OXFORD ECONOMICS

LONDON'S SAFEGUARDED WHARVES DEMAND AND CAPACITY RESEARCH

JUNE 2026

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To discuss the report further please contact:

Andy Logan: alogan@oxfordeconomics.com

Oxford Economics

4 Millbank, London SW1P 3JA, UK

Tel: +44 203 910 8061

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EXECUTIVE SUMMARY

This report, commissioned by the Greater London Authority (GLA), investigates demand for freight handled by London's safeguarded wharves now and in the future. It feeds into the evidence base to be used by the GLA to inform the development of policy proposals for the new London Plan. It may also help inform any subsequent safeguarding review work.

THE SITUATION IN 2024

In 2024, 8.3 million tonnes of freight passed through London safeguarded wharves. This was 99.6% of all the freight (by weight) that was handled by all wharves on the Thames in the year.

The cargo handled by safeguarded wharves was dominated by construction materials. They comprised 5.0 million tonnes or 60% of the total cargo handled by weight in 2024. Waste ranks second with a 10% share of cargo, followed by agricultural bulks at 9%.

In 2024, 4.3 million tonnes or 52% of the total was handled by the 20 safeguarded wharves in the North East region of the Thames. The South East region ranked second with its 14 wharves, which handled 3.2 million tonnes or 39% of the total. While the 10 safeguarded wharves in the West region handled 0.7 million tonnes, or 9% of the total.

CENTRAL FORECASTS OF TONNAGE HANDLED BY THE SAFEGUARDED WHARVES IN 2050

We forecast the growth or decline in each market-led commodity handled by the safeguarded wharves by using forecasts of end-user industries' expenditure (in real terms) on inputs of goods and services. For waste, we use the London Waste Infrastructure Capacity Study's forecast growth for household waste, with allowance made for the opening of the Riverside 2 energy from waste plant (due 2026).

Of the six market-led commodities handled by safeguarded wharves, five (agricultural bulks, construction materials, metals, petroleum products & chemicals, vehicles & unitised goods) are predicted to experience an increase in volume by 2050. Annual average growth rates (or CAGRs) for these five commodities are projected to range from 0.1% to 1.5% a year.

One market-led commodity type (sugar) is projected to decline in volume out to 2050. Our central forecast suggests the volume of sugar handled will decline by 0.1% on average each year (CAGR).

Resources Futures project household waste arisings under their planning scenario will increase by an average of 0.6% a year (CAGR) out to 2050.[1]

Our central forecasts suggest that the cargo handled by wharves in the North East will grow more rapidly than the other two regions of the Thames. The tonnage handled by wharves in the North East is projected to increase each year by an average of 1.6% (CAGR). The volumes that pass through the wharves in the West and South East are projected to increase by an annual average of 1.2% and 1.1% a year, respectively.

[1] Resources Futures, 2025, 'London Waste Infrastructure Capacity Study'.

IS CAPACITY AT SAFEGUARED WHARVES EXPECTED TO BE SUFFICIENT IN 2050?

Our central forecasts suggest that in aggregate for all commodities (including waste) there will be a shortage of capacity of 115,000 tonnes at London's safeguarded wharves, or 1% of total in 2050 (Fig. A). This mainly reflects a problem with a shortage of capacity for construction materials. Our central forecast projects demand will exceed capacity for this commodity by 622,000 tonnes or 10%. There is also a shortage of capacity of 82,000 tonnes for waste and the amount of spare capacity for agricultural bulks is very small. For the rest of the commodities, there is a reasonable safety margin.

Fig. A: Forecasts for tonnage handled by safeguarded wharves in 2050 and their capacity by commodity type

Commodity type	Cargo handled in 2024	Forecast for demand in 2050	Capacity in 2050	Spare capacity (+) or shortage of capacity (-)	Percentage surplus or deficit in capacity
Agricultural bulks	760,000	788,000	800,000	12,000	2%
Construction materials	4,957,000	7,109,000	6,487,000	-622,000	-10%
Metals	94,000	130,000	259,000	129,000	50%
Petroleum products & chemicals	525,000	775,000	990,000	215,000	22%
Sugar	470,000	455,000	580,000	125,000	22%
Vehicles & unitised	610,000	772,000	880,000	108,000	12%
Waste	855,000	1,747,000	1,665,000	-82,000	-5%
Total	**8,271,000**	**11,776,000**	**11,661,000**	**-115,000**	**-1%**

Source: Oxford Economics

Our central forecasts suggest there may also be issues with where the capacity is located (Fig. B.). If accurate, the projections suggest there will be 24% under capacity in the North East, and over capacity in the South East by 20% and West by 6%.

Fig. B: Forecasts for tonnage handled by safeguarded wharves in 2050 and their capacity by region of the Thames

Region of the Thames	Cargo handled in 2024	Forecast for demand in 2050	Capacity	Spare capacity (+) or shortage of capacity (-)	Percentage surplus or deficit in capacity
North East	4,341,000	6,535,000	5,279,000	-1,256,000	-24%
South East	3,210,000	4,257,000	5,335,000	1,078,000	20%
West	720,000	985,000	1,047,000	62,000	6%
Total	**8,271,000**	**11,776,000**	**11,661,000**	**-115,000**	**-1%**

Source: Oxford Economics

The results should not be used mechanistically. All forecasts out to 2050 should come with a health warning. This is particularly the case for safeguarded wharves as the recent history has been impacted by forced closures for the construction of the Tideway and Silvertown Tunnels. There has also been a spate of consolidation. As a result, the forecasts are subject to considerable degree of uncertainty. It would therefore be unwise to make any long-term decisions about future capacity at this time, allowing for re-activated, new consolidated, and re-available capacity, as well as the implications of new connectivity to become established.

1. INTRODUCTION

The use of the Thames to transport non-time-critical bulk commodities by water, rather than sending them by road has several advantages. Bulk water transport emits less greenhouse gases than a fleet of lorries required to carry the same volume of cargo, helping the transition to Net Zero.[2] It also reduces congestion on London's roads helping to reduce travel times, prevent fuel wastage, with the beneficial health impacts from better air quality and reduced noise.

The transport of freight by water requires wharves to load and unload the freight carried. Many of the wharves are located in what could be highly desirable locations if they were to be transformed into residential housing. To protect this critical transport infrastructure from development into residential or other uses, a network of wharves in London have been protected by Safeguarding Directions issued by the Secretary of State for Housing, Communities and Local Government since 2000.

The current government has an ambitious target to build 1.5 million new homes in England in five years. Attention is again focusing on land available for development in London, and elsewhere. To help address the appropriateness of removing safeguarded status from some of the wharves, this report forecasts demand for freight handled by London's safeguarded wharves up to 2050, and their capacity to handle this volume of cargo.

The report is organised as follows:

Chapter 2 investigates the Port of London Authority's data on the freight that has been handled by the safeguarded wharves over the past decade (2015-24). The analysis is undertaken by commodity type and across three regions of the Thames;

Chapter 3 explains the methodology used to forecast demand for each commodity type handled by the wharves. It presents the forecasts out to 2050, by commodity and region of the Thames, including the views of interview participants;[3]

Chapter 4 outlines a simple method to estimate the capacity of the safeguarded wharves. It also outlines developments at Rippleway Wharf and the uncertainty over the reactivation of the four safeguarded wharves in the West region which were closed for use as part of the construction of the Thames Tideway Tunnel (TTT) Scheme;

Chapter 5 compares the demand and capacity forecasts by commodity and by region of the Thames. It shows where we project shortages and surpluses of capacity are likely to occur by 2050; and

Chapter 6 concludes.

[2] Department for Transport, 'Transport energy and environment: data tables (ENV)', 17 December 2025.

[3] This report has benefitted from interviews with staff at six of the safeguarded wharves. Thanks go to the staff at: Brett Group; CRH; Keltbray; Recycled Materials Supplies; S. Norton Ltd; and Tate & Lyle Sugars Europe. It also goes to staff at the Port of London Authority and Thames Clippers who we interviewed.

2. COMMODITIES PASSING THROUGH LONDON'S SAFEGUARDED WHARVES

This chapter is an introduction to the freight traffic that passes through 40 of London's 44 safeguarded wharves. It looks at the freight by commodity type and by region of the Thames using the PLA's most recent tonnage data. The four wharves completely excluded from the dataset were closed in 2024 for the construction of the Tideway Tunnel (colloquially known as London's Super Sewer). While the intention is that they will become operational again following its completion in February 2025, as at May 2026 none of the four had been reactivated.

2.1 THE FREIGHT PASSING THROUGH LONDON'S SAFEGUARDED WHARVES

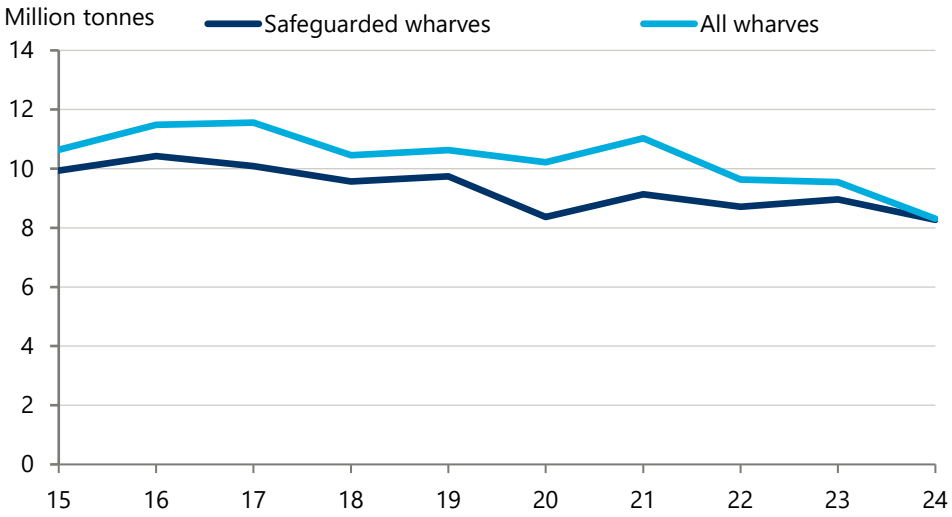
In 2024, 8.3 million tonnes of freight passed through London's safeguarded wharves (Fig. 1). This was a decline of 16.7% over the last decade (2015-2024). To put that into context, the economic output (as measured by gross value added in real terms) generated by all the business and other economic entities located in London is estimated to have increased by 16.1% over the same time interval.[4] Meanwhile, the population increased by 5.0% over the same period.

The high levels of tonnage handled at safeguarded wharves in 2015 and 2016 (the peak) reflect the high level of construction activity due to the coincidence of three major infrastructure projects (Northern Line extension to Battersea, the Elizabeth Line and Tideway Tunnel). Since then, tonnage has followed the broader cycle in construction activity, which remains the principal driver of freight movements through safeguarded wharves.

The subsequent decline in throughput reflects a combination of factors. The Covid-19 pandemic resulted in a 14.2% reduction in tonnage in 2020 as economic activity was temporarily constrained, and volumes had not returned to pre-pandemic levels by 2024. More recently, weaker construction output in London during 2023 and 2024 has further reduced demand for river borne freight. The downward trend has also been influenced by changes in operational capacity, including the loss/temporary unavailability of safeguarded wharf facilities associated with major infrastructure projects such as the Thames Tideway Tunnel and the Silvertown Tunnel, together with the effects of industrial land release along the Thames. These changes have been reflected in the wharf consolidation process undertaken through successive safeguarded wharf reviews.

[4] Gross value added is the contribution to GDP made by a firm, entity, or in this case region. It is easiest thought of as the amount the region's output is sold for minus the costs of bought-in inputs of goods and services used up in that output's production. Summing gross value added across the UK plus taxes on products less subsidies on products gives GDP. GDP is the main metric used to measure the rate of growth of the economy, whether it enters a recession, or compare the relative sizes of economies.

