CROSS RIVER PARTNERSHIP
CLEAN AIR LOGISTICS FOR LONDON

Department for Environment Food & Rural Affairs

A DEEP DIVE: LIGHT FREIGHT ON THE THAMES

Understanding opportunities and challenges for river freight

Image source: SteveBidmead, Pixabay

Contents

This Deep Dive was developed by Cross River Partnership (CRP) as part of its Defra-funded Clean Air Logistics for London Programme. CRP would like to recognise and thank Defra as the funder for this document.

Read more about **light freight on the Thames** and the current **opportunities and challenges for river freight**.

01 Overview

Background

This document aims to set the scene for freight on the Thames. It provides details on what has been done historically, what is being done currently, and any barriers, opportunities and impacts associated with freight on the river. Through this document, Cross River Partnership (CRP) hopes to highlight areas where additional investment may be needed, and provide the context for those looking to support (and implement) river freight freight solutions on the Thames.

The Climate Emergency and River Freight

Many local authorities nationwide, along with all London authorities, have declared a climate emergency and have developed Air Quality Action Plans as part of their solution.

These Action Plans outline the effective measures each local authority will take to improve air quality locally, contributing to the efforts made by authorities London-wide and identifying their carbon neutrality and net zero target dates.

According to Transport for London, road freight makes up almost 90% of all loads carried in London, contributing to traffic congestion and poor air quality (1).

In contrast, the River Thames is an under-utilised resource and river freight has progressively become a topic of conversation across authorities who share access to the River Thames.

Although lack of awareness around the potential of the river and how to utilise river freight is still a challenge, there has been increasing recognition that using the river to move more light freight through London alleviates road traffic, improves air quality and offers a far more sustainable way to move goods around London.

This has been emphasised by several pilots that have taken place, showing how the river can help businesses to reduce their carbon footprint whilst also improving delivery times and reliability.

02 About the Thames

The History of Freight on the Thames

The River Thames is known for its historically prominent role in trade and commerce. It was a vital asset to the exponential growth of London during the industrial revolution. Additionally, the Thames transported timber, wool, foodstuffs, and livestock regularly to maintain the city's people and economy.

However, during the 1970s and 1980s the Port of London, and shipping on the River Thames was in a state of transition. New methods of cargo handling, particularly the introduction of containers and associated container ships, called for new investment and a rethink on the way dock traffic was traditionally managed. Consequently the importance of port facilities situated upriver declined, with these harbours seeing a sharp decrease in freight volume.

As a result, the Port of London Authority decided to run down and close the various London docks and concentrate all new investment downriver. These docks were then developed with apartment buildings and other infrastructure built in their place. Thus, freight on the River Thames was no longer a necessity for the city (1).

Passenger Transport on the Thames

Although freight services on the Thames had declined, the river became a more popular method of passenger transport. By the mid-1850s, millions of passengers a year were transported by river. Every day, roughly 15,000 people travelled to work by steamboat (1).

However, in the late 19th century, the advent of passenger rail meant river passenger transport declined sharply and the main operator went bankrupt. Attempts were made to revive river passenger transport in the early 20th century; however, their popularity was limited, and services largely offered a recreational service than a commuter service.

In 1997, CRP launched the Thames 2000 initiative which aimed to develop new river piers and boat services to link Central London and the Millennium Dome (1). Following the successful development project, a new service agency was created. It was agreed that the agency should be established as a subsidiary of Transport for London (TfL) and in 1997 London River Services (LRS) was formally incorporated as a limited company. LRS integrated boat services with other modes of travel, revolutionising the use of the Thames holistically (1).

03 The Re-emergence of Freight

Change is Coming

There has been an increasing need to shift from road based freight systems towards reliable and sustainable alternatives. In 2020, 450 million parcels were delivered in the capital, and 80% of these were delivered by road. However, studies predict that these parcel numbers ae likely to double by 2030 (2).

Additionally, the recent ULEZ expansion, alongside other policy shifts away from road traffic and fuel price increases signal a change (3). All of this will contribute to make road freight less cost-effective and will encourage businesses to look at alternatives.

However, several businesses have already made that change. DHL has been running a successful river freight service since 2018, whilst Cory Environmental has been transporting waste along the river for over 30 years. Additionally, there have been several successful freight trials using the river (including those by CRP).

CRP's Thames Directory: CRP's interactive web tool that provides information about utilising The River Thames to transport goods into London.

These examples, along with the support of organisations such as the Port of London Authority and LRS, highlight the River Thames potential for driving low carbon freight into London.

