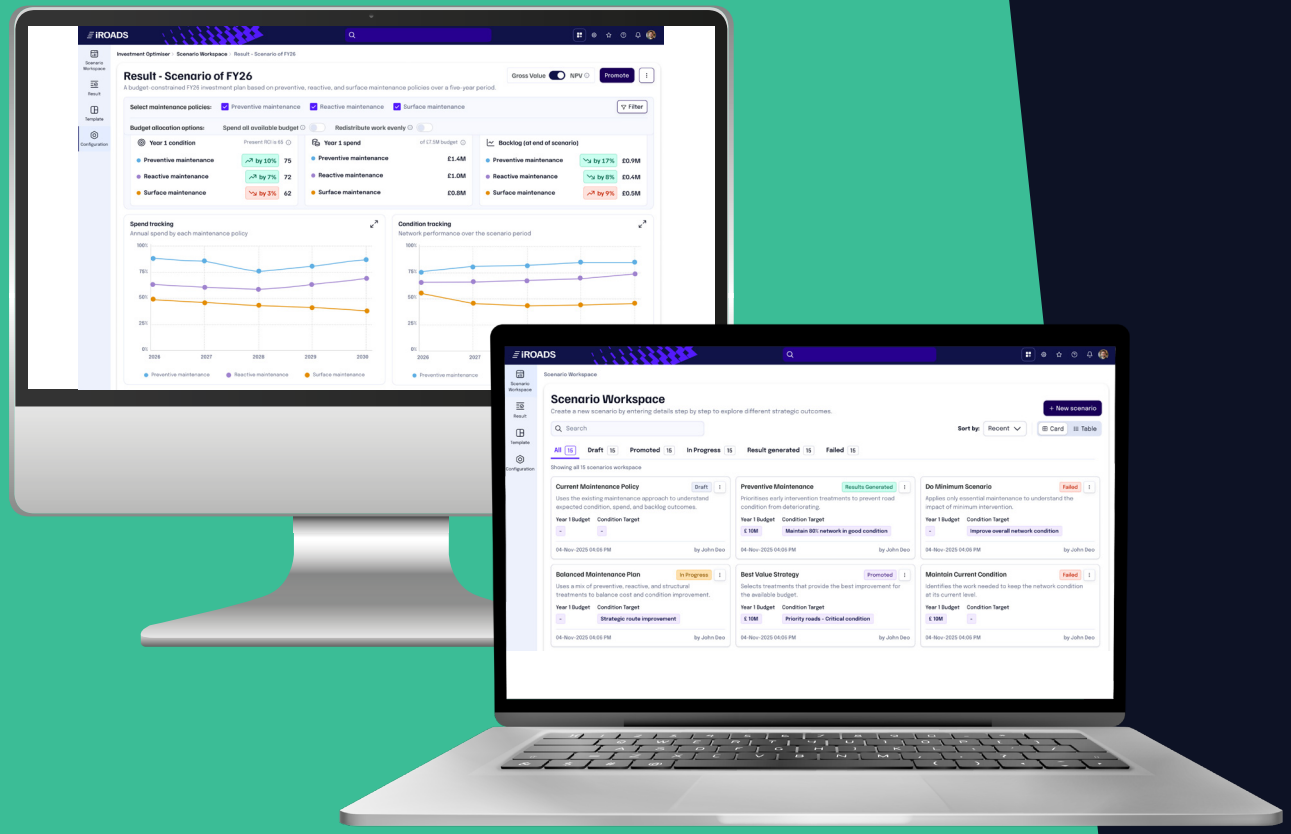
iROADS incorporates extensive quality assurance and options for the data it holds, including: section length fitting, length tolerance checks, and survey reversal at load time. These checks are fully configurable, supporting a wide range of data formats (including custom surveys and data types). This flexibility enables organisations to maximise the use of available data and unlock the value within it.

iROADS also supports self-service analytics and controlled data pipelines to help teams load, validate, approve and transform data quickly and consistently.



Core modules and capabilities

Investment Optimiser images of platform below:



Investment Optimiser

The iROADS Investment Optimiser help infrastructure owners make transparent, evidence-based investment decisions across their networks.

Using asset-specific lifecycle modelling rather than generic financial models,
it evaluates condition, risk, performance, and cost to identify optimal intervention strategies.