Fig. 1. Thames freight traffic by wharf type



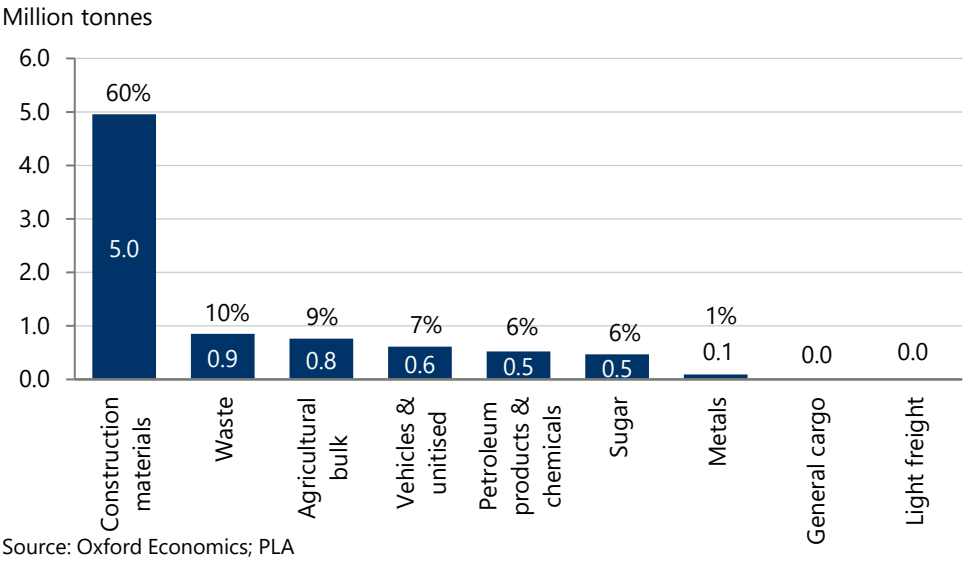
Source: Oxford Economics; PLA

Only a proportion of the wharves in London are awarded safeguarded status. However, in 2024, 99.6% of the freight that travelled on the Thames passed through wharves that are currently safeguarded. This is the highest proportion over the decade suggesting the safeguarding overall is now well focused. In 2020, non-safeguarded wharves took 18.1% of the freight, while the current safeguarded ones dealt with 81.9%.

2.2 WHAT TYPE OF FREIGHT IS HANDLED AT LONDON'S SAFEGUARDED WHARVES

In 2024, freight cargo handled by safeguarded wharves was dominated by construction materials (using weight as the metric). They comprised 5.0 million tonnes or 60% of the total cargo handled (Fig. 2). Waste ranks second with a 10% share of cargo, followed by agricultural bulks (including wheat, corn, soybeans, rice, barley, oilseeds, etc) at 9%. The safeguarded wharves did not handle any general cargo and light freight in 2024.

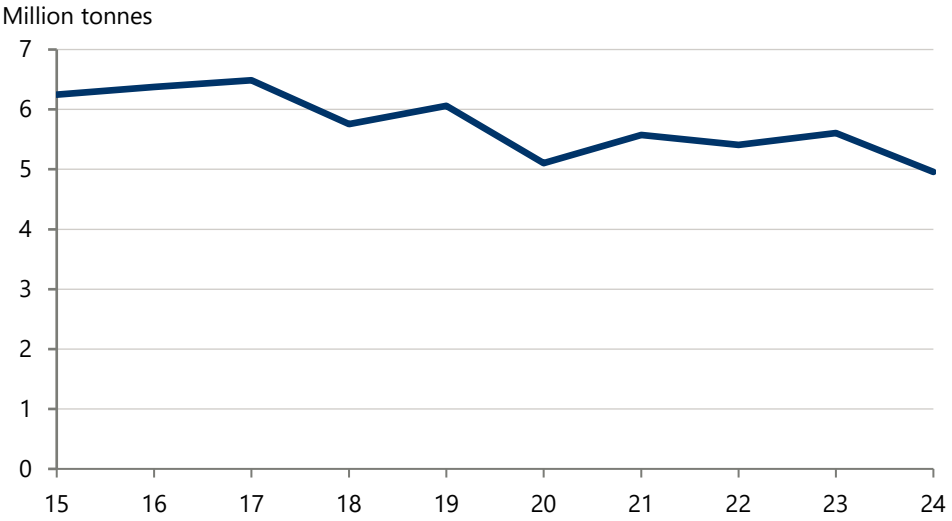
Fig. 2. Composition of freight passing through safeguarded wharves in 2024



Source: Oxford Economics; PLA

Construction materials have been the dominant cargo type over the past decade. These include aggregates, demolition and excavation materials. Over the decade, the weight of construction materials carried has declined by 20.6% (Fig. 3), largely reflecting the three major infrastructure construction projects underway in the first few years of the decade shown. This compares to a 9.4% decline in economic activity (as measured by gross value added) generated by the construction industry in London over the same period. Construction activity in the capital was heavily hit by the Covid pandemic and associated restrictions, decreasing by 20.2% in 2020. By 2022, two thirds of the loss in activity had been recovered, but 2023 and 2024 have seen further declines in construction activity in London.

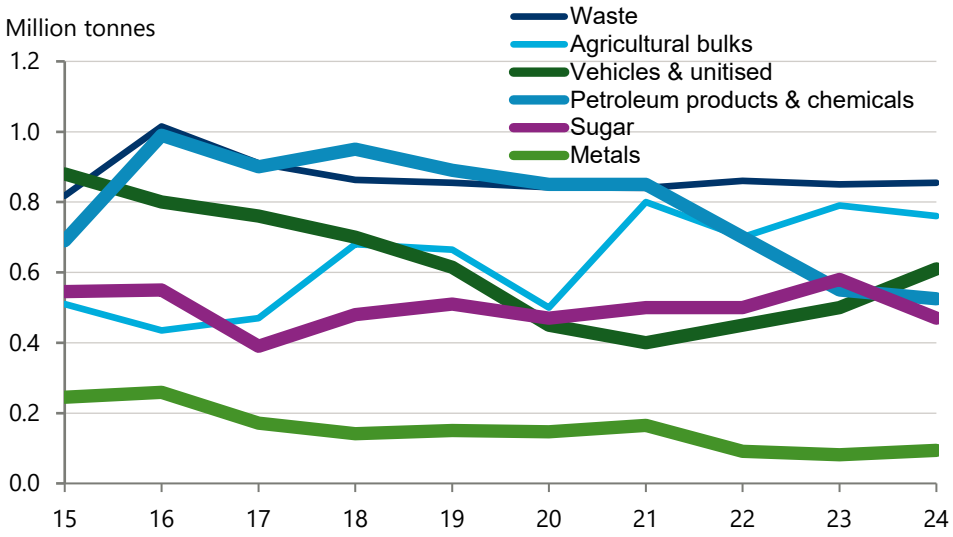
Fig. 3. Construction materials passing through London's safeguarded wharves



Source: Oxford Economics; PLA

Of the other six commodities that passed through safeguarded wharves in 2024, two increased in size over the decade, while the other four declined (Fig. 4). Between 2015 and 2024, the tonnage of agricultural bulks and waste increased by 49.0% and 4.5%, respectively. Of the four commodities that declined in tonnage, metals fell the sharpest at 61.7%, followed by motor vehicles and unitised goods at 30.7%.

Fig. 4. Other commodities passing through London's safeguarded wharves



Source: Oxford Economics; PLA

The safeguarded wharves handled minimal tonnage of general cargo or light freight over the past decade. However, there have been a number of proof of concept short-term trials using passenger vessels with the seats removed to carry freight.[5] Between September 2020 and February 2026, DHL ran a riverboat parcel delivery service between Wandsworth Riverside Quarter to Bankside Pier in Southwark.[6] Looking forward, Thames Clippers have purchased a fully electric vessel to carry freight from Dartford into central London, though they anticipate some challenges with charging infrastructure. Whether the service will impact the need for safeguarded wharves will depend on whether it stops at the piers or the safeguarded wharves (including Orchard Wharf).[7]

2.3 TONNAGE PASSING THROUGH THE SAFEGUARDED WHARVES BY REGION

Previous studies (see Ocean Shipping Consultants (2016) have analysed the cargo passing through the safeguarded wharves by three regions of the Thames (North East, South East, and West).[8] The three regions and location of the safeguarded wharves are shown in Fig. 5. As is evident from the

[5] Cross River Partnership, 'The London Light Freight River Trial: Making the case for deliveries using the Thames', March 2023.

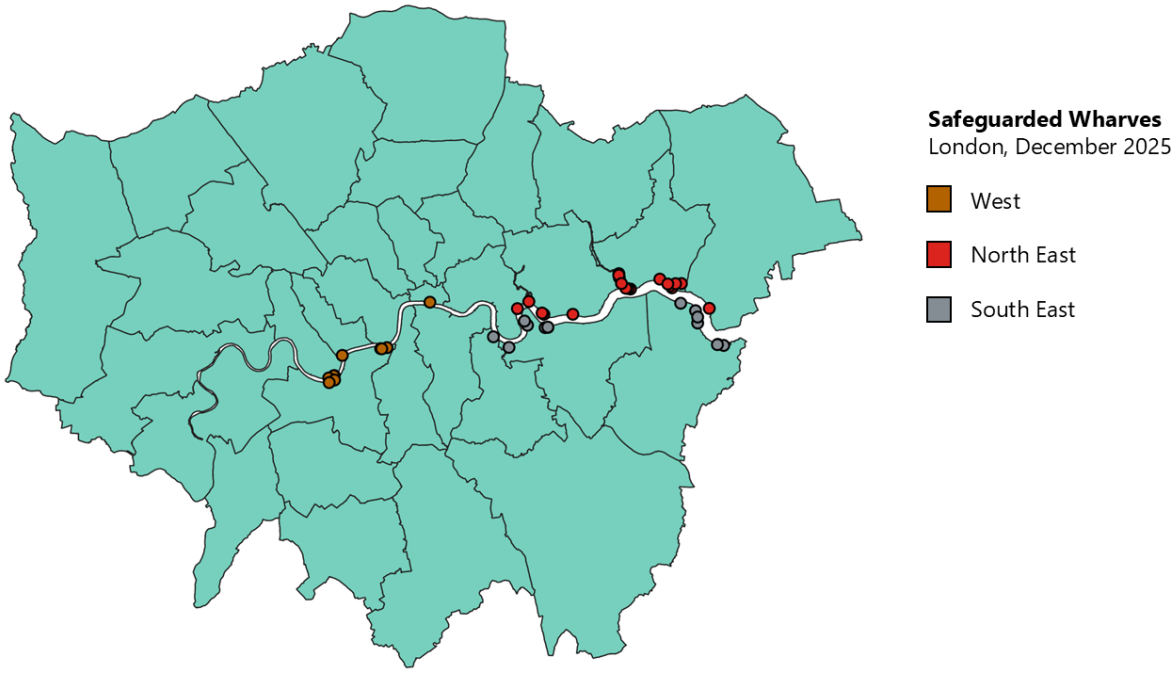
[6] DHL, 'Riverboat Thames Service', 27 September 2020.

[7] Planning permission has been granted subject to S106 (PA/24/00812) for redevelopment of Orchard Wharf in Tower Hamlets with a wharf box on ground floor to be used by Thames Clippers for light freight uses. The S106 discussions are nearing completion, with construction work possible to commence by the end of 2026. These are scheduled for completion in 2029Q2.

[8] Ocean Shipping Consultants, 'Forecasting London's freight demand and wharf capacity on the Thames', December 2016.

map, the North East region wharves are on the east side of London on the North bank of the Thames. The South East region relates to the wharves on the east side of London, but South bank. The West region relates to wharves in the West on both sides of the Thames.