Furthermore, increased river freight will generate enormous environmental and social benefits through the removal of freight vehicles from the road, whilst also presenting an opportunity to push forward innovation through the development of new marine technologies in green power such as hydrogen and electricity propulsion (4).

Case Study 1 - DHL

DHL Express launched London's first riverboat parcel delivery service in 2020. (Prior to this they had been trialling the initiative sine 2018). The aim of the service is to ease congestion and provide a reliable and efficient way of transporting deliveries across the capital.

The riverboat service is operated by Thames Clippers Logistics and runs daily at 7:30am, transporting packages into London. Freight is loaded from electric vehicles onto the riverboat at Wandsworth Riverside Quarter Pier before travelling at high speed along the Thames into central London, docking at Bankside Pier and Wapping Pier.

At Bankside Pier, final mile deliveries are then carried out on DHL courier bicycles, whilst electric vans are used for deliveries from Wapping Pier. Although the volumes of freight are relatively small (~30 bags of parcels), the high value and quick delivery requirement of the goods makes the service beneficial and cost-efficient.

"With traffic and poor air quality becoming an increasing problem in urban areas like London, we're committed to finding a better blend of transport. This new and unique service, combining electric vehicles, riverboat and last-mile bikes creates fast and efficient access across the capital."

Ian Wilson, Chief Executive UK&I, DHL Express

Case Study 2 - Cory

Cory is a recycling and waste management company that has been using the river for many years. They use the Thames to transport non-recyclable waste on barges via riverside transfer stations in Wandsworth, Battersea, the City of London, Tower Hamlets, and Barking and Dagenham.

By using the river, this saves around 100,000 truck movements a year – a vital way of getting traffic off the road and making London safer and less polluted.

Additionally, in June 2020, all of Cory's vessels were moved to hydrotreated vegetable oil (HVO) fuels to make their fleet more sustainable and reduce pollutants. This reduced carbon emissions from their vessels by 90% and reduced the NOx particulate matter by 20%. It also made it more pleasant for staff onboard the tugs.

Consequently the river plays a big part in Cory's Sustainability Strategy as well as being an efficient method of transporting waste and recycling.

Case Study 3 - The London Light Freight River Trial

In February and March 2023, CRP worked in collaboration with eight project partners to deliver the London Light Freight River Trial; London's first daily, multi-supplier, river freight trial that incorporated return deliveries.

The trial aimed to serve the next day delivery market and provide a proof-of-concept for the viability of the Thames for fast, efficient and sustainable deliveries.

Consequently, the trial found that using the river for freight resulted in a 78% saving in NOx and an 88% saving in CO2 in comparison to traditional road-based delivery methods.

You can read more about the London Light Freight River Trial here.

04 Thames Light Freight SWOT analysis

Increasing Light Freight on the River

The case studies in Chapter 3 demonstrate that there is a precedent for successful Light Freight operations on the Thames, albeit at a relatively modest scale. However a key challenge is how we can enable river freight operations to be implemented at scale.

The SWOT analysis (strengths, weaknesses, opportunities, and threats) presented below highlights some of the challenges that need to be addressed and overcome in order for freight on the Thames to reach it's full potential.

Strengths

- Significant environmental benefits
- Potential to transport large volumes of freight
- Reduction in congestion
- Reduction of LGV/HGV use for last mile
- Create more jobs and economic value
- Encourages joint strategic approaches and partnerships

Weaknesses

- Infrastructure improvements required
- Vessel improvements required
- Multiple pier operators and organisations on the river
- Licensing and registering processes
- Capital costs to implement transition
- Higher comparative cost to other modes
- Lack of knowledge / understanding

Opportunities

- Adaption of piers to be multipurposed
- Advancement of new delivery methods
- Development of cleaner vessel technology
- New business growth for London
- Supporting net zero
- Lobby government to transport freight via river
- Raising awareness

Threats

- Cost to implement change
- Lack of business support
- Lack of policy support
- Lack of knowledge
- Challenge to encourage behaviour change
- Not a short-term fix, requires long term investment to enable at scale
- Lack of enabling technology
- Lack of enabling infrastructure

05 Making the Case

Research and Guidance

As interest in river freight has increased and the opportunities more widely acknowledged, several studies have been undertaken to try and address the weaknesses and threats identified:

- Getting Started with River Freight: A Guide for Businesses. CRP - a guide for businesses considering using the tidal Thames for freight, including processes, challenges and opportunities.
- Light Freight on the Thames Feasibility Study. Thames Estuary Growth Board/ WSP/ PLA - a comprehensive assessment of the potential for increasing river freight on the Thames, including what a commercially viable river freight solution might look like, alongside a costed business case and next steps.
- Light Freight Design Solutions for Thames Infrastructure. CRP/ Beckett Rankine/ PLA - a guide to pier infrastructure, providing recommendations on the best piers to use for freight and any associated infrastructure improvements.
- Thames Freight Infrastructure Design Guidelines for Pier. CRP/ Beckett Rankine/ PLA - comprehensive infrastructure guidance for pier owners and e-cargo bike operators to ensure safe and efficient transfer of light freight between river and shore.

