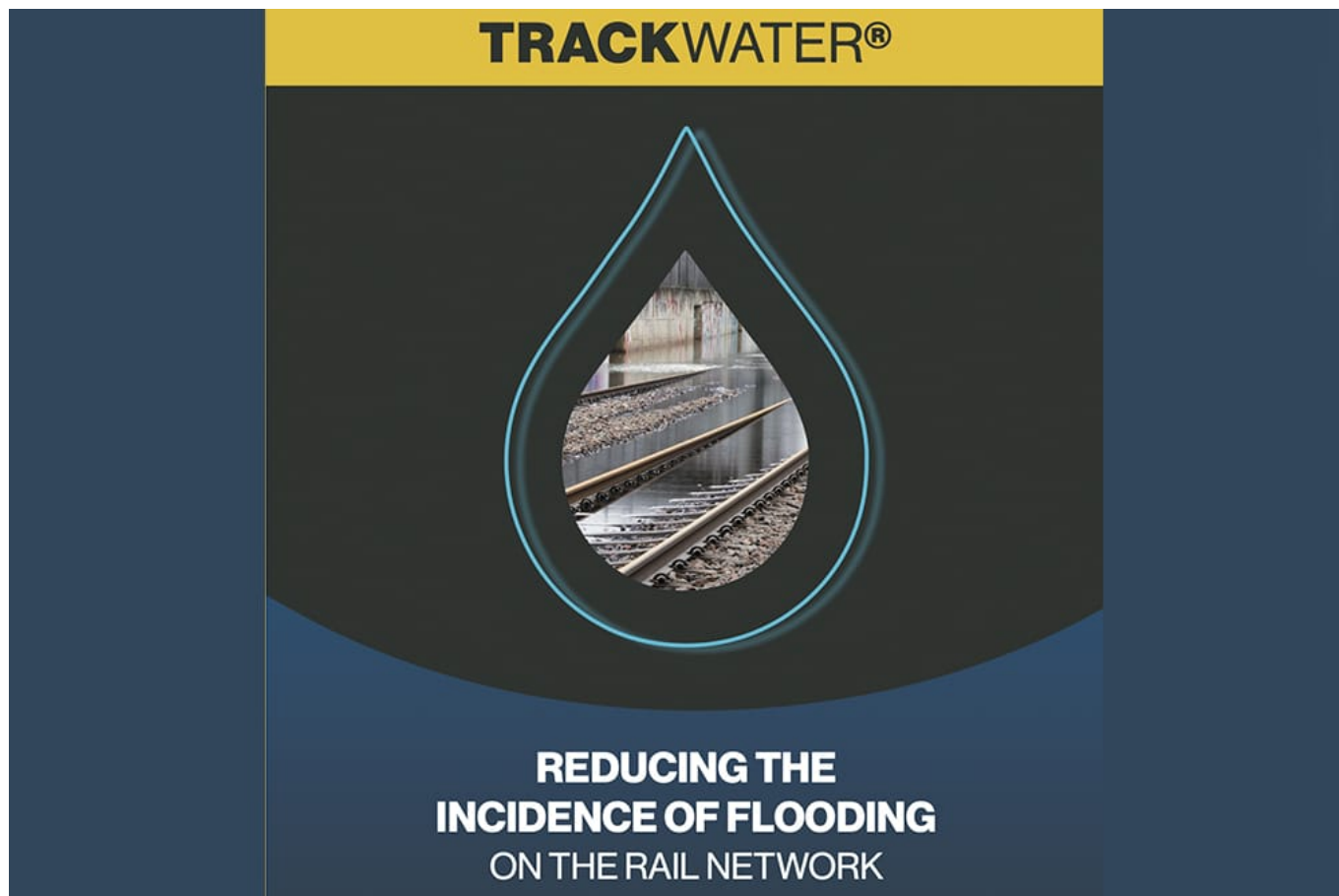# Data-driven flood detection – TrackWater

May 4, 2023

For years, the railway industry has been struggling with the challenge of managing flood water on track. Flooding not only damages railway infrastructure but also causes delays, cancellations, and significant inconvenience to passengers. However, a new product called TrackWater has emerged to help solve this problem.

TrackWater, from RailSense Solutions Ltd, is a sensor and data-driven solution that helps manage surface water within rail. The product utilises technologies that have been successful in highway management and applies them to the railway industry, bringing a comprehensive approach to surface water management. TrackWater is Network Rail approved.

The idea behind TrackWater is to use IoT sensors and data modelling to better monitor, manage and predict the maintenance of railway drainage assets. By proactively managing drainage assets, maintenance costs, flood events and delay minutes can be reduced. This approach improves safety for passengers and operatives, while also reducing the impact of flooding on the railway network.

With its focus on predicting drainage maintenance needs, TrackWater provides real-time alerts and predictive maintenance recommendations, allowing railway operators to take proactive measures to reduce the impact of flooding on their network. The product is designed to be user-friendly, with an

intuitive interface that makes it easy to monitor the status of drainage assets and predict maintenance needs.

Utilising technologies pioneered on the highways, TrackWater was developed through a consortium including Network Rail, Lancaster University and Connected Places Catapult. It was co-funded by the Department of Transport and Innovate UK. The TrackWater technology has now been adapted to meet the need to manage surface water within rail and reduce the impact of flooding on the network.

"The railway industry has been struggling with the challenge of managing flood water for years," said RailSense managing director, Andy Chick. "We saw an opportunity to apply the technologies that have been successful in highway management to the railway industry and create a product that could help solve this problem. TrackWater is the result of that effort, and we believe it has the potential to revolutionise the way the railway industry manages flood water."

Railway operators have welcomed the launch of TrackWater, as it promises to reduce the impact of flooding on their networks and improve safety for passengers and operatives.

Olivia Devan, Network Rail, Engineer (Drainage), said: "The TrackWater solution will enable Network Rail to move from a reactive drainage maintenance approach to a proactive one. This will allow for better drainage asset management, resulting in fewer flooding incidents and a reduction in the associated costs."

The product promises to revolutionise the way the railway industry manages flood water, and it has the potential to improve safety for passengers and operatives, reduce maintenance costs, and minimise the impact of flooding on the railway network. The system is easy to deploy and the data it collects can also be fed into existing systems if required.

The success of TrackWater could have far-reaching implications for the railway industry, as it demonstrates the potential for data-driven solutions to address long-standing challenges. As the industry looks to the future, it is clear that data and technology are playing an increasingly important role in improving rail safety and efficiency.

TrackWater is a significant development for the railway industry, and it highlights the potential of data-driven solutions to transform the way the industry operates. While there are challenges ahead, there is no doubt that TrackWater represents a step forward in managing surface water within rail and improving safety for passengers and operatives.

RailSense is leading the way in developing innovative solutions for the railway industry, and TrackWater is just one example of its commitment to improving rail safety and efficiency. As the railway industry faces ongoing challenges, it is critical that companies like RailSense continue to innovate and develop new products that address these challenges. With the continued support of railway operators and industry experts, RailSense and TrackWater have the potential to make a real difference in the railway industry.