Fig. 5. Location of the safeguarded wharves in 2024 and regional split



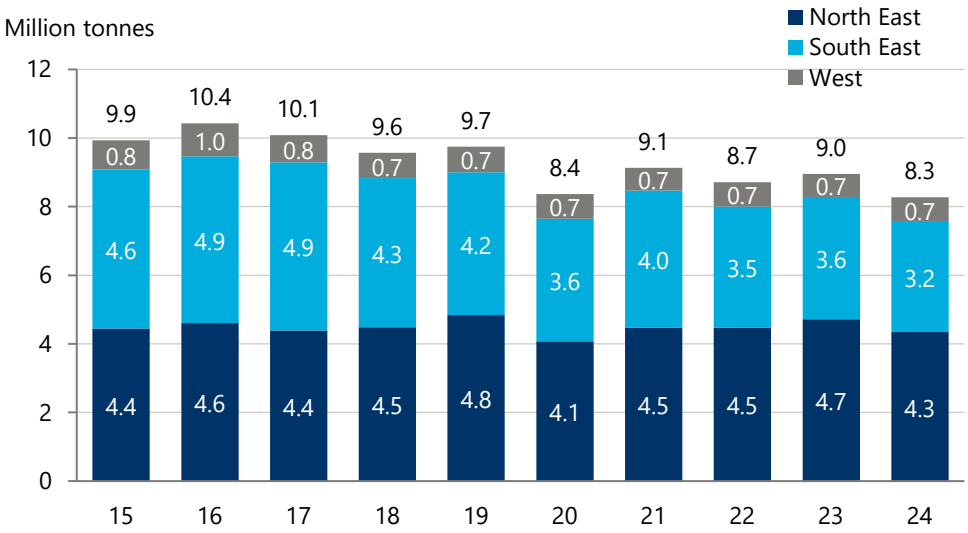
In 2024, 4.3 million tonnes or 52% of the total was handled by the 20 safeguarded wharves in the North East region of the river (Fig. 6).[9] The South East region ranked second with its 14 wharves, which handled 3.2 million tonnes or 39% of total.[10] While the 6 operational wharves out of the safeguarded 10 in the West region handled 0.7 million tonnes, or 9% of the total.[11] The four wharves closed in 2024 for the construction of the Tideway Tunnel and therefore excluded from the dataset are all located in the West which will affect the tonnage data. However, it should also be acknowledged that the West wharves are categorically distinct as they can only be served by smaller vessels which is likely to affect overall capacity.

[9] The safeguard wharves in the North East region are: Alexander Wharf; Cemex Dagenham; De Pass Wharf; Docklands Wharf; East Jetty; Eurovia Roadstone (White Mountain); Ford Dagenham Terminals; Halfway Wharf; Hanson Aggregates; Kierbeck Wharf
Northumberland Wharf; Orchard Wharf; Peruvian; Pinns Wharf; Plaistow Wharf; Rippleway Wharf; Royal Primrose Wharf; TDG European Chemicals; Thames Refinery; and Victoria Stone Wharf.

[10] The safeguard wharves in the South East region are: ADM Erith Ltd; Angerstien Wharf; Brewery Wharf; Convoys Wharf; Conways; Middleton Jetty; Mulberry Wharf; Pioneer Wharf; Riverside Wharf; Standard Wharf; Tarmac (Murphys); Town Wharf Tunnel Wharf; and Victoria Deep Water Terminal.

[11] The safeguard wharves in the West region are: Comleys; Cremorne Wharf; Cringle Wharf (Battersea); Hurlingham Wharf; Kirtling Wharf; Middle Wharf; Pier Wharf; Swedish Wharf; Walbrook Wharf; and Western Riverside/Smugglers Way.

Fig. 6. Freight tonnage passing through the safeguarded wharves by region



Source: Oxford Economics; PLA

As the location of the wharves is all important in determining their usefulness to moving bulk commodities to their destination, we investigate the location of the wharves by the commodity they handle. There are multiple wharves handling construction materials, general cargo, and waste in all three regions (Fig. 7). As all four of the wharves closed in 2024 to build the Tideway Tunnel have previously handled construction materials in the West, the spatial distribution of wharves dealing with aggregates and other building materials will be more evenly spread when they are reactivated, if they continue to handle this commodity type.

Fig. 7. Number of operational safeguarded wharves and their tonnage by the three regions in 2024[12]

	Agricultural bulks	Construction materials	General cargo	Light freight	Metals	Petroleum products & chemicals	Sugar	Vehicles & unitised	Waste	Total
Numbers of wharves in 2024										
North East	0	8	1	1	5	1	1	1	2	20
South East	1	9	2	0	1	0	0	0	1	14
West	0	2	1	0	0	0	0	0	3	6
Total	**1**	**19**	**4**	**1**	**6**	**1**	**1**	**1**	**6**	**40**
Numbers of wharves in 2024 (as a percent of total for that commodity)										
North East	0%	42%	25%	100%	83%	100%	100%	100%	33%	50%
South East	100%	47%	50%	0%	17%	0%	0%	0%	17%	35%
West	0%	11%	25%	0%	0%	0%	0%	0%	50%	15%
Tonnage in 2024 (million tonnes)										
North East	0.0	2.5	0.0	0.0	0.1	0.5	0.5	0.6	0.2	4.3
South East	0.8	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.2	3.2
West	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.7
Total	**0.8**	**5.0**	**0.0**	**0.0**	**0.1**	**0.5**	**0.5**	**0.6**	**0.9**	**8.3**
Tonnage in 2024 (as a percent of total for that commodity)										
North East	0%	50%	N/A	N/A	100%	100%	100%	100%	20%	52%
South East	100%	46%	N/A	N/A	0%	0%	0%	0%	20%	39%
West	0%	4%	N/A	N/A	0%	0%	0%	0%	60%	9%

Source: Oxford Economics; PLA

In contrast, some of the commodities are only handled by one wharf, so there is no geographical dispersion. Examples of this are agricultural bulk (South East), light freight, petroleum products and chemicals, sugar, and vehicles (all North East (Fig. 8)). For some commodities, this lack of dispersion reflects the wharf serving a sole customer. For example, Tate & Lyle and Ford use their wharves for the handling of sugar and vehicle engines at their adjoining refineries and plant, respectively.

Metals is the one commodity that is handled by multiple wharves (six in total), which are located in two out of the three regions of London, albeit the wharf in the South East handled zero tonnage of metal in 2024.

[12] The table excludes the four safeguarded wharves that have been excluded from the dataset as they were closed in 2024 for the construction of the Tideway Tunnel. All are located in the West region and handle construction materials. At their peak in 2020, the four handled 1.5 million tonnes of construction materials. See section 4.3.

Fig. 8. Tonnage handled by safeguarded wharves by region and commodity in 2024

	North East	South East	West	Total
Construction Materials	2,467,000	2,280,000	210,000	4,957,000
Metals	94,000	0	0	94,000
Vehicles and Unitised	610,000	0	0	610,000
Petroleum Prod. & Chemicals	525,000	0	0	525,000
Waste	175,000	170,000	510,000	855,000
Agricultural Bulks	0	760,000	0	760,000
Sugar	470,000	0	0	470,000
Total	**4,341,000**	**3,210,000**	**720,000**	**8,271,000**

Source: Oxford Economics; PLA

3. FORECASTING FUTURE DEMAND FOR SAFEGUARDED WHARVES

In this chapter we set out our methodology for forecasting each of the commodity types that are handled by the safeguarded wharves. We produce a central forecast with upper and lower bounds out to 2050.

3.1 WHICH OF THE COMMODITIES ARE WE FORECASTING?

As discussed in Chapter 2, the PLA have provided data on freight volumes passing through the wharves by nine different commodity groups over the past decade (2015-24). These are agricultural bulks; construction materials; general cargo; light freight; metals; sugar; petroleum products and chemicals; vehicles and unitised; and waste.

We have chosen to forecast six of these commodities which are driven by market-based factors using a common methodology. This uses projections of the procurement spend of the industries that buy each commodity as an input. We use a different approach for waste as its movement is subject to considerable regulatory intervention and the public sector plays an important role.

As zero tonnage of general cargo and light freight have been handled by the safeguarded wharves over the past decade, we have not produced forecasts for these two commodities. The reason for this is because of the problems estimating a forecast based on the back data, not a belief that these commodities couldn't be handled by the safeguarded wharves over the next 25 years.[13]

[13] It is questionable whether tonnage is the appropriate metric to measure the volume of general cargo and light freight handled.

3.2 METHODOLOGY FOR FORECASTING COMMODITIES TRANSPORTED ON THE THAMES

3.2.1 Industries expenditure on each of the six commodities

The six commodities driven by market demand are: agricultural bulks; construction materials; metals; sugar; petroleum products and chemicals; and vehicles and unitised. For each, we begin by identifying which industries in the UK purchase the commodity.

To get data on which industries purchase the six commodities we use a series of the Office for National Statistics' input-output tables. These are large matrices showing the transactions between buying and selling industries in the UK.[14] We have chosen to focus on the 'Imports use' table as it shows the value of different industries purchases of imported products. We have selected imports as they are more likely to be transported up the Thames by water, rather than domestic products which we believe will be more likely to be moved by other modes of transport.[15]

We have aligned each of the PLA's commodities to a commodity type or types in the input-output table. This is shown in Fig. 9. This gives us data in £ million on each industry's expenditure on imports of that product type in that year. For the forecasts we have used the data in latest input-output table.[16]

Fig. 9. PLA commodities and matching ONS product classifications

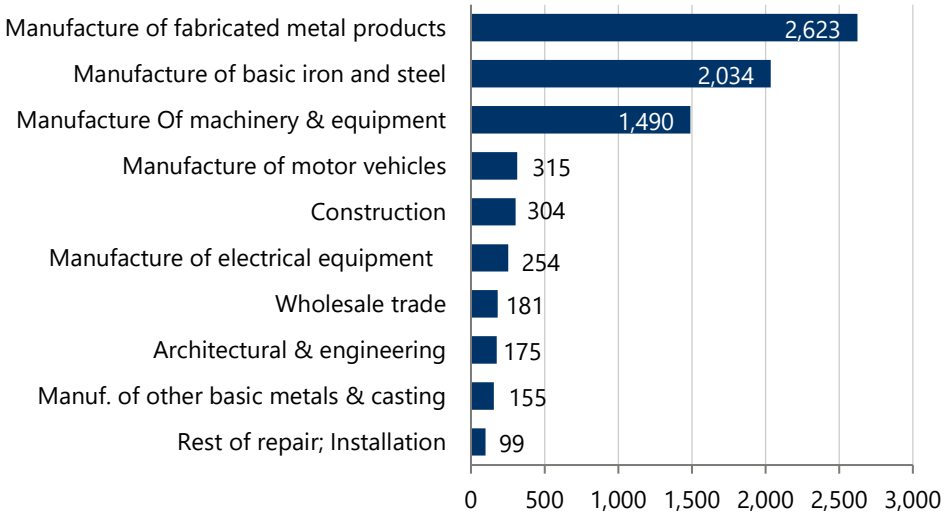
Commodity as defined in the PLA's statistics	Statistical classification of products by activity (CPA) code	CPA product defintion
Agricultural bulks	CPA_A01	Products of agriculture, hunting and related services
Construction materials	CPA_B08	Other mining and quarrying products
Metals	CPA_C241_3	Basic iron and steel
Sugar	CPA_C108	Other food products
Petroleum products & chemicals	CPA_C20B	Petrochemicals
Vehicles and unitised	CPA_C29	Motor vehicles, trailers and semi-trailers

Source: Oxford Economics; ONS; PLA

Using the ONS input-output tables we extract data on 105 industries expenditure on imports of each of the six commodities for each year up to 2022. We illustrate what the procurement data establishes, using metals as an example. Fig. 10 shows expenditure on imported metals by the ten industries which purchase the most imported metals in 2022 (for space reasons we have omitted the other 95). For this commodity (as is true with some of the others) a few industries undertake the majority of the spending. For example, the ten industries included in the figure are responsible for 95% of the expenditure on imported metals.

[14] To be more precise, we have chosen to use the product by industry analytical input-output table.
[15] While most of the safeguarded wharves interviewed just used their facilities to import, two participants did discuss their sites to move scrap metal and recycled construction waste out of London.
[16] ONS, 'United Kingdom input-output analytical tables, 2022', 2024.

Fig. 10. The expenditure on imported metals undertaken by the ten largest purchaser industries in 2022



Source: Oxford Economics; ONS

In the interviews we undertook with staff at safeguarded wharves we asked where the products their wharf handled went to or came from. Most interviewees replied either within the M25 motorway or London. We therefore need to adjust the spending weights to reflect the industrial composition of London, rather than the UK as a whole.[17,18] To do this we use employment location quotients, using data sourced from the ONS Business Register and Employment Survey data.[19] An employment location quotient shows a region's industrial specialization relative to the whole nation using employment data. It is computed as an industry's share of London's total employment divided by the industry's share of Great Britain's total employment.[20]

3.2.2 Projections of industries procurement out to 2050

Oxford Economics forecast over 100 industries' turnover, gross value added, profits, investment, and spend on inputs of goods and services in the UK (and 76 other countries).[21] The forecasts go out to 2050 and are updated monthly. We will use the UK forecasts for the relevant industries' expenditure on inputs of goods and services in real terms (i.e. controlling for inflation).

