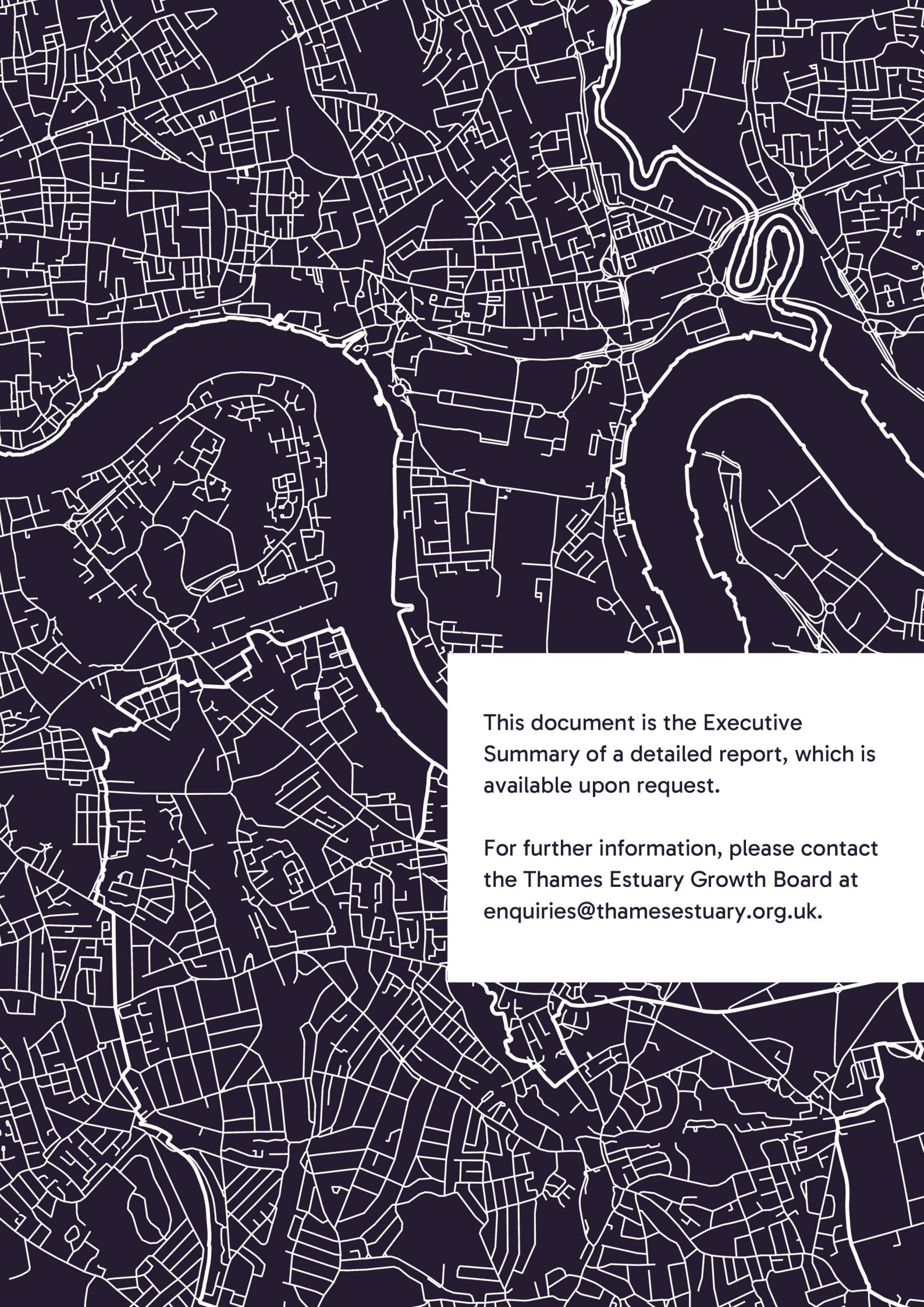


Thames River Freight

The case for RULE, a sustainable
urban logistics solution on the River
Thames

Summary Report
November 2024
WSP

www.thamesestuary.org.uk



This document is the Executive Summary of a detailed report, which is available upon request.

For further information, please contact the Thames Estuary Growth Board at enquiries@thamesestuary.org.uk.

Introduction

A new solution for London's logistics is taking shape on the River Thames: the Riverside Urban Logistics Environment (RULE) solution is a cleaner, faster, and more sustainable way to deliver goods across the city. By shifting light freight off congested roads and onto river vessels paired with e-cargo bikes, this approach tackles traffic, cuts emissions, and reimagines London's delivery network to support a greener future.

