The action plan sets out the first steps to change

The water industry is facing a difficult challenge. **Customers** demand ever lower leakage - but at the same time they don't want the **inconvenience** of more traffic disruptions.

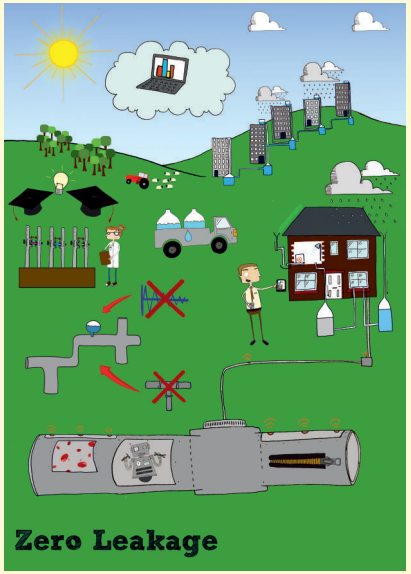
In 2005 UKWIR estimated the **social cost** of excavations to be at least £5.5 billion per year and yet we are still **losing** almost a quarter of all of our water through leaks.

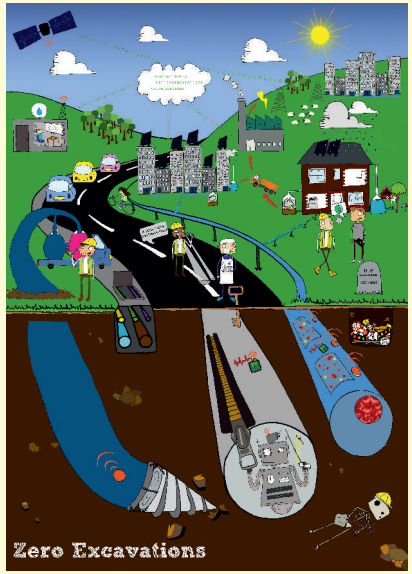
If the industry is to achieve these potentially conflicting goals it will need to seek more **innovative solution**s with a real focus on cost **effectiveness**.

To view the full action plan document please visit **www.wrcplc.co.uk**

Zero Excavations Zero Leakage

Industry Action Plan Summary





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Involve innovators from outside the sector to bring in new ideas
Strengthen the link between suppliers and water companies for new plastic pipe joint techniques
Review current plastic pipe jointing approaches, assessing the financial impact of poor joints
Share pain and gain, training and acceptance with contractors and supply chain; define a route to approve products
Share best practice, trial results and experience to establish suitability of existing keyhole technologies
Share experience, testing and evaluation between companies and allow contractor to share the risk
Establish specific water company requirements for robotic technologies
Establish suitability and costs of existing robotic technology
Compare the performance and benefits of the listening stick and ground microphone
Specify new access points to enable fitting of leak detection techniques and identify benefits/drawbacks
Investigate potential cost reduction through large volume manufacture of acoustic leak detection technology
Increase use of acoustics, magnetics and ultrasound
Define the ageing process of a pipeline and build predictive model relating leak growth to ground loading conditions
Recognise precisely where leaks occur on a pipeline through improved data capture
Develop low cost self-powered fit and forget sensors
Develop easy installation techniques
Reliable communications from below ground
Understand how data from disparate autonomous sensors can be synchronised
Develop and agree protocols to facilitate inter-operability
Develop and invest in modelling capability including data from social networking. Understand at what resolution data becomes noise
Nationally co-ordinated smart meter trials to gather evidence
Work with suppliers to demonstrate need and market for sensors, and define specification
Identify and quantify benefits of supply pipe management strategies
Use outcomes to engage with regulators and legislators to ensure a smoother adoption process
Develop a timetable for supply pipe adoption
Identify total cost to water industry and develop business case for adoption for each supply pipe configuration
Consider direct cost to customer for each supply pipe configuration
Develop technical standards for interoperability and develop products using these
Identify if failures in new networks are linked to a specific factor
Identify if problems in new networks are leakage or legitimate unmeasured consumption?
Identify where in the network plastic leaks occur and in what time-frame
Develop clear business case for asset data and agree the data to be captured
Develop code of practice on asset recording and implement contractual arrangements
Conduct cost benefit assessment and develop business case for asset tagging
Install plastic pipes with joints that do not represent a leakage and failure risk
Use keyhole techniques for repair, and internal robotic technology for inspection of live pipes
Improve methods of acoustic leak detection
Maximise benefit from proven and cost effective techniques for structurally assessing pipes
Reduce the need to excavate to install and repair pipes through robotic inspection keyhole techniques and advanced materials
Employ the latest condition assessment techniques to better target renewal and replacement
Identify small leaks in small pipes so that these can be managed
Ensure new laid networks last as long as pipe material remains viable
Technology
Investment
Regulation
Zero Leakage
Zero Excavations
Customers
Data
Operations
Use better sensors and smart meters to manage networks proactively
Focus on asset location to reduce unnecessary excavations and accidental damage
Improve accuracy of existing asset records and agree standards for active location
Adopt supply pipes to form integral part of leakage management strategy
Resolve problems before customers are aware of them
Minimise risk for both customers and water companies