[17] GLA Economics did construct an input-output table for London in 2014. We have opted not to use that as it is too aggregated at an industry level, for example, agriculture, forestry and fishing, mining and quarrying, electricity, gas, steam and air conditioning supply, and water supply, sewerage, waste management and remediation activities are all combined into one industrial category called primary & utilities. Greater London Authority, 'London input-output tables', 2014.

[18] The definition of London used is the International Territorial Level 1 from January 2021 and the major towns and cities definition between 2015 to 2020.

[19] The Business Register and Employment Survey can be accessed at NOMIS.

[20] Great Britain is used rather than the United Kingdom as the employment data for Northern Ireland are not available from NOMIS.

[21] Oxford Economics, 'Global Industry Service', accessed November 2024.

3.2.3 Producing our central forecasts

To produce our central forecasts of the amount of each type of cargo handled we weight together the projections for the 105 industries expenditure on inputs of goods and services. The weights for each commodity reflect each of the 105 industries' expenditure on imports of that commodity drawn from the input-output tables adjusted for London's industrial structure.

To produce our central regional forecasts we use the commodity forecasts and the composition of the cargo handled in 2024.

3.2.4 Our approach for waste

We have adopted a different approach for waste as there is no industrial or household demand for this commodity and it is subject to greater public sector intervention. We have used the annual growth rate (CAGR of 0.6%) from the Planning Scenario for household waste in the London Waste Infrastructure Capacity Study.[22] This provides the backdrop for the amount of waste that is generated by households living in London. The opening of the Riverside 2 waste facility in Bexley in 2026 is projected to increase the volume of waste that is that handled by the safeguarded wharves. Following advice from PLA staff, we have assumed the additional amount of waste travelling on the Thames will be equivalent to Riverside 2's full capacity of 650,000 tonnes when fully operational.

3.2.5 Methodology for generating the lower and upper case forecasts

The lower and upper case forecasts are generated by looking at the past volatility of the tonnage for each commodity. They stand two standard deviations away from the central forecast in 2050, where the standard deviation has been calculated using the PLA data for 2015 to 2014. The more volatile the volume of a commodity handled by the safeguarded wharves over the past decade, the further the lower and upper case are from the central forecast in 2050.

3.3 OUR CENTRAL FORECASTS FOR EACH COMMODITY

This section of the report details our central forecasts.

3.3.1 Agricultural bulks

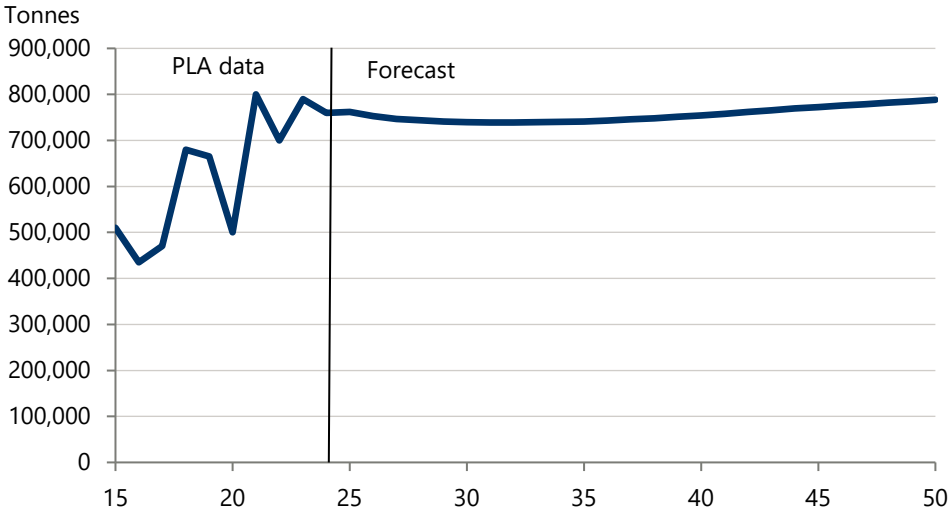
In 2024, 760,000 tonnes of agricultural bulks were handled by safeguarded wharves. Our central forecast suggests this will increase to 788,000 by 2050, based on projections for customer industries procurement (Fig. 11). This is an annual average increase of 0.1% (or CAGR[23]) a year. The commodity is mostly imported by manufacturers of grain mill products, starches and starch products, vegetable oils and fats, other human food products, and animal feed.

The projected growth rate is below Oxford Economics' forecasts for the annual average growth rate of the gross value added of food manufacturers in London over the same time period at 0.5%.

[22] Resource Futures, 'London Waste Infrastructure Capacity Study', 2025.

[23] A compound annual growth rate (CAGR) is the annual rate of growth that shows how an indicator (in this case tonnage handled) grows from its beginning value (2024) to its ending value (2050). The formula for the CAGR is CAGR = ((Tonnage in 2050/Tonnage in 2024)^1/26)-1)*100.

Fig. 11. Central forecast of the tonnage of agricultural bulk handled by safeguarded wharves

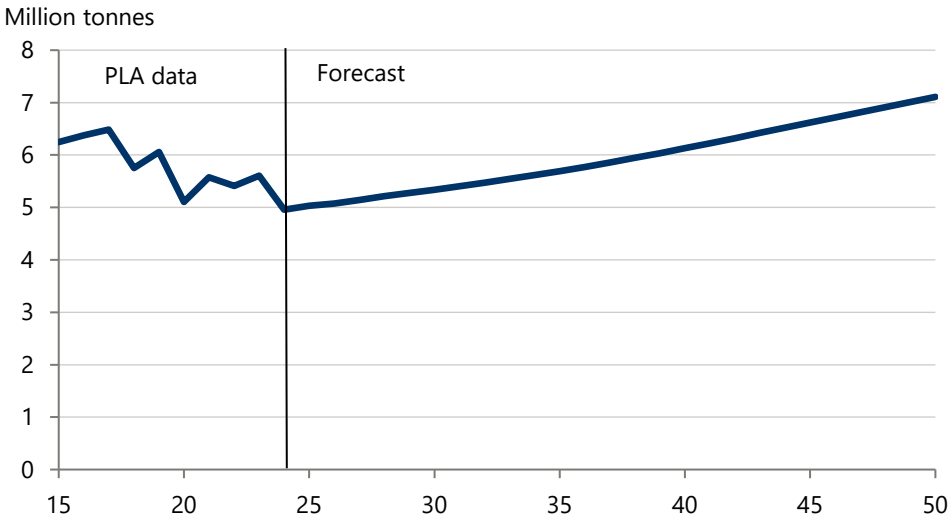


Source: Oxford Economics; PLA

3.3.2 Construction materials

By weight, construction materials are the dominant freight type handled by London's safeguarded wharves. In 2024, they handled just under 5 million tonnes, 24% down on the recent peak of 2017 when the build of several major infrastructure projects coincided (Northern Line extension to Battersea, the Elizabeth Line and Tideway Tunnel). Our central projection predicts this volume will increase to 7.1 million by 2050 (Fig. 12). This is an average annual growth rate (or CAGR) of 1.4%. It is below Oxford Economics' forecasts for the average annual growth rate of construction gross value added between 2024 and 2050 of 1.9%, which could reflect the different usage rate of aggregates by different types of construction (infrastructure versus housing and non-residential), or differences in the metrics. We believe the central forecast is credible, but based on our forecasts for the growth in construction gross value added there are risks it may be overly conservative.

Fig. 12. Central forecast of the tonnage of construction materials handled by safeguarded wharves



Source: Oxford Economics; PLA

There were differences in the interviewees' optimism about the strength of future demand for aggregates their wharf would be handling. This is perhaps not surprising given their role in supplying local construction sites. Aggregates are a low value product. If they have to travel too far the logistics cost of delivery can very quickly encourage prospective customers to switch to alternative sources of supply. Interviewees tended to refer to large infrastructure projects in their locality (such as Lower Thames Crossing) as the main driver of demand. Some had looked at the National Infrastructure & Service Transformation Authority's Infrastructure Pipeline for some indication of future demand.[24] There was a general negative mood about the current level of construction activity in London and the impact that was having on their cargo volumes.

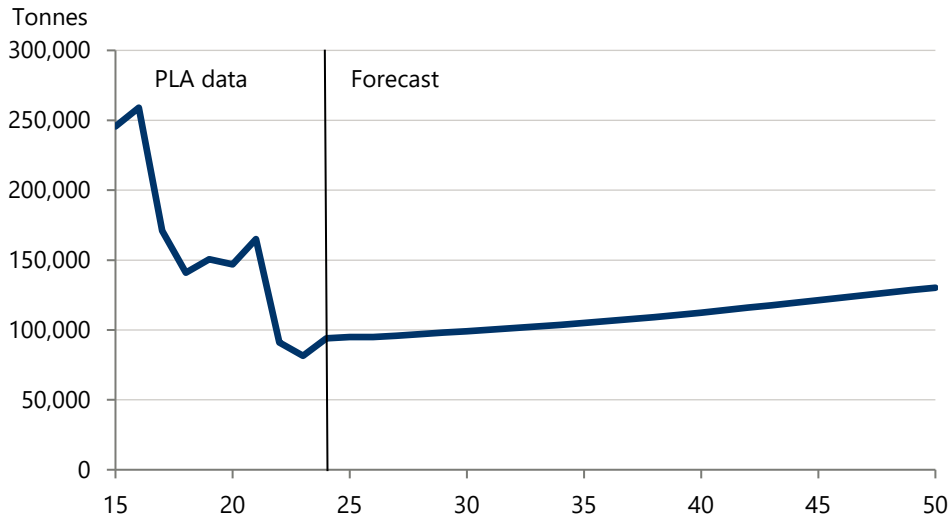
The London Local Aggregates Assessment investigates demand for aggregates.[25] It emphasizes London's reliance on imported mineral aggregates, including those dredged from the sea, which largely have to be brought in by boat. Its overview of future major construction projects is quoted in the Appendix. It explores three housing forecasts. It projects demand for aggregates would be 18% higher over ten years if the London Plan (2021) Housing Target of 52,000 new homes per year was met rather than the baseline extrapolated from recent housebuilding trends. If its Higher Housing Growth Scenario of 88,000 news homes a year was met demand for aggregates was projected to be 66% higher than the baseline of recent trends.

3.3.3 Metals

In 2024, the safeguarded wharves in London handled 94,000 tonnes of metals. Our central projection suggests this will increase to 130,000 by 2050 (Fig. 13). This is an annual average increase (or CAGR) of 1.3%.

[24] National Infrastructure & Service Transformation Authority, 'Infrastructure Pipeline', March 2026.
[25] London Aggregates Working Party, 'London Local Aggregates Assessment', 2026.

Fig. 13. Central forecast of the tonnage of metals handled by safeguarded wharves



Source: Oxford Economics; PLA

The metal-handling wharves receive scrap metal from across their supply chains, primarily by road. Material is processed on-site, including cutting and sizing to meet handling and transport requirements, before being exported via the River Thames for recycling. Demand for these operations is largely driven by global construction activity, particularly demand for steel reinforcement bar (rebar) and other steel products. On the supply side, the availability of scrap metal is influenced by levels of construction and demolition activity, as well as prevailing metal prices, with higher prices generally encouraging greater volumes of scrap to enter the market.

