



ENVIRONMENTAL REPORT

THE THAMES VISION: “THE RIVER THAMES THE CLEANEST SINCE THE INDUSTRIAL REVOLUTION, WITH IMPROVED HABITATS”

2020

ABOUT THE PLA

The PLA are the Custodians of the Tidal Thames, from Teddington to the North Sea. As a Trust Port, we hold the Thames in trust for future generations. With no shareholders, we operate for the benefit of our stakeholders.

We work to ensure navigational safety along the tidal Thames, sharing our marine, environmental, planning and other expertise to promote use of the river and safeguard its unique marine environment.

The tidal Thames is home to the UK's biggest port by tonnage of goods handled and busiest waterway for passengers and freight.

Stakeholders' ambitions are set out in the Thames Vision.

The [Thames Vision](#) is a 20-year development framework for the river, created with stakeholders over 18 months, from early 2015 to mid-2016. Across six goals, the Vision targets greater river use, alongside an improving environment. The Vision is being delivered in partnership by the PLA and stakeholders; key elements of the Vision are reflected in the London Plan and the Mayor of London's environment and transport strategies. The Environment and Heritage goal is to see **"the river the cleanest since the Industrial Revolution, with improved habitats and awareness of heritage."**

The Thames Vision is being updated in 2021, with a longer time horizon to 2050, integrating

the transition to lower resource and emissions, and climate change response.

The PLA Strategy is to support the Vision ambitions.

To deliver the Vision, the [PLA Strategy](#) is centred on key themes:

- **PROTECT** – targeting Zero Harm and improved sustainability
- **IMPROVE** – running efficient operations and investing to support growing river use
- **PROMOTE** – leading the Thames Vision to unlock the potential of the Thames

PLA Environment Mission Statement

The [Mission Statement](#) sets out the key objectives to achieve our environmental goals.

PLA policies drive the PLA's activities.

To deliver corporate environmental improvements we have an Environment Policy, which has a target for carbon emission reduction, and an Energy Policy, which targets a reduction in energy consumption.



OVERVIEW

2020 was overshadowed by the COVID-19 pandemic and the changes that it forced to the way we live and work, having direct impacts on PLA activities and life on the river. Some of our planned environmental activities had to be postponed, but much work continued. This report outlines the actions and achievements during the calendar year 2020.

As with our previous reports in 2018 and 2019, this report is collated into three main themes of Cleaning the River, Resource Management and Greening the River, with links to further information on other pages of our website where appropriate. These include plans and actions relating directly to our operations, as well as our external facing role to improve the wider Thames environment, using our powers as a regulator, investor and advocate. Key environmental statistics are contained within our Annual Report & Accounts which can be found on our [website](#).

Key achievements in 2020

- Development of a Board-approved Net Zero Strategy for the PLA to achieve Net Zero by 2040, or earlier.
- Reviewed and updated the [Air Quality Strategy](#) for the tidal Thames. To reflect the requirements within the DfT guidance, the updated strategy covers our own operations more explicitly, includes action plans from major terminals and revises the emissions reduction targets.
- Published a summary of the analysis of results from the air quality monitoring stations at Greenwich.
- Established the [Thames Green Scheme](#), an environmental performance indicator scheme for inland shipping.
- Submitted the third Climate Change Adaptation Report to Defra, which included a review of the latest climate projections, update of the climate change risk assessment, and progress on adaptation and mitigation actions.
- Launched the [Cleaning the Thames](#) website to increase participation and create a streamlined approval process.
- Developed habitat enhancement plans for the PLA estate.
- Completed refurbishing our main Gravesend office to improve working condition and reduce energy consumption. New solar panels installed on the roof of our main Gravesend office began generating electricity in August.

- Set up a new Staff Committee to drive engagement and improve environmental performance from staff.
- Convening an annual [Environment Conference](#) to report on environmental achievements, which, in 2020, explored how the Thames could achieve Net Zero.
- Consenting to the Thames Tideway Tunnel.
- Continuing to [Work in Partnership](#) with regulators and our stakeholders to deliver the goals of the Thames Vision.