Investment optimiser supports whole-life, scenario-based planning, allowing users to balance service levels, budget constraints, and long-term outcomes. With clear auditable and explainable analytics,
it strengthens the defensibility of investment decisions and supports funding justification. By using a single, trusted data source, it ensures consistency between operational data and strategic planning, reducing complexity and improving confidence in outcomes.

Mapping & Spatial Data

Bring assets and location-based information together in a map-centric view, so you can source, import, visualise and analyse spatial data alongside your road network.

It maps overlays such as assets, defects, survey results, poor-condition areas and accidental hotspots. It includes built-in basemaps (Bing roads/satellite, light/dark) and supports integration with services like Esri. With linear and geospatial referencing (including automatic conversion), it also enables spatial tools to build queries, update asset data efficiently and create routes or asset groups for surveys, analysis and reporting.



Asset Data Marketplace

Asset Data Marketplace helps road authorities quickly access and use curated third-party datasets such as flood and micro flooding locations, driving events (harsh breaking), road condition data, video survey imagery and more - without the usual pain of incompatible formats or uncertain quality.

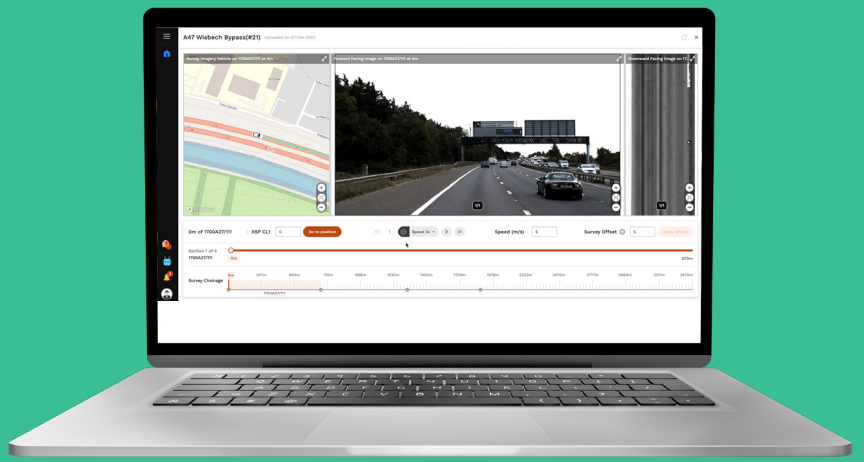
TRL vets data providers for relevance, compatibility, reliability, cost and quality and iROADS makes it easy to combine these novel datasets with your existing asset data to reveal risks, hotspots and priorities with greater confidence.

Video & Imagery Surveys

Import and playback survey videos and imagery while automatically mapping each frame to its exact geospatial location and road network position (including chainage).

Users can review footage as video or frame-by-frame, use multi-camera feeds with synced side-by-side playback and view imagery alongside condition data overlays for faster validation and investigation.

The module also supports imagery annotation and iROADS Mobile can capture location-enabled video surveys from a smart device for easy integration back into iROADS.

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iROADS
Mobile
The iROADS mobile app is the field companion to the web platform, with full syncing of assets, inspections, survey results, works orders and documents so teams stay aligned.
It also works offline storing updates securely on the device and auto-syncing when connectivity returns, so inspections and work recording continue in all conditions.
Asset
Register
The Asset Register sits at the heart of the iROADS suite as the central map-based record of what assets you have and where they are. It's fully configurable (asset classifications, types and attributes), supports asset components for complex assets like structures, and includes built-in validation (formats, mandatory fields, duplicate checks) to protect data quality.
iROADS also lets you attach images, documents and drawings (with an integrated viewer that supports 3D CAD/BIM models) and maintains a full audit trail of changes for traceability and governance.

HDM-4 Integration

The HDM-4 integration streamlines the preparation of analysis by letting you query, reorganise and automatically homogenise network data in iROADS, cutting prep time from weeks to hours and reducing HDM-4 import errors.

It exports HDM-4-compatible .mdb inputs (inventory/condition, geometry, traffic) and can import HDM-4 outputs back into iROADS for map-based visualisation and reporting (beta).



Whole Life Cost Analysis

Model long-term outcomes to help you choose the best maintenance scheme for locations on your network. Whole Life Cost Analysis compares options using whole life cost and a financial value indicator (balancing upfront spend vs long-term cost). It then presents the results in clear charts, maps and reports to support confident decisions and business case justification.