Stakeholder interviews indicated that, although the UK is expanding its domestic metal recycling capacity, the grades of scrap metal handled at these wharves are expected to remain predominantly export-oriented. As a result, interviewees considered that exports are likely to continue to represent the principal market for these facilities over the foreseeable future. Forecasts of the growth of global construction output are above (2.0% versus 1.3% on a CAGR basis) the central projection, suggesting it may be on the low side.[26]

3.3.4 Petroleum products & chemicals

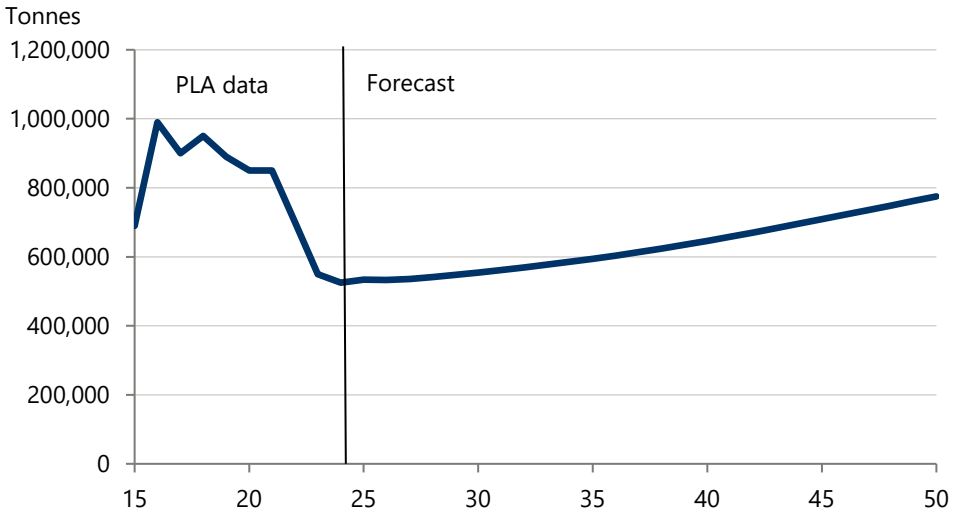
In 2024, 525,000 tonnes of petroleum products and chemicals were handled by London's safeguarded wharves. Our central projection predicts this will increase to 775,000 tonnes by 2050 (Fig. 14). This is an annual average growth rate (or CAGR) of 1.5% a year.

The outlook for the UK chemical industry is bleak. Output levels have been hit by reduced price competitiveness due to higher gas and electricity prices than elsewhere, higher environmental and other regulatory costs, and excess global capacity, largely driven by China. With the domestic

[26] Oxford Economics, 'Global Construction Service', accessed June 2025.

industry in the doldrums, the forecasts reflect demand for increased imports passing through safeguarded wharves.

Fig. 14. Central forecast of the tonnage of petroleum products and chemicals handled by safeguarded wharves



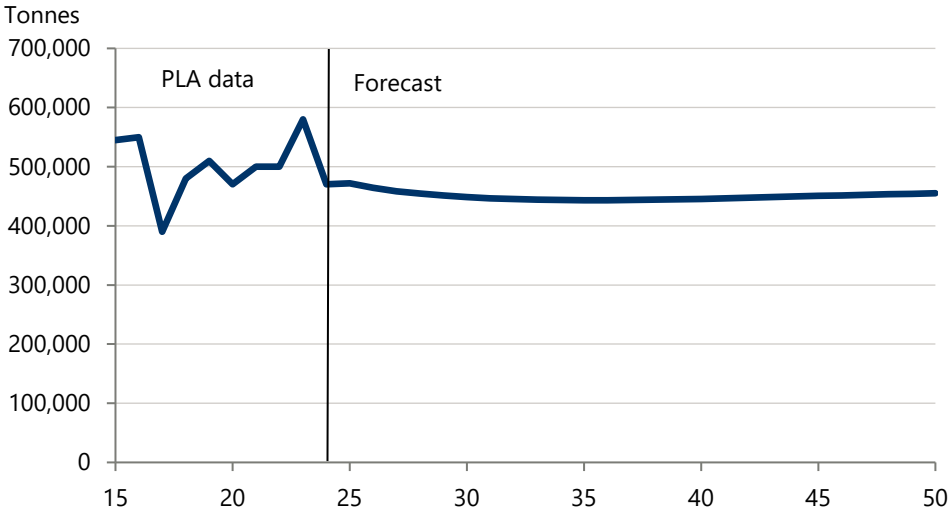
Source: Oxford Economics; PLA

The outlook for the volume of petroleum products handled by the safeguarded wharves will be impacted by the transition to net zero. Some sectors including aviation, maritime transport, and petrochemical industries are difficult to electrify. But the move to electric vehicles will mute demand from domestic and commercial vehicles.

3.3.5 Sugar

In 2024, 470,000 tonnes of sugar were handled by safeguarded wharves in London. This was imports of what is termed raw sugar derived from sugar cane. Our central projection forecasts this will decline to 455,000 tonnes by 2050 based on industrial demand (predominantly from food manufacturers). This is annual average decline (or CAGR) of 0.1% a year. Embodied in this forecast is the historical trend of slowly declining sugar consumption per head versus population growth.

Fig. 15. Central forecast of the tonnage of sugar handled by safeguarded wharves



Source: Oxford Economics; PLA

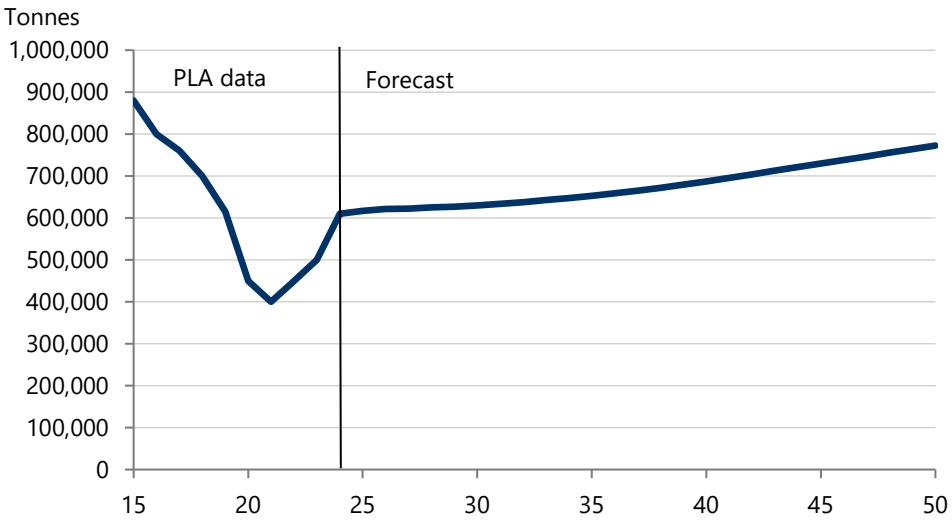
One driver we have not factored into the forecast is government policy on the scale of trade barriers and quotas for imports of sugar cane. When the UK was a member of the European Union there were significant trade barriers on imports of sugar cane to protect Europe's sugar beet farmers. After Brexit the government implemented an Autonomous Tariff Quota (ATQ) on raw cane sugar and charged the UK Global Tariff (UKGT) rate for refined raw cane sugar at £280 per tonne. After a review completed in November 2025, the government has decided to increase the ATQ volume for annual imports of raw cane sugar from 260,000 to 325,000 tonnes from 1 January 2026 to December 2033.[27] The government also opted to maintain the UKGT rate (£280 per tonne). Both are planned to be subject to periodic future reviews. This is likely to mean our forecasts are overly pessimistic in the short-term due to the 65,000 tonne increase in the quota. Future changes in government trade policy could impact the tonnage handled at safeguarded wharves on the Thames in either direction.

3.3.6 Vehicles and unitised

Our central forecasts project that the volume of vehicles and unitised goods will increase from 610,000 tonnes in 2024, to 772,000 tonnes by 2050 (Fig. 16). This is an annual average increase (or CAGR) of 0.9% a year. Oxford Economics' forecasts of new vehicle registrations in the UK between 2024 and 2050 range from an annual average growth of 0.4% (light vehicles) to 2.0% (heavy commercial vehicles) depending on the vehicle type. Registrations of new cars are predicted to grow by an annual average of 0.7%.

[27] Department of Business and Trade, 'Review of raw cane sugar ATQ and related considerations', 26 November 2025.

Fig. 16. Central forecast of the tonnage of vehicles and unitised goods handled by safeguarded wharves



Source: Oxford Economics; PLA

Vehicles are only handled by the Ford wharf at its Dagenham plant. The accuracy of the forecast will depend on the company's market share of sales and what its future plans are for the site. A deeper understanding of demand could not be established due to failure to secure an interview with Ford.

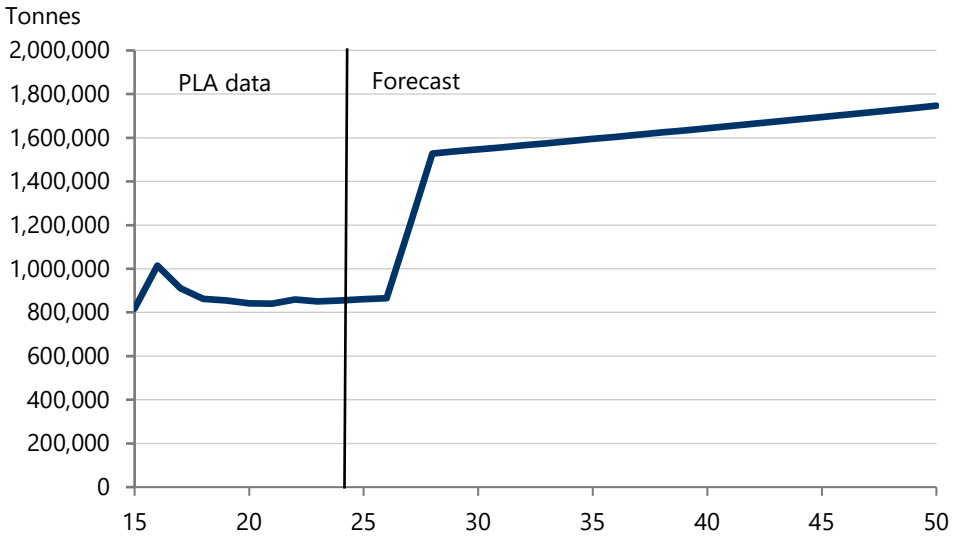
3.3.7 Waste

In 2024, safeguarded wharves handled 855,000 tonnes of waste. This was all destined for Riverside 1 waste facility at Belvedere in the London Borough of Bexley, where it is transformed into electricity rather than going to landfill.[28] In 2026, Cory (the operator) is due to open a second energy from waste processing facility called Riverside 2 adjacent to the original facility, which is expected to handle 650,000 tonnes of non-recyclable waste.[29] As discussed in Section 3.4, our central forecast assumes that by 2028, 550,000 tonnes of additional waste will be transported from Barking & Dagenham to the Bexley facility by the Thames. The remaining 100,000 tonnes will be handled by wharves in the City of London, Tower Hamlets and Wandsworth, using their existing capacity. After this significant change in capacity, our central forecast projects the tonnage of waste handled by the safeguarded wharves will increase to 1,749,000 tonnes in 2050 (Fig. 17).

[28] Cory, 'Riverside Resource Recovery Facility: Annual Performance Report 2025', 2025.

[29] Cory, 'Riverside 2', accessed June 2026.

Fig. 17. Central forecast of the tonnage of waste handled by safeguarded wharves



Source: Oxford Economics; Cory, PLA, Resource Futures

Other than the opening of Riverside 2, our central forecast is derived from the annual average growth rate (CAGR) of the household waste arisings projection from the Planning scenario (as shown on page 29 of the London Waste Infrastructure Capacity Study) of 0.6% a year.[30] Resources Futures report their projection for household waste is based on the latest London population growth forecasts developed by the GLA. A further adjustment is made to allow for the assumption that 90% of future population growth occurs within people living in flats, based on GLA planning forecasts. This factors in the different amounts of waste and recycling that are produced in flats compared to other property types. In using the waste arising forecasts we are assuming that there is no change in the share of household waste transported by water. We believe the central forecast is credible given Resource Futures analysis was commissioned to inform the Mayor's waste policies in the London Plan and Riverside 2 is nearing completion.

The London Waste Infrastructure Capacity Study also explores another scenario where less household waste is generated based on the Mayor of London's food waste reduction target and EU packaging reduction targets. If this comes true, the tonnage of waste arising to be transported by water would be less. The study also acknowledges another major driver of household waste arising could be climate change and the UK response to it, without going into great details as to its likely impact.

