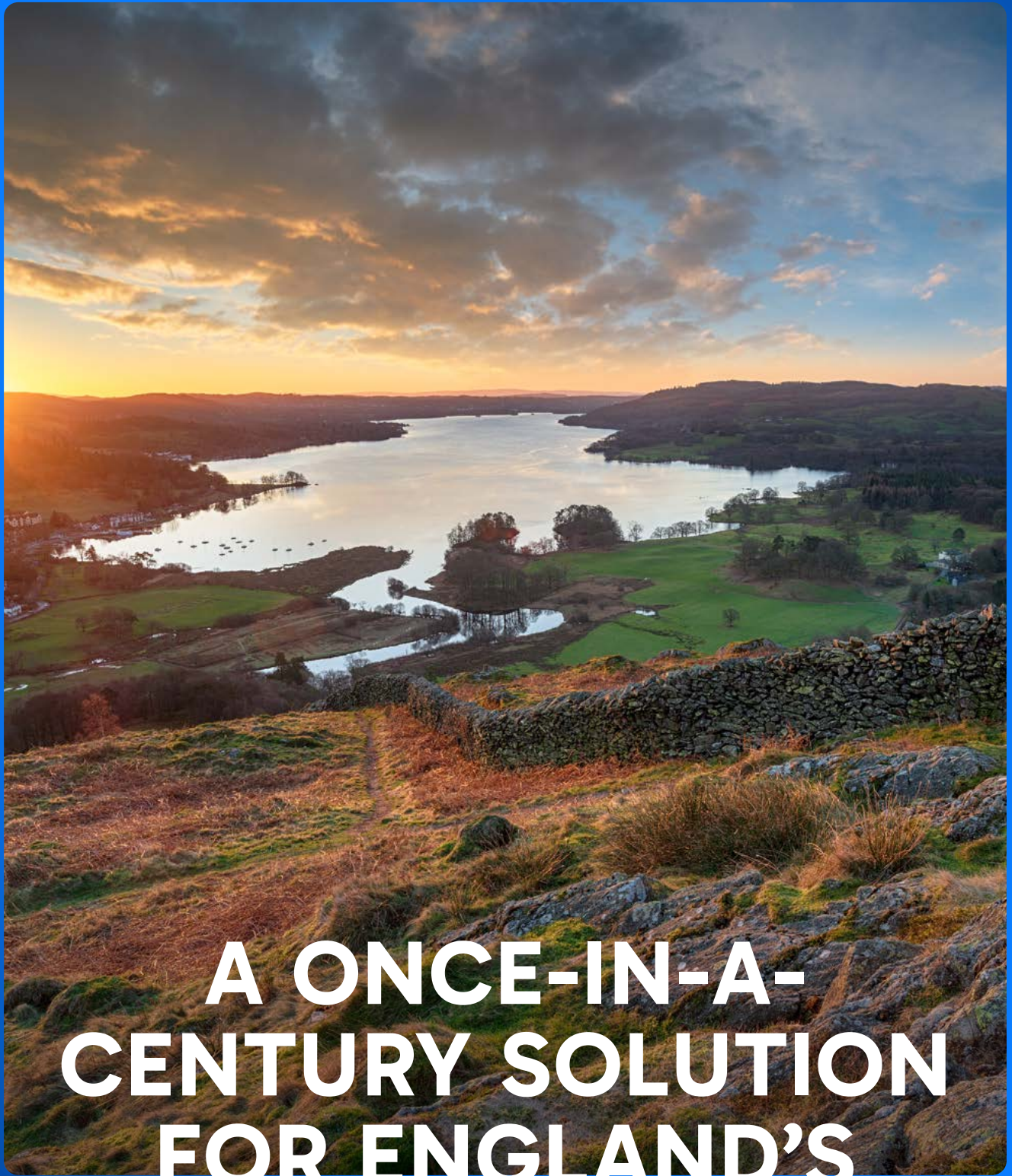


SECTION 1 | FOREWORD



A ONCE-IN-A-CENTURY SOLUTION FOR ENGLAND'S GREATEST LAKE

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Edward Twiddy

Independent Convener for ORiW

Windermere is England's largest natural body of fresh water. It is home to cherished and protected species and ecosystems fed by lakes and streams that flow from some of the highest peaks, through woodland and pastures tended by centuries of human stewardship.

This astonishing lake is at the heart of a UNESCO World Heritage Site, the inspiration for poets, storytellers and lyricists, and a daily pleasure for a resident community that is swelled by the 17.7 million visitors who visit the Lake District every year to sail, swim, fish, paddle, walk or simply gaze in wonder.