London's delivery demands are growing rapidly, with the rise of e-commerce, increased construction needs, and a push for sustainable solutions putting unprecedented pressure on the city's road network.

To address this, the Thames Estuary Growth Board has envisioned a bold new use for the River Thames: transforming it into a primary logistics route for light freight.

By shifting deliveries from congested roads to river vessels and e-cargo bikes, this approach aims to reduce emissions, ease road congestion, and create a more efficient delivery system for London.

The focus is on moving light freight—particularly parcels and perishables—along the river to designated micro-consolidation hubs, where e-cargo bikes complete the “last mile” to customers. This logistics model not only brings environmental benefits but also offers a resilient alternative to traditional road-based logistics, helping London meet its sustainability goals while keeping pace with rising delivery expectations.

Key aspects of this model include:

Significant Market Potential: The Thames represents an untapped opportunity for handling light freight and offers a significant chance to reduce road congestion in central London. By positioning the river as a main logistics channel, this approach meets growing demands for quick, eco-friendly deliveries.

Efficient Operational Model: A river-based logistics solution is proposed, with micro-consolidation centres on floating platforms or piers. Goods are transported by river and then seamlessly transferred to e-cargo bikes for last-mile delivery, providing a low-emission, high-efficiency alternative to road-based delivery vans.

Flexible Commercial Opportunities: With the right investment, micro-consolidation hubs and riverside distribution centers can be developed to support multiple logistics providers. This flexible approach allows providers to “pick and mix” distribution models that suit their operational needs, creating a viable ecosystem for river freight.

Compelling Investment Opportunities: Key infrastructure, including loading and unloading facilities, river vessels, and e-cargo bikes, will require investment. The Growth Board's cost model identifies potential returns and cost efficiencies that make this a compelling opportunity.

Meaningful Environmental Impact: Shifting even a portion of London's freight to the river can significantly reduce traffic congestion, cut air pollution, and support the city's net-zero carbon targets. The river-and-e-cargo-bike model minimizes emissions and enables faster, more flexible deliveries in dense urban areas.

The Thames Estuary Growth Board invites investors and logistics providers to help reshape London's delivery network by building a sustainable, efficient supply chain on the River Thames. This work positions the Thames not just as a scenic landmark but as a central, resilient logistics route that prepares London to meet future delivery needs with fewer emissions and reduced road traffic.



Image courtesy of Aukett Swanke

Significant Market Potential: E-Cargo Bikes and River Freight

The analysis shows a significant opportunity to use the River Thames and e-cargo bikes to transform London's freight delivery network, with major benefits across key areas:

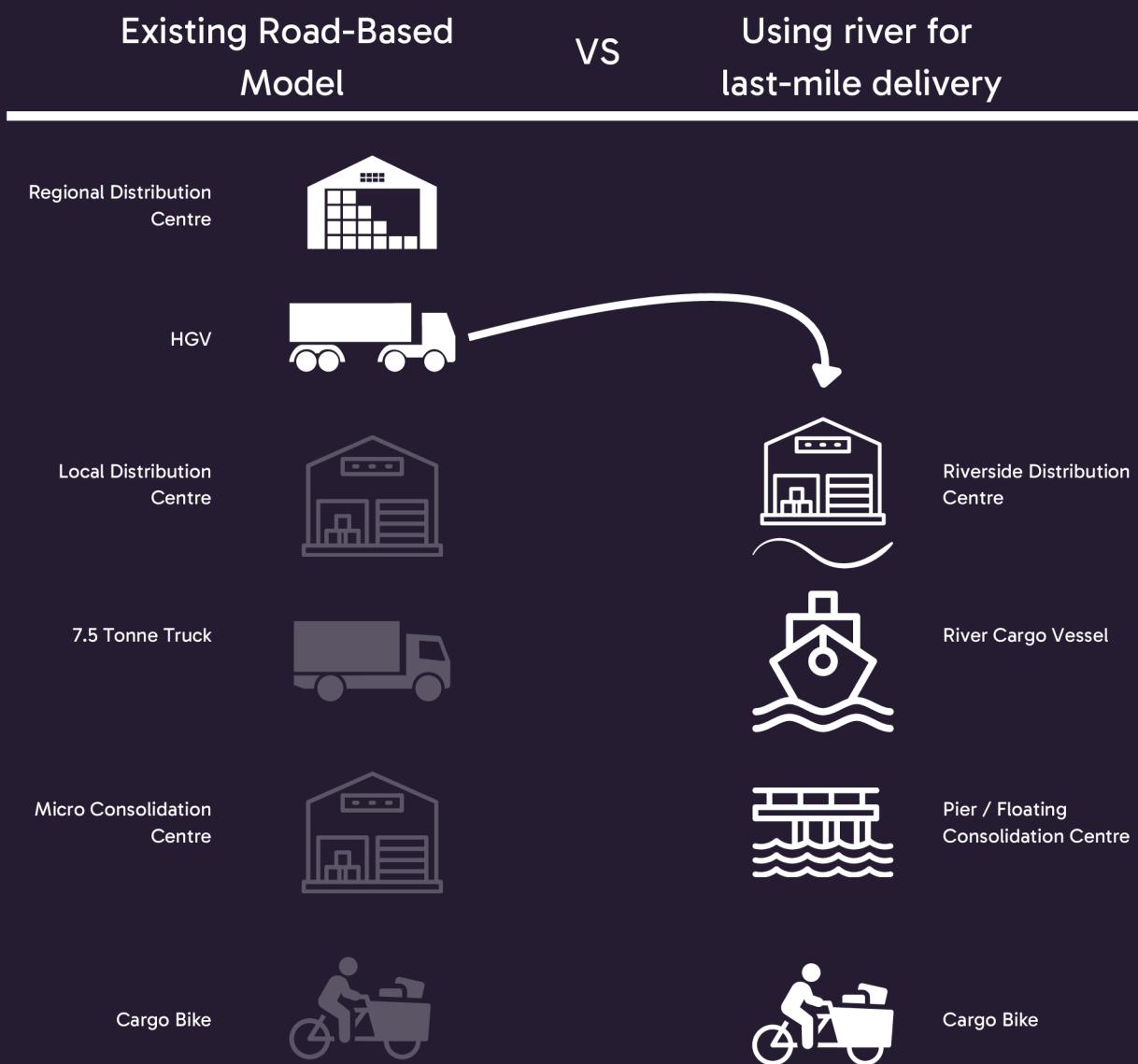
- | **High Demand for E-commerce:** London is a major market for e-commerce, with over 700 million parcels delivered annually, creating a significant opportunity for innovative logistics solutions.
- | **Reducing Road Congestion:** Currently, most parcels are delivered by van, which adds to congestion and produces negative impacts, including air pollution, noise, and carbon emissions. Shifting to river-based logistics and e-cargo bikes can help alleviate these issues.
- | **Potential for E-cargo bike Model Expansion:** While e-cargo bikes offer a sustainable alternative, their growth is limited by space constraints for storage and consolidation. Each "pod" of 7 e-cargo bikes requires around 200 square meters and access for drop-off.
- | **Scalability with Additional Space:** Expanding space for e-cargo bike pods can enable significant market growth; each pod has the capacity to handle over 300,000 deliveries annually.
- | **Unique Role of the River Thames:** The Thames is uniquely positioned to provide space that supports the cost-effectiveness of e-cargo bike delivery, offering a competitive alternative to traditional road-based logistics.
- | **Supporting a Low-Carbon Transition:** By investing in river freight and e-cargo bikes, this model enables substantial carbon savings, supporting London's Net Zero goals and benefiting local businesses.
- | **Job Creation and Economic Impact:** This approach also creates new jobs and economic opportunities at key river locations, especially in East London, strengthening local economies and enhancing employment prospects. A 20 million parcel operation could create over 800 jobs and generate £50m+ additional GVA annually.



Image courtesy of Delivery Mates

Efficient Operational Model: Road Vs River for Last-Mile Delivery

The approach takes key elements of the road-based distribution model where micro consolidation centres are involved, and replaces them with sustainable solutions to significantly reduce congestion, air pollution, and carbon emissions across central London. The scaled solution has the possibility to be cost competitive with current road based operations.



Flexible Commercial Opportunities

The River Thames offers a diverse commercial opportunity for logistics transformation, where various distribution models can be customised to meet specific operational needs.

By investing in riverside distribution centers, river vessels, micro-consolidation hubs, and e-cargo bikes, logistics providers can create a flexible, scalable system for light freight. This model enables investors and operators to "pick and mix" assets and services, optimising cost-effectiveness and adaptability within London's unique urban environment.