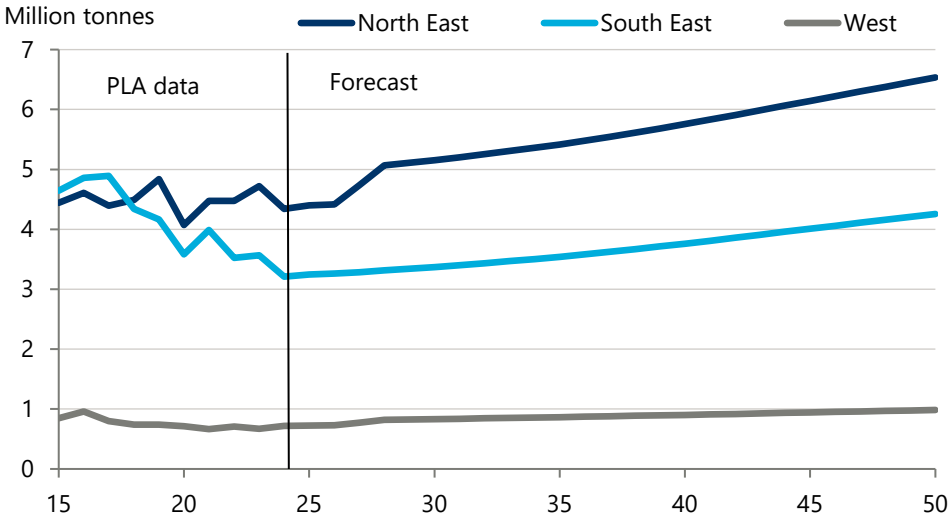
3.4 OUR CENTRAL FORECASTS FOR EACH REGION OF THE THAMES

Our central forecasts suggest that the cargo handled by wharves in the North East will grow more rapidly than the other two regions of the Thames (Fig. 18). The tonnage handled by wharves in the North East is projected to increase each year by an average of 1.6% (CAGR). Some of the impetus comes from will come from reactivation of Rippleway Wharf in Barking & Dagenham by Cory to

[30] Resource Futures, 'London Waste Infrastructure Capacity Study', December 2025.

transport 550,000 tonnes of waste to its new Riverside 2 plant.[31,32] The volumes that pass through the wharves in the West and South East are projected to increase by an annual average of 1.2% and 1.1% a year, respectively.

Fig. 18. Central forecast of the tonnage handled by each region of the Thames' safeguarded wharves



Source: Oxford Economics; PLA

3.5 UPPER AND LOWER SCENARIO FORECASTS

Fig. 19 shows the lower, central and upper case forecasts for each commodity handled by the safeguarded wharves in 2050. The lower and upper case forecasts are symmetric around the central projection. The difference between both the lower and upper case forecasts and the central one reflects the volatility of the tonnage of the commodity handled by the safeguarded wharves between 2015 and 2024. The greater the volatility over that decade, the larger the difference between the central and other two forecasts.

[31] According to the PLA data, Rippleway which was reactivated by Cory in 2024 handled 5,000 tonnes of cargo that year.

[32] We have assumed the remaining 100,000 tonnes of waste will be transported from Cory's other wharves in proportion with the existing amount of waste they handled in 2024. In 2024, Cory's wharves handled the following amount of waste on its way to Middleton Wharf in Bexley: Cringle Dock (250,000 tonnes) and Smugglers Way (200,000 tonnes) which are both in Wandsworth, Northumberland (170,000 tonnes) in Tower Hamlets, and Walbrook (60,000 tonnes) in the City of London.

Fig. 19. Lower, central and upper case forecasts for volume of cargo handled by London's safeguarded wharves in 2050, by commodity

	Lower case forecast	Central forecast	Upper case forecast
Construction Materials	6,057,000	7,109,000	8,161,000
Metals	9,000	130,000	251,000
Vehicles and Unitised	441,000	772,000	1,103,000
Petroleum Products & Chemicals	448,000	775,000	1,102,000
Waste	1,635,000	1,747,000	1,859,000
Agricultural Bulks	509,000	788,000	1,067,000
Sugar	349,000	455,000	561,000
Total	**9,448,000**	**11,776,000**	**14,104,000**

Source: Oxford Economics

The lower, central and upper case forecasts for each of the regions are shown in Fig. 20. The lower and upper case forecasts are furthest away from the central one in the South East at 1.2 million tonnes. This reflects the greater volatility of tonnage handled over the past decade. In turn, this reflects a large volume of cargo handled, but dependence on a smaller number of commodities than in the North East.

In practice, the accuracy of each of the three forecasts will depend on how the industries driving demand for the individual commodities evolve over time. Because these industries differ across commodities, it is unlikely that all commodities will simultaneously experience the boom conditions underpinning the upper-case forecasts. Similarly, it is unlikely that all commodities will concurrently be subject to the downturn conditions reflected in the lower-case forecasts. As a result, the aggregate upper- and lower-case forecasts should be interpreted as representing extreme scenarios, with actual outcomes more likely to lie between these bounds.

Fig. 20. Lower, central and upper case forecasts for volume of cargo handled by London's safeguarded wharves in 2050, by region

	Lower case	Central forecast	Upper case
North East	6,114,000	6,535,000	6,956,000
South East	3,056,000	4,257,000	5,458,000
West	805,000	985,000	1,165,000

Source: Oxford Economics

The potential use of the safeguarded wharves for light freight or general cargo would add to demand. At the time of writing, only one safeguarded wharf (Orchard Wharf) has planning permission to be redeveloped to handle light freight to be used by Thames Clippers. If the building works go ahead this is planned to become operational in 2029Q2. Standard Wharf in Bexley is the only safeguarded wharf that is able to handle general cargo. So while the growth of these two cargo types is an upside risk and may play an important role in diversification or as part of reactivation proposals, we do not judge it would have a substantial impact because only two

safeguarded wharves are currently involved or planned to handle this type of freight, and other facilities such as riverboat piers may also be usable as part of such operations.

3.6 OVERVIEW AND IMPLICATIONS

Overall, the aggregated central forecast is considered to be reasonably plausible, with the low-high range illustrating the uncertainty that must be accounted for in planning given the opportunity costs of having both surplus capacity and under-provision.

4. FUTURE CAPACITY OF THE SAFEGUARDED WHARVES

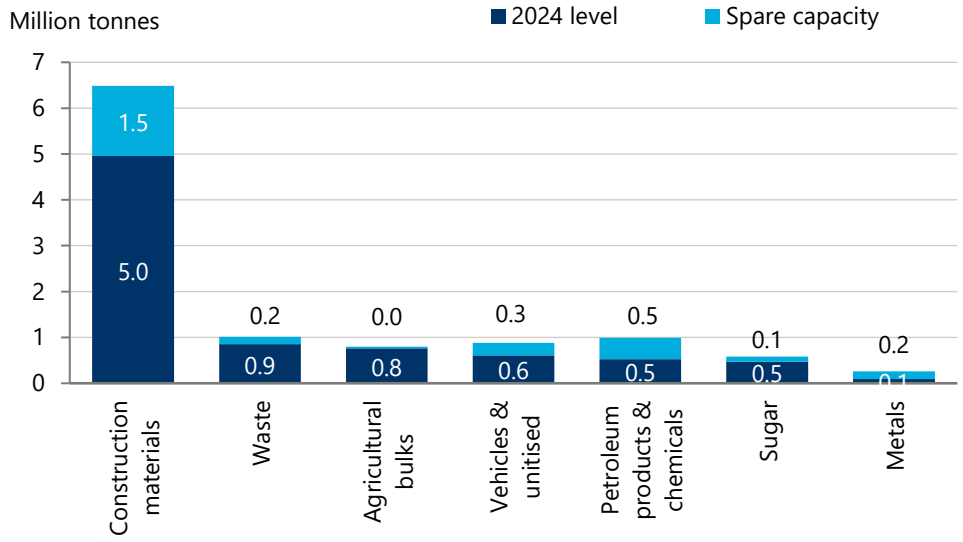
This chapter presents a simple measure of spare capacity for the safeguarded wharves. In the next, we contrast, how this compares to the demand forecasts, to see if and where any capacity constraints will bite.

4.1 SPARE CAPACITY BY COMMODITY TYPE IN 2024

It is more difficult to estimate the capacity of safeguarded wharves out to 2050 than demand. This is because many of the decisions whether to invest in a wharf to boost capacity or divest parts or all of it have yet to be taken. Ocean Shipping Consultants (2016) take two approaches. The simplest is to look at the peak amount of cargo the wharf has handled over the past decade. They also relied on the estimates from a 2011 study by URS/Scott Wilson for the Safeguarded Wharves Review. We opt for the former, for its simplicity.

In absolute terms, the greatest amount of spare capacity in 2024 was in construction materials at 1.5 million tonnes, likely reflecting the continued construction downturn in London (Fig. 21). This was followed by 0.5 million tonnes for petroleum products & chemicals, and 0.3 million tonnes for vehicles and unitised products. At the other end of the spectrum, the smallest amount of spare capacity was for agricultural bulks at 40,000 tonnes.

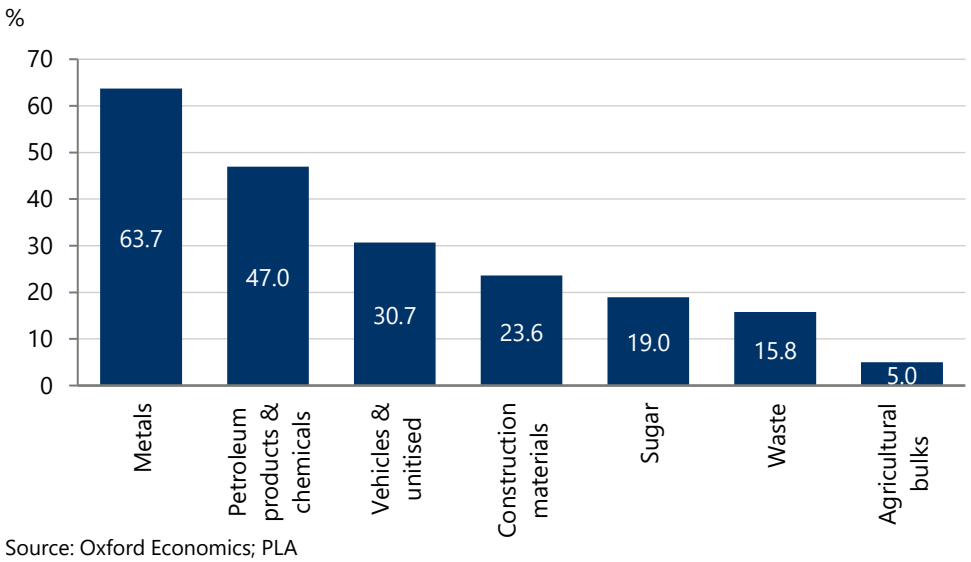
Fig. 21. Level of spare capacity by commodity type in 2024



Source: Oxford Economics; PLA

A more useful measure to identify where the pressure points are likely to come out to 2050 is to look at the spare capacity relative to tonnage handled by the safeguarded wharves in 2024. This suggests that there was only 5% spare capacity for handling agriculture bulks (Fig. 22). Waste (15.8%) and sugar (19.0%) rank second and third, in terms of the scale of spare capacity they had in 2024. At the other extreme, there is considerable room for expansion in metal volumes without there being any capacity constraints.

Fig. 22. Percentage of spare capacity at safeguarded wharves in 2024 by commodity type



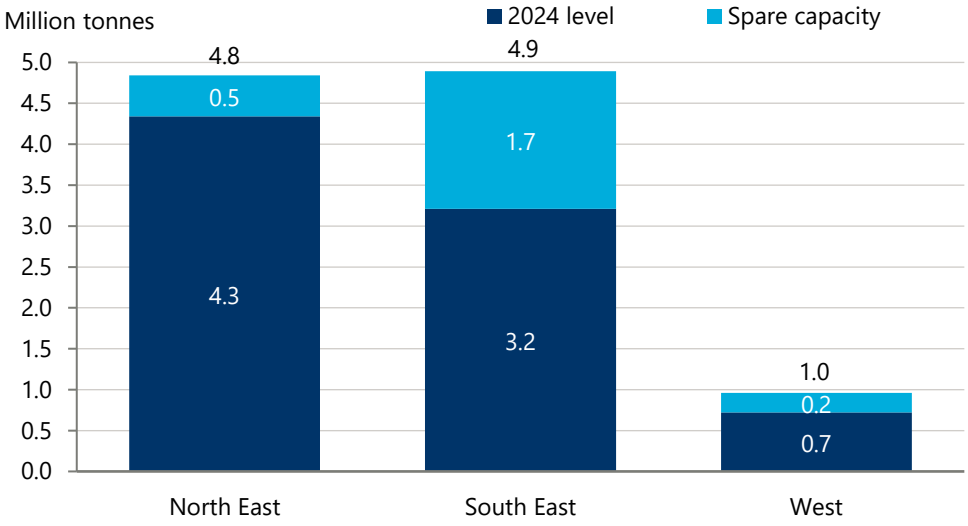
Source: Oxford Economics; PLA

4.2 SPARE CAPACITY BY REGION OF THE THAMES

The location of any spare capacity is also important, as customers will typically want to minimise transport costs and time. This typically involves the cargo travelling the shortest journey or shortest journey time from the wharf to their place of use.