Ongoing Commitments and Future Plans

Many of our future plans are set out in our published Strategies (Air Quality; Litter) but on a broader note we also plan to:

- Work with partners to drive a Green Recovery post-COVID-19.
- Drive the actions from our Net Zero PLA project.
- Refresh the Thames Vision in 2021 with stakeholders and help to develop a Net Zero Port.
- Continue to work with stakeholders to minimise the impacts of climate change.
- Reboot the Thames Litter Forum, ahead of the Thames Vision refresh.
- Commence and complete the restoration of saltmarsh at West Thurrock Site of Special Scientific Interest.
- Review and refresh the environment pages on the PLA website.
- Support delivery of the Thames Tideway Tunnel which will improve water quality of the river.
- Work towards our contributions to the United Nations Sustainable Development Goals (UN SDGs).
- Continue to work with stakeholders to facilitate the provision of appropriate planning, infrastructure and alternative fuels in order to be effective in the port's transition to decarbonisation.

Overview
Page 3

Cleaning
the River – Air
and Water
Quality
Page 4

Resource
Management
Page 7

Greening
the River –
Biodiversity
Page 10

UN Sustainable Development Goals covered by this area of work



CLEANING THE RIVER — AIR AND WATER QUALITY

In 2020, the [Air Quality Strategy](#) for the tidal Thames was updated to reflect the rapid evolution in regulation and the significant progress made on many of the initial actions in the first UK port air quality strategy published in 2018. Reports have also been published to provide updates on some of the actions, the Strategy has been developed, providing goals for the wider Port, and for the PLA, with updated and more demanding targets to achieve.

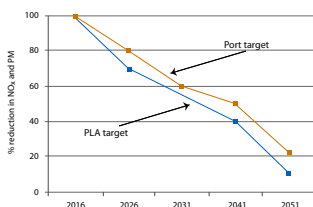
The Green Tariff for ships calling in the commercial port, has been developed since its introduction in 2017 to offer greater incentives for the greenest vessels, and a recognition scheme has been launched for inland vessels and operators, known as the Thames Green Scheme.

Our work to remove litter from the river continued, although public litter clearance events were limited due to the lockdowns and social-distancing restrictions linked to COVID-19. A new Cleaning the Thames website, to allow better data collection and easier permissions for group litter picking, was launched.

Air Quality Strategy

Baseline/Target

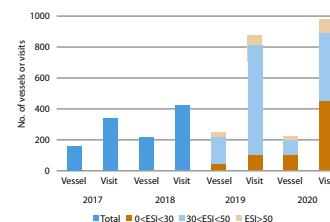
The [Air Quality Strategy](#) was revised in 2020 and sets challenging targets for both the PLA and the Port to reduce nitrogen oxides (NOx) and particulate matter (PM) against the 2016 baseline. Initial targets are to achieve a 20% (Port) and 30% (PLA) reduction by 2026 and progress will be determined by repeating the Emissions Inventory in 2022.



Air Quality Strategy

Baseline/Target

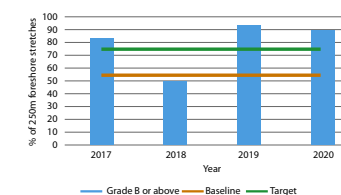
In 2017, London was the first UK port to introduce a [Green Tariff](#), a port charges discount scheme for international ships. To qualify, vessels must have an Environmental Shipping Index (ESI) score of 30 or above for a discount on conservancy charges.



Water Quality

Baseline/Target

Our litter baseline for 2017 found 55% of [surveyed foreshore](#) was graded B or above (predominantly free of litter). The target is to achieve 75% graded B or above by 2022.



Achievements and results

Emission reduction roadmap study

We commissioned E4tech to develop an inland shipping emission reduction roadmap to help operators and other stakeholders to identify barriers and to understand the technology direction in reaching current and potential future emission targets. A [summary report](#) was published in 2020.



Achievements and results

Green Tariff – International Shipping

In 2020 the Green Tariff discount was doubled for vessels with an ESI score of 50 or above, to encourage vessels visiting the Port of London to be environmentally friendly.