Riverside Distribution Centre



River Vessel



Floating / Pier Micro-consolidation Centre



E-Cargo Bike

Investment costs	£3 - £15 Million per centre	£3-10 Million per boat	£2 - £5 Million per centre	£8,000-£10,000 per cargo bike
Potential investor	Logistics operator Third party investor	Likely to be existing river operator	Logistics operator Third party investor River operator	Logistics operator E-Cargo Bike operator
Revenue source	<ul style="list-style-type: none">Lease to logistics operatorVessel feesPart of vertically integrated operation	<ul style="list-style-type: none">Chartered on a day rate basis to a single parcel customerChartered on a day rate basis to a logistics operator	<ul style="list-style-type: none">Lease to E-Cargo Bike operator, or as part of a vertically integrated operationSponsorshipLocker rental	<ul style="list-style-type: none">Delivery fee for a parcel customer

Compelling Investment Opportunities

There are three major opportunities for third party investors in the river and e-cargo bike model.

- | **Developing the floating / pier micro consolidation centres for lease to E-Cargo Bike operators:** An investor could develop micro-consolidation centres along the Thames, each with a cluster of E-Cargo bike pods meaning the centre could service a range of providers. This could bring the investment value up to above £20m.
- | **Developing the riverside distribution centre:** An investor could develop a pier side loading point with either space for a distribution centre, to be leased to and developed by a logistics company, or a fully developed distribution centre that can be used by logistics companies.
- | **An end-to-end service:** An investor could develop both of the above and charter the necessary vessels, creating an end-to-end river service.



Meaningful Environmental Impact

Utilising the River Thames for freight logistics presents a powerful opportunity to cut emissions, reduce road congestion, and advance London's sustainability goals. Transitioning just a small percentage of London's deliveries to the river could lead to substantial environmental benefits:

This environmentally focused logistics model aligns with London's ambition to create a cleaner, healthier city, while meeting the needs of a growing urban population.

Reduction in Road Congestion: Shifting 3% of the city's 700 million annual parcel deliveries from roads to river freight could alleviate traffic pressure in central London.

Decreased Emissions: By leveraging a river-based logistics network, London could lower carbon emissions associated with last-mile delivery, contributing directly to its Net Zero targets. A 20 million parcel operation could enable saving of over 2,284 tonnes CO₂ and 3.6 tonnes NO_x

Cleaner Air Quality: River-based freight reduces vehicle-related air pollution, especially in congested areas, supporting healthier urban living environments.

Efficient Use of River Vessels and E-Cargo Bikes: The model combines river vessels with e-cargo bikes, enabling cost-effective, low-emission deliveries that bypass many of the inefficiencies of traditional road transport.



Next Steps

Achieving a river and e-cargo bike logistics model for London requires three key actions:

Step 1: Identify Anchor Customers

- | **Finding like-minded customers:** revenue for all elements of the commercial opportunity will be underpinned by customers willing to commit to using the river, and each stage of the commercial opportunity, for a fixed volume of parcels per year.
- | **Engaging at the right level:** senior engagement at key potential partner organisations is essential.
- | **Focussing on the model:** conversations should focus on whether the solution is feasible within their operating model and understand potential cost savings.
- | **Further opportunities:** opportunities for medium, containerised freight to be delivered in a river vessel model, but further analysis and research is needed to explore the additional infrastructure and operational activities required to develop this solution further.

Step 2: Attract Investors

- | **Finding like-minded Investors:** Investors need to have a full understanding of the potential investment costs, operating costs, revenue opportunity, revenue certainty and deliverability of the different investable assets.
- | **Develop an investment prospectus:** outline a business plan for a micro-consolidation investment and a distribution centre investment in financial terms, including costs, revenues and margin, rather than pure cost terms.

Step 3: Progress the development of RULE

- | **Develop partnerships:** The Riverside Urban Logistics Environment (RULE) project is an end-to-end supply chain solution that requires strong working arrangements. Identification of key partners is essential.
- | **Select locations:** Through robust analysis identify those locations that will form the network of floating micro-consolidation hubs in London.



Acknowledgements

We extend our sincere appreciation to WSP for their invaluable contributions to this report. Their expertise and thorough analysis have been instrumental in uncovering the potential of river freight as a driver for sustainable growth, enhanced logistics, and reduced urban congestion.

Thanks also to Rupert Wood who, as the non-executive board member and lead for logistics at the Growth Board, provided advice and guidance which has been invaluable to the development of this report.

We also wish to recognise and thank Gyula Törzsök for his dedication and meticulous work in authoring this report. His commitment to ensuring clarity, depth, and a comprehensive scope has been vital in bringing together a detailed case for the future of river-based logistics.