Case Studies

Several case studies have been developed to share knowledge, learnings and impacts of river freight trials on the Thames.

- A Deep Dive: The London Light Freight River Trial. Process, Performance and Prospects. CRP - a detailed report on the process for setting up the trial, key performance measures and emissions savings data, lessons learned, and future prospects for river freight trials and operations as a viable sustainable logistics solution.
- River Freight Pilot Case Study: Summer 2022. CRP - learnings from CRP's six-week river freight pilot in July/August 2022.
- DHL Express River Freight Service Press Release. DHL - an overview of the DHL river freight service that is transporting small packages into central London.

Clean Air Logistics for London (CALL)

In 2021/2022, the Defra Air Quality Grant scheme awarded funding to CRP to deliver the Clean Air Logistics for London (CALL) Programme. A key objective of CALL was to examine the feasibility of moving more light freight by river instead of road transport initiatives, taking into consideration the relevant changes necessary to create sustainability and promote longevity.

CALL was coordinated by CRP along with 7 London Boroughs, the Port of London Authority, and the Fitzrovia Business Improvement District. It was designed to support 7 key priorities; existing river/pier and vessel modifications, pier to road land side integration, river freight, logistics micro hubs, electric vehicle last mile deliveries, cargo bike last mile deliveries and walking freight last mile deliveries.

Several outputs from the CALL Programme have helped to build the case for more light freight on the river (including the successful delivery of The London Light Freight River Trial) and you can find out more about the programme here.

"Cleaning up air quality is a key priority, and that presents major challenges for us in the heart of London. The more polluting freight vehicles we can take off the road, the better for our residents and their children who grow up breathing some of the dirtiest air in the country."

Councillor Adam Hug, Leader of Westminster City Council

06 The Future of the Thames for Freight

Conclusion

Significant challenges to scaling up river freight operations include the capital costs associated with infrastructure change, and engendering mass behaviour change within the logistics chain. These are necessary to make freight on the Thames a valuable and workable choice. Capital investment in infrastructure will benefit and develop further interest in structural changes as well as promote further usage for the Thames.

Additionally, further case studies and practical evidence will support the feasibility of economic and environmental benefits and develop a strong case to create last mile delivery behaviour change. Further trials that effectively demonstrate the logistical process, clearly identifying the challenges and mitigations will help establish extensive understandings of the level of investment required.

Image source: Thames Estuary, https://thamesestuary.org.uk/light-freight/, (August 2023)

Yet, despite these challenges, the scope to reduce traffic accidents, air and noise pollution through the use of the Thames is large.

This combined with the possibility to create new employment opportunities, new businesses, develop skills and training networks, meet net zero targets and further develop innovative emerging technologies (5) provides an exciting opportunity. But for this to be realised, a joint-strategic effort will be required.

If achieved, the future of the Thames looks bright.

07 Sources

(1) Transport for London (no date). River, Transport for London. Available at: https://tfl.gov.uk/corporate/about-tfl/culture-and-heritage/londons-transport-a-history/river

(2) Centre for London (2021). Worth the Weight: Making London's deliveries greener and smarter. Available at: https://centreforlondon.org/wp-content/uploads/2021/11/Worth_The_Weight_Report_Final.pdf.

(3) Transport for London (2023). ULEZ Expansion 2023. Available at: https://tfl.gov.uk/modes/driving/ultra-low-emission-zone/ulez-expansion-2023.

(4) (2020) Light freight on the river thames - thames estuary. Available at: https://thamesestuary.org.uk/wp-content/uploads/2022/02/Thames-Estuary-Growth-Board-River-Freight-Report-by-WSP-For-website.pdf

(5) Thames Estuary (2022). Light Freight in the Thames Estuary. Available at: https://thamesestuary.org.uk/light-freight/

If you would like further information about anything that has been included in this guidance, please get in touch:

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