Achievements and results

Cleaning the Thames

We launched our [Cleaning the Thames](#) website to encourage more litter removal from the foreshore of the Thames Estuary. The website connects volunteers with events along the tidal river, helping to maximise the potential and impact of litter removal and provide a central hub for litter collection data.



Air Quality Strategy

Achievements and results ✓

Ambient Air Quality Monitoring

A network of real time air quality monitoring stations was installed at Greenwich in 2019 to allow assessment of any local effects of emissions from cruise ships moored at Greenwich Ship Tier. The [summary of the analysis](#) of calibrated results for the 2019 cruises season was published in 2020.

**Exhaust Monitoring**

Following trials of Gas To Liquid (GTL) in 2019, trials of waste-derived Hydrotreated Vegetable Oil (HVO) were undertaken in 2020 on our harbour service launch Kew. [Emissions were monitored](#) to determine if the new fuels resulted in lower emissions. Results will be published in 2021 to encourage the adoption of greener fuels by other river operators.



Air Quality Strategy

Achievements and results ✓

Green Tariff – Inland Shipping

We launched the [Thames Green Scheme](#), an independent environmental performance indicator for inland waterways commercial and service operators to gauge their environmental performance across factors including air quality, carbon, energy, water quality, litter, and waste.

**Green Inland Shipping Conference**

In November 2020, we held the [second Green Inland Shipping conference](#) online. We announced our Net Zero target and launched the Thames Green Scheme to encourage good environmental practice among inland operators.



Water Quality

Achievements and results ✓

Litter Rapid Appraisals

Rapid appraisals of the Thames foreshore in February and October showed how the type and distribution of litter in the river has changed over time. Results from our 2020 surveys indicate that 91% of the surveyed foreshore was graded B or above (predominantly free of litter), on track for the 2022 target.

**Lower Estuary Passive Driftwood Collector**

In 2019, we trialed and monitored a Passive Driftwood Collector (PDC) in the outer Estuary with time-lapse cameras. The data collected from the cameras was analysed in 2020 to inform the design and construction of a new PDC in partnership with DP World at London Gateway.



Collaborations

Tyndall Institute Report on Shore Power for UK ports

We were one of the ports interviewed by researchers from the Tyndall Centre for Climate Change working with the UK Major Ports Group (UKMPG) and the British Ports Association (BPA) to determine the barriers and solutions for UK shore power.



Collaborations

Catapult Case Study

We collaborated with the Connected Places Catapult and Royal HaskoningDHV, as part of a series looking at how innovative technologies can help ports overcome future challenges. Our [case study](#) is on the potential for a climate scenario simulation model for the tidal Thames, predicting river levels to guide operational planning.



Collaborations

CEFAS

We have been working with [CEFAS](#) (Centre for Environment, Fisheries and Aquaculture Science) to review sediment sampling frequency for dredge applications to identify ways to simplify licensing processes without impacting on environmental protection.



Air Quality Strategy

Proposals /next steps

**Zero Emission Berth**

Our [Sustainable Innovation Fund's](#) first call for evidence is seeking innovative approaches to provide a mobile service of zero emission berth power provision in the tidal Thames.

**Energy Mapping and Demand Project**

We will commission a study to investigate energy provision solutions to meet potential demand for decarbonising our operations by 2040 and the tidal Thames by 2050.

The study will identify potential solutions or mix of solutions to support the transition from carbon heavy to various low/zero carbon fuels along with constraints and opportunities with each fuel type.



Air Quality Strategy

Proposals /next steps

**Green Tariff – Inland shipping**

We will be encouraging operators, including coasters, workboats, service boats, tug, passenger vessels, dredgers, barges and tankers, to apply to the [Thames Green Scheme](#) to showcase their environmental performance. Suppliers, technology providers and shipping organisations will be contacted to join as incentive providers to reward early adopters of new technologies/approaches and demonstrate their corporate social responsibility.

**Air Emissions Abatement Retrofits**

[Clean Air Thames](#) is a partnership programme funding vessel retrofitting technology as the first step to reduce emissions in London.