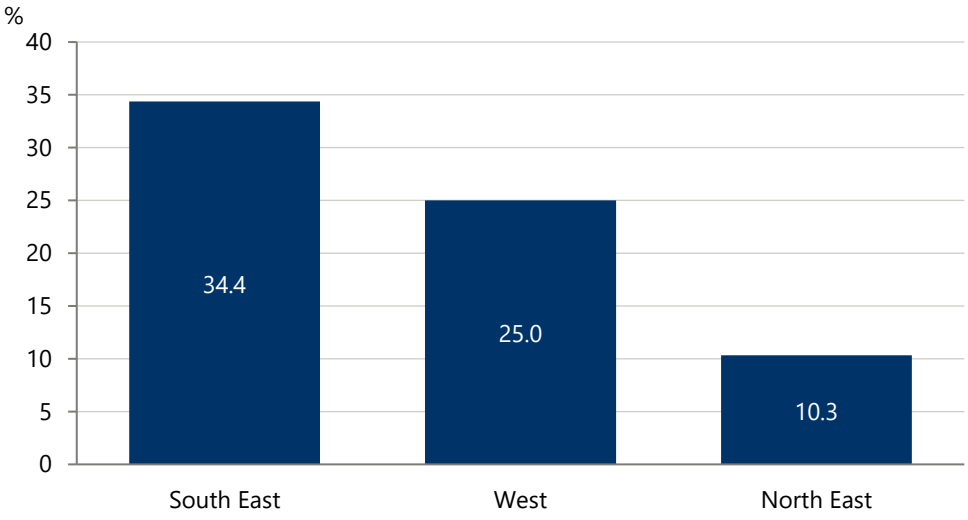
In 2024, the largest amount of spare capacity was in the South East region of the Thames. This equated to 1.7 million tonnes (Fig. 23) or 34.4% (Fig. 24) of the peak volume of cargo handled over the past decade by the wharves in that region. In absolute terms the North East ranks second at 0.5 million tonnes (or 10.3%) and the West third at 0.2 million tonnes (or 25.0%).

Fig. 23. Level of spare capacity by region of the Thames in 2024



Source: Oxford Economics; PLA

Fig. 24. Percentage of spare capacity at safeguarded wharves in 2024 by region



Source: Oxford Economics; PLA

4.3 KNOWN CHANGES IN CAPACITY

There are several known changes in capacity not reflected in the 2024 figures.

4.3.1 Riverside 2 related

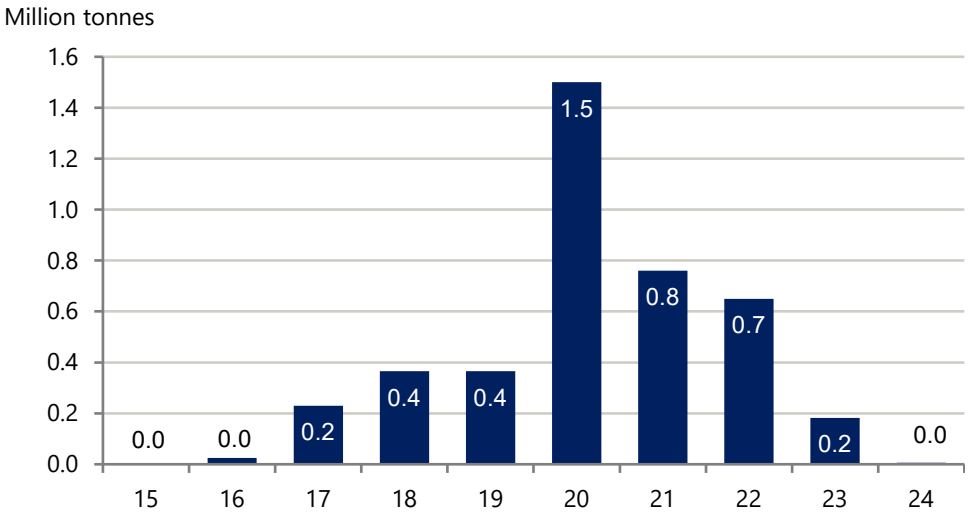
Construction work at Rippleway Wharf in Barking & Dagenham to enable it to handle 550,000 tonnes of waste to go to the Riverside 2 waste facility at Bexley is due to finish in late 2026. The other 100,000 tonnes are to be loaded at the existing wharves that handle waste with no changes in their capacity.

4.3.2 Release from Tideway Tunnel works needs

Four safeguarded wharves (Cremorne, Hurlingham, Kirtling, and Middle) have been closed due to the construction of the Tideway Tunnel. All are located in the West region and previously dealt with construction materials. At peak, in 2020, they handled 1.5 million tonnes of cargo (Fig. 25).

Advice from the PLA suggests that all four are likely to be reactivated at some point now construction of the tunnel is complete. One is likely to continue to handle construction materials. Another is likely to handle construction materials or waste. The other two could handle a variety of cargoes, including light freight.

Fig. 25. Tonnage previous handled by the four safeguarded wharves closed by the construction of the Tideway Tunnel



Source: Oxford Economics; PLA

Given the uncertainty over the timing of reactivation and what cargoes they will be handling, we have not factored their potential return to cargo handling into our calculations. But it should be stressed capacity in the West region will be boosted in the future by their reactivation. None of the safeguarded wharves in the other two regions were closed by the construction of the Tideway Tunnel.

4.3.3 Royal Docks consolidation

Other wharves have been closed due to redevelopment efforts, such as Thames Wharf due to the build of the Silvertown Tunnel. This does not form part of the analysis as it lost its safeguarded status, and replacement consolidated capacity at Royal Primrose has only recently become operational.

5. COMPARISON OF DEMAND AND CAPACITY FORECASTS

In this chapter we compare the forecasts of future demand for each commodity type, with the total capacity of London safeguarded wharves to handle them.

5.1 RESULTS BY COMMODITY TYPE

Our central forecasts suggest that in total there will be a small shortage (115,000 tonnes) of capacity in London's safeguarded wharves in 2050 (Fig. 26). However, this is magnified in respect of particular commodities, with a potential 10% and 5% shortfall in capacity available to handle construction materials and waste, respectively. Our central forecast projects demand will exceed capacity for construction materials by 622,000 tonnes and 82,000 tonnes for waste in 2050. For agricultural bulks the amount of spare capacity is small at 2%. For the rest of the commodities, there is a reasonable safety margin. However, it could be envisaged that some additional capacity will be secured through efficiency savings – for instance, greater intensity of use – and re-allocation between commodities where context allows. It appears the Riverside 2 facility will include shared, presumably more intense use of existing facilities as well as reactivating a wharf for instance.

Fig. 26. Forecasts for market-led tonnage handled by safeguarded wharves in 2050 and their capacity by commodity type

Commodity type	Cargo handled in 2024	Forecast for demand in 2050	Capacity in 2050	Spare capacity (+) or shortage of capacity (-)	Percentage surplus or deficit in capacity
Agricultural bulks	760,000	788,000	800,000	12,000	2%
Construction materials	4,957,000	7,109,000	6,487,000	-622,000	-10%
Metals	94,000	130,000	259,000	129,000	50%
Petroleum products & chemicals	525,000	775,000	990,000	215,000	22%
Sugar	470,000	455,000	580,000	125,000	22%
Vehicles & unitised	610,000	772,000	880,000	108,000	12%
Waste	855,000	1,747,000	1,665,000	-82,000	-5%
Total	**8,271,000**	**11,776,000**	**11,661,000**	**-115,000**	**-1%**

Source: Oxford Economics

5.2 RESULTS BY REGION OF THE THAMES

Our central forecasts suggest there may also be some mismatch spatially between capacity and demand (Fig. 27). If accurate, the projections suggest there will be 24% shortage of capacity in the North East in 2050, while there will be surplus capacity in the South East and West. The reactivation of the four wharves closed in the West due to the Tideway Tunnel will increase the spare capacity in this region. However, their capacity is also not reflected in the baseline figures as they were not in operation in 2024. New capacity has recently come on stream at Royal Primrose Wharf in the North East, albeit compensating for the loss of Thames Wharf several years previously which was also not reflected in the 2024 baseline figures.

Equally, the South East and North East region is now better connected by road due to the Silvertown Tunnel - as well as in many cases being close anyway when only the river-based distance is concerned, so capacity between regions may be more substitutable. Indeed, the new Riverside 2 plant in the South East is using a reactivated wharf in the North East which is very close to it when wharf to wharf river based transport is considered. As such these regional results should not be applied mechanistically.

Fig. 27. Forecasts for market-led tonnage handled by safeguarded wharves in 2050 and their capacity by region of the Thames

Region of the Thames	Cargo handled in 2024	Forecast for demand in 2050	Capacity	Spare capacity (+) or shortage of capacity (-)	Percentage surplus or deficit in capacity
North East	4,341,000	6,535,000	5,279,000	-1,256,000	-24%
South East	3,210,000	4,257,000	5,335,000	1,078,000	20%
West	720,000	985,000	1,047,000	62,000	6%
Total	**8,271,000**	**11,776,000**	**11,661,000**	**-115,000**	**-1%**

Source: Oxford Economics

5.3 COMPARISON TO UPPER AND LOWER CASE FORECASTS

For metals and sugar, capacity is sufficient to handle the tonnage projected to occur in all three sets of forecasts for 2050 (Fig. 28). For agricultural bulks, petroleum products and chemicals, and vehicles and unitised, the upper case forecast exceeds the projected capacity. For construction materials and waste both the central and upper case forecasts exceed the projected capacity. At the other extreme, there will be spare capacity if the lower case forecasts become a reality in 2050 across all commodities.

Fig. 28. Lower, central, and upper case forecasts for each commodity in 2050 relative to capacity

	Lower case	Central forecast	Upper case	Capacity
Agricultural Bulks	509,000	788,000	1,067,000	800,000
Construction Materials	6,057,000	7,109,000	8,161,000	6,487,000
Metals	9,000	130,000	251,000	259,000
Petroleum Products & Chemicals	448,000	775,000	1,102,000	990,000
Sugar	349,000	455,000	561,000	580,000
Vehicles and Unitised	441,000	772,000	1,103,000	880,000
Waste	1,635,000	1,747,000	1,859,000	1,665,000
Total	**9,448,000**	**11,776,000**	**14,104,000**	**11,661,000**

Source: Oxford Economics

All three forecasts (lower, central and upper) suggest there will be capacity constraints in the North East region in 2050 (Fig. 29). For the South East and West regions, capacity constraints only occur if the upper case forecast in aggregate becomes the reality in 2050. Conversely, for these two regions the lower case forecast in aggregate would lead to considerable spare capacity in 2050.

Fig. 29. Lower, central and upper case forecasts for each region in 2050 relative to capacity

	Lower case		Central forecast		Upper case		Capacity
	Tonnes	Percentage surplus or deficit in capacity	Tonnes	Percentage surplus or deficit in capacity	Tonnes	Percentage surplus or deficit in capacity	Tonnes
North East	6,114,000	-16%	6,535,000	-24%	6,956,000	-32%	5,279,000
South East	3,056,000	43%	4,257,000	20%	5,458,000	-2%	5,335,000
West	805,000	23%	985,000	6%	1,165,000	-11%	1,047,000

Source: Oxford Economics

5.4 OVERVIEW AND IMPLICATIONS

Overall, given the central forecast is reasonably plausible, this suggests greatest attention should be paid to increasing capacity that serves the north east market area, particularly where it may affect the ability of the construction sector to step up delivery in line with wider growth ambitions. This may be through a variety of routes, including intensification and cross-river transfer.