These outputs can also feed into the iROADS Investment Optimiser, helping you roll scheme-level evidence up into transparent, scenario-based investment planning across the wider network.

Operational Asset Management

IROADS delivers comprehensive operational asset management, helping authorities manage inspections, defects and maintenance across all asset types through end-to-end workflows. From capturing issues and defects via inspections, surveys or third parties, through to scheduling, completing and closing out works.

The mobile app supports field teams online and offline to record inspections, works and evidence in real time, while dashboards, reporting and automated alerts provide clear visibility of network condition, performance and compliance – enabling faster, risk-based decisions and improved operational efficiency,



Data Workbench

The iROADS Data Workbench makes it easy to import, validate, review and approve data so only trusted information enters iROADS. It supports a wide range of datasets such as asset, spatial, survey imagery, traffic and more.

With a built-in staging area, automated checks and smart update tools for complex updates (for example, calculating resultant pavement construction after construction data changes), helping reduce effort for your teams.



Resilience Planning

Assess climate risks and vulnerabilities and plan interventions to make infrastructure more resilient.

It combines traditional asset inventory and inspection data with hazard mapping (for example, floods, landslides, fire hazards), climate projections and environmental data to identify high-risk assets and prioritise mitigation.

It can also integrate sensor, weather and satellite data to generate early warnings for pre-event response, then highlight affected assets for inspection and damage reporting... linking impacts, remedial actions and costs back to each event to improve future planning and prioritisation.

Customer Services

Manage and resolve issues raised by road users and improve satisfaction while capturing richer intelligence about the network.

It brings together reports from multiple channels (phone, webforms, apps and more), supports assignment and end-to-end tracking through to close-out, and keeps stakeholders updated throughout.

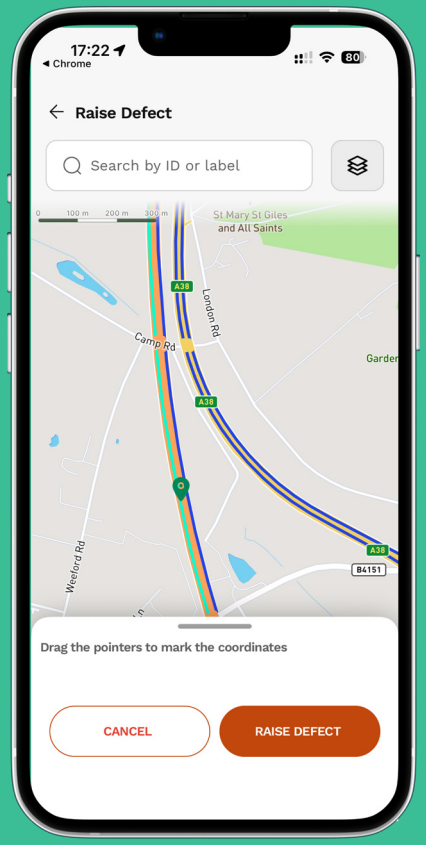
Optional features include a public mobile app for citizen reporting (including photos) and a Citizen's Web Portal to publish selected information such as planned roadworks.

Built-in dashboards track key metrics like trends, resolution rates and satisfaction, and automated workflows (e.g., notifying teams when issues are raised in their area) help reduce time and cost.

iROADS mobile APP

The iROADS on-site software can be used as a stand-alone product for site operatives (alongside other systems) or fully integrated with the main iROADS platform. It supports key survey and operational workflows, including:

- Routine maintenance
- UKPMS visual surveys
- HAPMS visual surveys
- Detailed inspections
- Asset inspections
- Risk surveys
- Value management surveys
- Inventory surveys



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 & behavioural 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.

iROADS		for road asset management
JUNCTIONS	ARCADY	to coordinate signalled junctions in a network
	PICADY	
	OSCADY	for evaluating and optimising signalled junctions
TRANSYT		or evaluating all types of junctions and networks and optimising signalled junctions, including actuated signals
iMAAP		for detailed crash data recording and analysis
MOVA		to regulate traffic flow at isolated signalled junctions
UTC Powered by SCOOT®8AI		to predict and coordinate signalled junctions in a network

Why TRL?

We develop powerful software that is based on solid proven research, trusted by hundreds of local authorities, consultants and engineers around the world.

Our industry experts have extensive experience partnering and collaborating with professionals across the globe, having successfully implemented systems in over 20 countries.

Scan the QR code for more information on iRoads™

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