Our vessel, *Driftwood II*, has been awarded funding and will be retrofitted in 2021. Emissions will be monitored pre- and post-retrofit to quantify improvements. Results will be published to share lessons learnt.



Water Quality

Proposals /next steps

**Lower Estuary Passive Driftwood Collector**

A new PDC suitable for conditions in the outer Thames Estuary will be constructed in partnership with DP World at London Gateway. We will use information gained from our analysis of the 2019 PDC estuary trial to design this project.

**Redevelopment of Dredging Spatial Information System**

We will collate ten years' sediment sample data to redevelop our Dredging Spatial Information System to include GIS to make an easy-to-use tool to inform dredge licencing and the management of the estuary.



UN Sustainable Development Goals covered by this area of work



RESOURCE MANAGEMENT

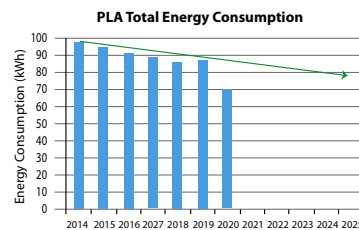
Like most organisations, we use resources to undertake our work. The baseline year for resource management is 2014, when we undertook a comprehensive review of energy data leading to a re-baseline of our carbon footprint.

During 2020, we developed a comprehensive long-term strategy, supported by a detailed short-term action plan, to reduce emissions to achieve Net Zero by 2040, or earlier. Net Zero will be achieved by reducing and eliminating emissions as far as we can; only those impossible to eliminate emissions will be offset by planting on the PLA estate to store carbon.

The 2020 lockdown restrictions affected our activities and resulted in the 2020 carbon footprint being lower than would be expected. With the duration of restrictions in 2021 unknown, there is likely to be a continuing positive impact on the carbon footprint which the actions from our five-year plan aim to maintain when activity levels return to normal. The energy efficiency improvements completed to our Gravesend offices in 2020 should be reflected in 2021 energy consumption.

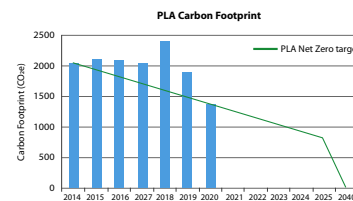
Energy Baseline/Target

Our Energy Policy targets a reduction in energy use of 20% by the end of 2025 based on a 2014 baseline.



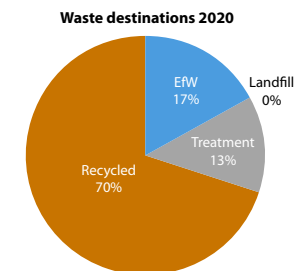
Carbon Footprint and Climate Change Baseline/Target

Our Net Zero target is for a reduction in carbon footprint of 60% by 2025 against the 2014 baseline and reaching Net Zero by 2040 or before.



Sustainability Baseline/Target

We have a zero waste to landfill policy and have sent no waste directly to landfill since 2016.



Achievements and results

Vehicles

Three hybrid cars were purchased to transfer pilots to their stations, replacing part of our contracted diesel pilot taxi services, reducing fuel consumption and air emissions.



Achievements and results

Net Zero PLA Strategy

During 2020 a comprehensive assessment of how we can achieve Net Zero was undertaken. This resulted in a Board-approved target of Net Zero by 2040 or earlier by eliminating emissions, with the small residual to be offset by planting on land we own.



Achievements and results

Waste data

New waste contractors are weighing waste for collection to provide more accurate data so that opportunities for reduction of waste and increase in recycling can be identified.



Energy

Achievements and results ✓

Electric Vehicle Charging

We installed electric charging points at our Gravesend and Denton sites. These will be used to charge vehicles in our fleet and are available for use by staff and visitors.

**New Renewable Energy**

As part of the refurbishment of our Gravesend office, the roof was fitted with photovoltaic solar panels to generate electricity.