6. CONCLUSIONS

This report forecasts the tonnage handled by London's safeguarded wharves in 2050. The forecasts are based on demand for each of the commodities from customer industries located within London to reflect the wharves hinterlands. In the absence of comprehensive knowledge about potential investment in the wharves capacity between now and 2050 (except Orchard and Rippleway Wharves and recent investment at Royal Primrose), the demand forecasts are compared to the high point of that commodity volume handled as a measure of capacity.

All forecasts out to 2050 should come with a health warning. This is particularly the case for safeguarded wharves as the recent history has been impacted by forced closures for the construction of the Tideway and Silvertown Tunnels, and related consolidation. As a result, the forecasts are subject to considerable degree of uncertainty. It may therefore be unwise to make any long-term decisions about future capacity at this time, allowing for re-activated, new consolidated, and re-available capacity, as well as the implications of new connectivity to become established.

With that health warning to the fore, our central forecasts, regarded to be reasonably plausible, suggest that in aggregate for all commodities (including waste) there could be a shortage of capacity of 115,000 tonnes at London's safeguarded wharves, or 1% of total in 2050. At the aggregate level this constraint will have a minor impact on the ambition to increase the proportion of freight moved on London's waterways in later years.

More problematic is the issue of a potential shortage of capacity for construction materials given London's growth ambitions. Our central forecast projects demand will exceed capacity for this commodity by 622,000 tonnes or 10%. This suggests there is a need for an expansion of wharf capacity to move construction materials by water. Either existing wharves need to be converted to handle construction materials or new wharf capacity built or secured through efficiency enhancements.

The forecasts also suggest there will also be capacity constraints for waste and the amount of spare capacity for agricultural bulks is projected to be very small. If the number of safeguarded wharves is to be changed, wharves handling these two commodities should not be altered. For the rest of the commodities, there is a reasonable safety margin, so changes in cargo handled could be made here.

Regionally, there may be some spatial mismatch between supply and projected future demand. However, this is again affected by data limitations reflecting recent unavailability or new availability of wharves, and complexities including changing inter-regional connections and a different category of vessel being needed in the West. As such any consideration of potential responses, especially any consideration of release, may need to wait for new patterns of availability and connectivity to be reflected in the data. However, it would also be sensible to support any efforts to improve wharf operational efficiency, particularly in the North East. This should not preclude consideration of wharf consolidation where it maintains capacity and spatial functionality as has been achieved in the North East in the Royal Docks.

7. APPENDIX 1: THE FUTURE MAJOR CONSTRUCTION PROJECTS AND DEVELOPMENT PLANS FROM THE LONDON LOCAL AGGREGATES ASSESSMENT (LLAA)

The London Local Aggregates Assessment contains a section on future major construction projects and development plans, given construction materials consisted of 60% of the tonnage handled by the safeguarded wharves, GLA staff have suggested we reproduce that here as it sets out some of the factors that will determine the accuracy of the forecasts out to 2050. It has been quoted directly from the LLAA. [The London Plan being referred to is the 2021 plan].

7.1 HOUSING AND REDEVELOPMENT

The London Plan's housing target (522,870 homes over 10 years) remains a central driver. While the annual completion rate so far has been below target (about 36k in 2021/22), there is political and market pressure to increase it. If initiatives like relaxation of planning rules or new investment in affordable housing take effect, construction could surge. Large housing-led schemes to watch include: Thamesmead Waterfront (thousands of homes, needs new infrastructure), Old Oak Park Royal (25,500 homes, significant commercial space - aggregate already being used for enabling works including HS2 integration), Elephant & Castle Town Centre (regeneration ongoing), Vauxhall Nine Elms (huge volume of high-rise construction continuing, including the new US Embassy area developments), and numerous estate renewal projects across boroughs (which also generate a lot of demolition waste that will then be recycled, feeding supply of recycled aggregate, while also needing new materials for rebuild).

7.2 MAJOR DEVELOPMENTS AND REGENERATION

London has multiple large-scale development areas known as Opportunity Areas (OAs) - e.g. Old Oak/Park Royal, Thamesmead, the Royal Docks, Canada Water, etc. These involve constructing entire new districts, which will require large quantities of aggregate for buildings and new infrastructure. Some specific examples: the Barking Riverside development (10,000+ homes) - requires new roads, rail links (the Overground extension just opened), all needing aggregates. The Greenwich Peninsula masterplan (housing, commercial) continues into late 2020s. The Isle of Dogs and Canada Water high-rise clusters also drive concrete usage. The London Plan identifies many OAs which cumulatively target hundreds of thousands of new homes. Achieving even a portion of those plans will result in high levels of aggregate consumption.

The London Plan promotes tall buildings as a means of optimising land use and accommodating growth, particularly in areas with good public transport access and regeneration potential. Policy D9 of the London Plan (2021) supports tall buildings where they are part of a plan-led approach,

contribute positively to the skyline and public realm, and are located in designated areas identified in borough development plans as suitable for tall buildings.

7.3 TRANSPORTATION PROJECTS

Beyond the currently active Tideway and Silvertown, future projects in planning include:

- High Speed 2 (HS2), while primarily outside London, includes major terminus works at Old Oak Common and a tunnel portal at West Ruislip in Hillingdon. HS2's London works will use enormous quantities of concrete and hence aggregates (HS2 has estimated 10 Mt of aggregate moved by rail for the whole route, with a portion of that destined for London sites).
- Lower Thames Crossing (a major new road tunnel east of London): While just outside Greater London, its construction (if it proceeds around 2025-30) would draw on London's wharves and depots for materials and potentially spoil removal.
- Crossrail 2 (a north-south Crossrail line): This is currently paused, but if revived in the 2030s, that would be another hugely significant tunnelling project that would consume millions of tonnes of aggregate for concrete.
- The Bakerloo Line Extension (to Lewisham) is safeguarded and if funded would also require tunnel segments and station concrete.
- Numerous smaller transport schemes (DLR extensions, London Overground upgrades, cycle highway and bus transit projects) cumulatively add to demand (though less aggregate-intensive individually).
- The proposed DLR extension from Beckton Riverside to Thamesmead is a major infrastructure project aimed at improving cross-river connectivity in East London. Led by Transport for London and the GLA, the extension would cross the River Thames and provide a direct DLR link to Thamesmead for the first time. The project is currently in the feasibility and funding stage, with a preferred route and station locations under consultation.
- Airport expansion is also in the offing: While Heathrow's third runway is uncertain, if it ever went ahead, the associated construction (runway, terminals) would use vast amounts of aggregate (Heathrow's expansion plans had estimated needing over 3 Mt of aggregate). Even without a new runway, Heathrow and other airports have ongoing development (e.g. new taxiways, expansions) that require materials - often sourced via local depots like West Drayton rail aggregate depot.

7.4 UTILITIES AND RESILIENCE INFRASTRUCTURE

London is investing in resilience infrastructure, for example, new Thames flood defences and upgrades (the Thames Barrier eventual replacement or enhancement, new tidal walls by 2030s) will need large aggregates for concrete and embankments. The power grid expansions (new substations, like the London Power Tunnels project National Grid is doing) involve tunnelling and concrete works. Water infrastructure beyond the Thames Tideway tunnel (like upgrades to water treatment works, new water mains tunnels) are also planned (Thames Water's long-term plan suggests new raw water transfer tunnels to north London post-2030). These involve concrete segments requiring large quantities of aggregate.

7.5 MAJOR NON-RESIDENTIAL BUILDINGS

A number of skyscrapers and commercial projects in the City and Canary Wharf are under construction or due to start (e.g. the Bishopsgate cluster). High-rise buildings consume large quantities of concrete (and hence aggregates). For example, 1 Bishopsgate Plaza, 22 Bishopsgate, etc., each used tens of thousands of cubic metres of concrete. The pipeline of such projects will keep demand for high specification concrete (needing quality aggregates and sand) steady, even if slightly cyclical with economic conditions.

Between them, the City of London and Tower Hamlets are planning for over 1.5 million square metres of additional office floorspace by the mid-2030s, rising to nearly 2 million m^2 by 2040. In the City of London, the adopted and emerging Local Plans forecast at least 1.2 million m^2 of new office space between 2021 and 2040, with around 900,000 m2 expected to be delivered by 2031 and 1.1 million m^2 by the mid-2030s. In Tower Hamlets, the current and draft plans anticipate 283,000 m^2 of new office demand from 2023 to 2038, with an identified capacity of around 212,500 sqm on new development sites, concentrated in Canary Wharf and the City Fringe. Notably, Tower Hamlets' existing planning permissions already exceed projected demand, offering significant latent capacity.

7.6 PUBLIC REALM AND REDEVELOPMENT PROJECTS

Programmes like pedestrianisation of city areas, new parks, etc. also use aggregates (for paving, sub-base). The City of London's ongoing public realm works, or the Victoria Embankment strengthening, are examples albeit smaller scale.

7.7 MAINTENANCE AND RENEWAL

Ongoing maintenance of London's existing infrastructure (road resurfacing, building renovations, water and energy infrastructure upgrades) should not be overlooked. For example, road maintenance uses large quantities of asphalt (aggregate + bitumen). Replacement of the road surfaces roughly follows cycles that require thousands of tonnes each year across boroughs. Network Rail's track renewals around London generate steady demand for ballast. These activities ensure an ongoing baseline demand regardless of large projects.

Taken together, these planned activities suggest that demand in London will remain high and possibly grow. There is no indication of a downturn in need; even if growth in the broader economy is sluggish, public sector infrastructure and housing (especially to meet net-zero goals, infrastructure renewal) are likely to continue driving material consumption.

London's LAA must ensure the supply side can cater to these. A risk scenario to consider: if, say, Crossrail 2 and a housing boom coincided, could London's supply system deliver, e.g. 12 Mt in a year instead of 9-10 Mt? Such an increase might strain current wharf and rail capacity but some flexibility exists: more material could come via road from closer counties if needed, albeit this is a less sustainable option. And/or temporary aggregate depots (like construction consolidation centres) could be set up for projects (HS2 did something similar, with logistics hubs). Planning authorities should consider how they would be able to positively respond to any necessary

temporary increases in throughput (e.g. extended hours at wharves or depots under controlled conditions during peak construction periods).

In the event of shortages, European sources could augment supplies (e.g. aggregate import terminals bringing in material by bulk ship from further afield which are highly unlikely in the short to long term, but conceptually possible). European aggregates (from Norway, Belgium) have occasionally been imported to the South East and while uncertainties remain it currently seems the post-Brexit trade position is more likely to open than close overseas supply options.

7.8 CLIMATE CHANGE AND DECARBONISATION

Climate change and decarbonisation are also affecting demand. Future construction might use less concrete if low-carbon methods are adopted (timber structures, recycled materials, etc.). But given the large backlog in housing and infrastructure, any 'per-building' reduction might be offset by the number of additional buildings needed. However, long-term (beyond 2040), as the economy possibly moves to more circular models, aggregate demand could stabilise or decline. In the timeframe of this LAA (next 5-15 years), no major drop is foreseen, indeed, the current country wide growth agenda, likely means aggregate demand will be maintained at a high level.

7.9 SUMMARY

London will continue to require in the order of 9-10+ million tonnes of aggregate annually for the foreseeable future, with peaks potentially above that if major projects proceed concurrently. This demand will be distributed across all aggregate types (with about 20-30% possibly met by recycled materials assuming policy success).

Global headquarters
Oxford Economics Ltd
60 St Aldates
Oxford, OX1 1ST
UK
Tel: +44 (0)1865 268900

London
4 Millbank
London, SW1P 3JA
UK
Tel: +44 (0)203 910 8000

Frankfurt
Marienstr. 15
60329 Frankfurt am Main
Germany
Tel: +49 69 96 758 658

New York
5 Hanover Square, 8th Floor
New York, NY 10004
USA
Tel: +1 (646) 786 1879

Singapore
6 Battery Road
#38-05
Singapore 049909
Tel: +65 6850 0110

Europe, Middle East and Africa

Oxford
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Americas

New York
Philadelphia
Boston
Chicago
Los Angeles
Toronto
Mexico City

Asia Pacific

Singapore
Hong Kong
Tokyo
Sydney

Email:
mailbox@oxfordeconomics.com

Website:
www.oxfordeconomics.com

Further contact details:
www.oxfordeconomics.com/about-us/worldwide-offices