But this essential and widely-loved place is changing as the climate warms and rainfall events become more intense. In addition to these new pressures, the lake's chemistry has shifted over the last century. Nutrient inputs remain a pressure against a backdrop of increasing population and visitor numbers, compounded further by climate change. Water entering the lake can take upwards of nine months to make its way into the River Leven for the short dash to Morecambe Bay; whatever comes into the lake either stays there or has plenty of time to affect the chemistry and biology of this UNESCO World Heritage Site.

Significant and vital investment is already being made to protect against the combined effect of a warming lake and nutrient loads. This is critical to help meet the challenges that are present in the lake today. However, the latest research into Windermere's

future demonstrates that only a new and transformational approach – stopping all wastewater from private, public and highways systems from entering Windermere – will eliminate harmful blue-green algae, remove the risk of storms overwhelming wastewater networks and secure the lake's future for the rest of this century and into the next.

**A commitment
to the world that
Windermere will
remain a perfect
place for everyone
forever.**

A future vision of Windermere free from these threats, and a lake that is fed only by the rivers, streams and springs that flow off the land, is the goal of the Only Rainwater into Windermere (ORiW) project. As a lifelong lover of the Lake District, it has been a true honour to serve as convener of the Steering Group which

has been exploring transformational solutions for Windermere over the past year.

The coalition has brought together local authorities, regulators, business leaders, stakeholder groups, campaigners and the region's water company to examine engineering options to secure the economic and ecological future of this internationally renowned natural asset.

Supported by independent leading engineers and construction experts who have considered the lake in detail and harvested best practice from transformational projects in the UK and around the world, the Only Rainwater project team has considered dozens of alternative approaches to realising this ambitious vision. Together, we have narrowed these down over the course of a year of systematic analysis and shared choices. We believe that our study has demonstrated that a future for Windermere with no more harmful algal blooms and no more direct flows of wastewater into the lake is not only feasible, but also great value for money, creating around £1.90 of benefit for every £1 invested, even after adding significant buffers for contingencies.

As expected for a feasibility study of this scale and complexity, and which started with over 70 different options, final conclusions cannot be reached on all aspects, and detailed design and modelling will be needed to answer the remaining questions. However, after extended consideration and following detailed review, this study does provide benefits and costs for two lead options selected for further assessment that return high-quality treated wastewater to the environment. One option is at the River Leven; the second is at Ulverston. Business cases for these options are in line with the expectations set out in the government's Green Book methodology for project appraisal.

Common to both options is a new, fully integrated wastewater network, increasing infrastructure by up to 75% and connecting around 12,800 people with public sewerage services for the first time. This will reach up to Grasmere, the Langdales and along both sides of the lake itself and is linked to a deep tunnel that starts near Ambleside and stretches the length of the lake.

The preferred final option chosen as part of detailed design, the extent of the tunnel, and the exact location for

an extended and enhanced wastewater treatment works, are the choices that will need to be finalised through the next stage of this project.

By setting out more than one option, and requiring further analysis and engagement, we are not shirking responsibility for the choices we have made to date or those which need to follow. We are certain of the need to extend and integrate the sewer network around the north, west and east sides of the lake catchment, and that a tunnel is the most effective and least disruptive means to remove wastewater from entering the lake. We are also clear that any transfer of wastewater or intercepted rainwater from one community to another must be examined for potential detrimental effects on either community, or any community along the route of the new network. Wherever possible, any detrimental effects must be avoided. However, the team feels a deep responsibility for not over-specifying the final answers given the volume of water quantity and quality analysis, ground investigations and community and stakeholder engagement that is needed before conclusions on this element of the project can be properly reached. We are equally determined that the project goes ahead as speedily

and with the level of ambition that we know is needed to deliver lasting change, and so the next steps for the project are clearly set out in the study's concluding section for detailed decision and the desire to get approved.

It is time to move on from the incremental approach to investment in this most iconic critical natural asset. Windermere still delights and excites, and an investment to protect the lake for the century to come is an investment not only in the economy of South Cumbria and the Lake District but a commitment to the world that Windermere will remain a perfect place for everyone forever.

I want to issue my wholehearted thanks to the Steering Group members and deputies, the teams at Jacobs and Mott MacDonald, and all those who have engaged in assuring and reviewing this document for their contributions and challenge over the last year. The project is better for each and every one who has been involved, and hopefully many of them and many more will now take this piece of critical natural infrastructure forwards through design and into delivery over the next very few years.

A future vision for Windermere that is fed only by the rivers, streams and springs that flow off the land is the goal of the Only Rainwater into Windermere project.