Carbon Footprint

Achievements and results ✓

Net Zero Five-Year Plan

The Net Zero assessment resulted in a comprehensive Five-Year action plan to deliver substantial initial reductions. These actions include feasibility studies to determine the potential for enhancing building, sequestering carbon and installing additional renewable energy we own.

**Climate Change Adaptation**

As a major port under the auspices of the Climate Change Act, we hold a Climate Change Adaptation Plan. This was reviewed during 2020 to ensure port services can be maintained in a changing climate.



Waste and Materials

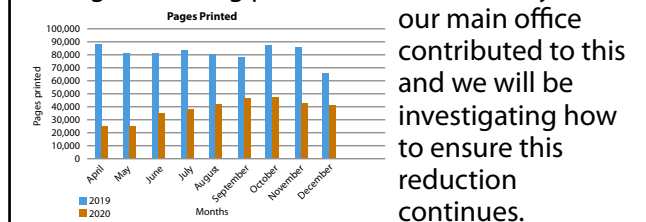
Achievements and results ✓

Greener Office

Refurbishment of our Gravesend office was completed in 2020, providing modern office facilities with new, efficient heating and ventilation, and LED lighting, improving energy efficiency and reducing carbon emissions.

**Printing**

Office printing reduced by over 50% in 2020 compared with the same period in 2019. Changed working patterns and the new layouts in



Proposals /next steps

**Barrier Gardens Pier**

In 2020 [Barrier Gardens Pier](#) was refurbished to allow larger vessels to dock. An upgrade of the electrical supply was delayed, but will be completed during 2021 to allow these larger vessels to connect to shore power.

Proposals /next steps

Alternative fuels

As part of our commitment to air pollution reduction and Net Zero, we will transition the entire fleet to biofuel as a short-term action, whilst zero emission energy options mature.



Proposals /next steps

Training

Knowledge to encourage behaviour change was identified as a barrier to achieving Net Zero, so a new programme of environmental training will be developed during 2021 to give staff the tools they need to make sustainable decisions.



Energy

Proposals /next steps

Alternative energy infrastructure

We will be working to encourage the uptake and use of renewable energy and have identified a site on the Thames where technology providers can trial emerging tidal energy technologies.



Carbon Footprint

Proposals /next steps

Net Zero Port

Working with terminals and operators throughout the port, work will continue as part of the Thames Vision refresh on determining how, and by when, the Port of London can achieve Net Zero.



Waste and Materials

Proposals /next steps

Buildings

To support our Net Zero aims, 2021 will see reviews of our buildings in relation to standards of insulation and potential for solar shading, potential for green roofs and walls, ensuring building settings minimise energy consumption and potential for additional renewable energy infrastructure.



UN Sustainable Development Goals covered by this area of work



GREENING THE RIVER – BIODIVERSITY

Our assets include the tidal river Thames and tributaries below mean high water as well as a number of terrestrial landholdings. We want to manage all our assets for the benefit of wildlife.

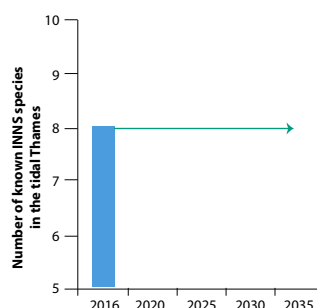
As part of our Net Zero work we reviewed the carbon sequestration potential of our landholdings. Our projects to restore habitats have continued, with our partnership with the RSPB improving reserves in Kent and Essex, and we are working collaboratively with regulators and landowners to prepare for works in 2021 to increase saltmarsh habitat at West Thurrock Site of Special Scientific Interest – a project with multiple environmental benefits.

River

Baseline/Target

The Vision Invasive Non Native Species (INNS)

Group identified that there should be no increase in the number of INNS recorded in the Thames and riverside land. An assessment was made of the number of INNS species records held by the National Biodiversity Network (NBN) between 2011 and 2016 in the tidal Thames.



Achievements and results

Habitat Surveys

An assessment of key areas or structures for biodiversity in the river and along the river edges was completed by river during the 2020 litter rapid appraisals.