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About the Thames Estuary Growth Board

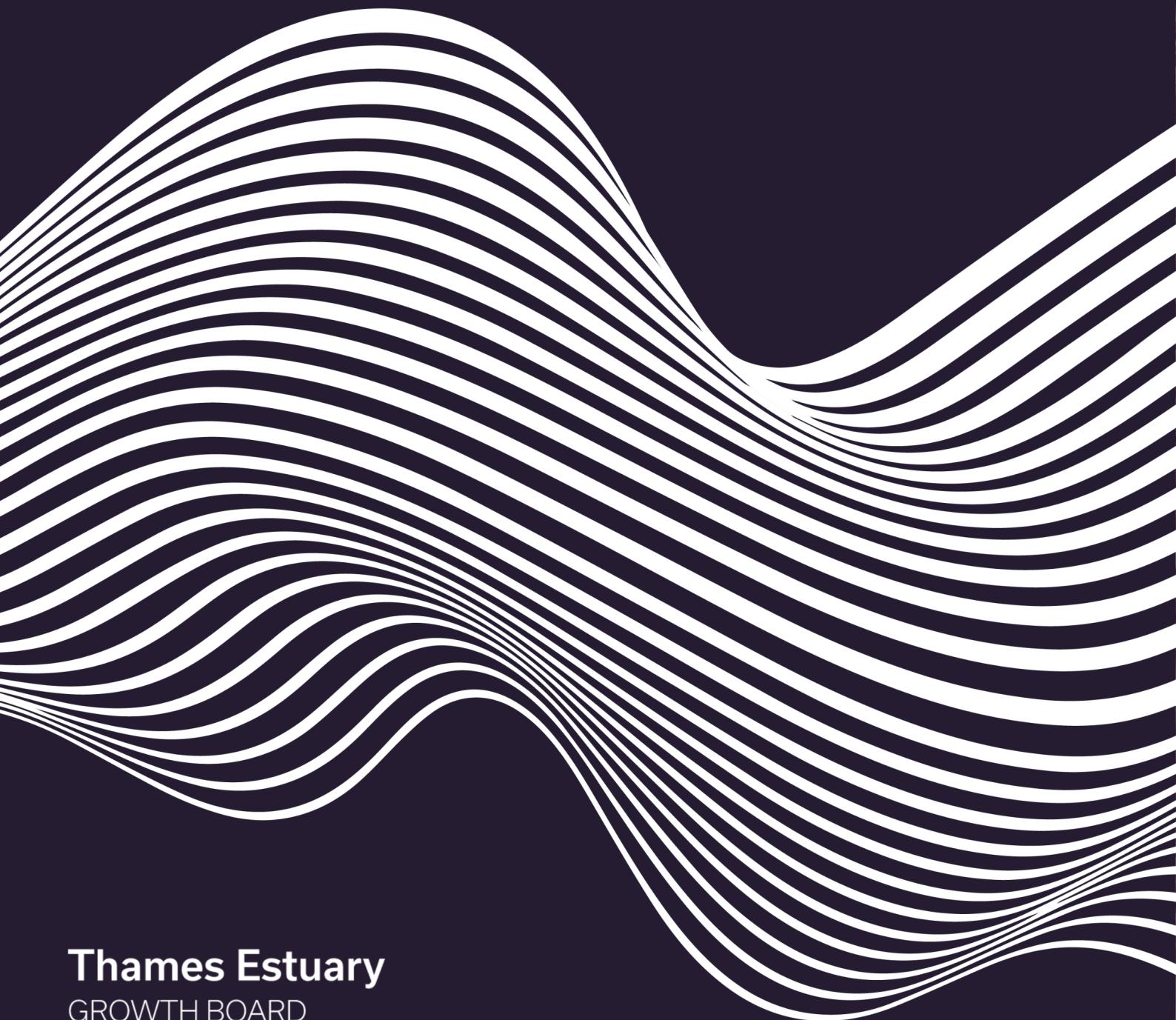
The Thames Estuary Growth Board is dedicated to unlocking the economic potential of the Thames Estuary. By fostering collaboration, driving investment, and spearheading innovative development projects, the Board is committed to transforming the Estuary into a thriving, sustainable, and economically vibrant region.

The Growth Board works to engage national and international investors, showcasing the Estuary's potential as a prime location for investment.

Through targeted initiatives, the board will highlight key development sites, foster investor relations, and drive forward the region's economic prospects.

The Growth Board remains steadfast in its commitment to driving growth that is not only economically beneficial but also equitable and environmentally sustainable. Through these strategic initiatives and the dedicated support of our stakeholders, we are setting the stage for a brighter, more prosperous future for the Thames Estuary.

Contact: enquiries@thamesestuary.org.uk



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