River Edges

Baseline/Target

Measuring gaps between designated wildlife sites we found 115km (or 31%) of the river is protected habitat (indicated red below). If wildlife corridors replace the gaps, wildlife can spread between sites. The Vision goal is to improve the connectivity between biodiverse habitats and the initial target is to see no loss of habitat.



Achievements and results

Invasive Non Native Species Removal

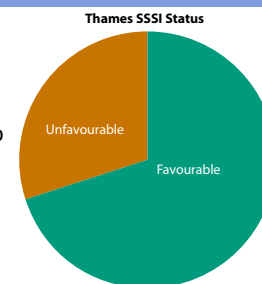
Japanese Knotweed was reported and subsequently treated on the PLA's landholdings within Mucking Creek.



Land

Baseline/Target

The Vision goal is to improve the biodiversity of sites recognised for their wildlife interest. 30% of Thames SSSIs are in Unfavourable condition – needing appropriate management to prevent special features being lost. The target is no net decline of site status, with an aspiration of none having Unfavourable Declining status. Progress to the target will be assessed when Natural England update SSSI status.



Achievements and results

Land Management

The management plan for the PLA Cliffe and Allhallows estates was completed.



River

Achievements and results

Carbon Sequestration Potential

A review of river habitats was undertaken to identify potential habitats that could be enhanced to improve biodiversity and sequester carbon.



Estates assessment

The PLA estates were assessed for their suitability to sequester carbon and provide more benefits to biodiversity by the undertaking of habitat enhancements.



River Edges

Achievements and results

Habitat Restoration

A contractor was appointed for the proposed saltmarsh restoration project at West Thurrock Lagoon and Marshes SSSI. Subsequently, the design for the restoration works was finalised.



Tree Management

Data collection for the Tree Management Plan for the towpath between Beverly Brook and Ferry Road in Kew was completed.



Land

Achievements and results

Habitat Enhancement

A number of bird boxes and bug hotels were constructed by the PLA civil engineering team for placement on PLA estates.



Habitat Enhancement

Feasibility studies were undertaken to determine if grass at our remote sites could be replaced with wildflowers to encourage biodiversity.



Collaboration

Through the PLA Investment Plan, we funded the RSPB to deliver habitat enhancements in their reserves in Essex and Kent. These enhancements improve water retention on marshes to benefit wading birds, remove scrub to encourage use by rare invertebrates and prevent predation of breeding birds. As part of this investment, PLA staff undertook four days of volunteering to help the RSPB meet the project goals.



River

Proposals /next steps

Aquaculture Feasibility

A feasibility study into the suitability of utilising aquaculture on PLA structures is proposed. Should it prove to be suitable, aquaculture will provide benefits to biodiversity, water quality and potentially provide biofuel for PLA activities.



River Edges

Proposals /next steps

Upriver Maintenance Team

Formed in 2020 the activities of the new maintenance team were constrained by COVID-related restrictions. Once restrictions are lifted the team will work on the 5.5 miles of PLA-owned embankments and river walls between Kew and Putney which become damaged by tree roots and general wear.



Land

Proposals /next steps

Habitat Restoration

Gain the required consents for the West Thurrock Lagoon and Marshes SSSI saltmarsh restoration project, with the aim of construction being undertaken later in 2021.



River

Proposals /next steps

Environment Fund

We have opened our first Environment Fund for community-based projects. Funding is being offered to projects that meet specific objectives within the broad topics of INNS and litter.



River Edges

Proposals /next steps

**Surveying at Oliver's Ait**

Ecological surveys will be undertaken on Oliver's Ait to enable the current management plan to be updated.

Land

Proposals /next steps

Habitat Enhancement

An internal working group will be established to assess the PLA estates and determine which sites are most suitable for habitat enhancements such as bug hotels and bird boxes.





The PLA's environmental work contributes to the following UN Sustainable Development Goals:



CUSTODIANS OF THE
TIDAL THAMES

PROTECT | IMPROVE | PROMOTE

www.pla.co.uk
[@LondonPortAuth](https://twitter.com/LondonPortAuth)
www.youtube.com/portoflondon
01474-562200