

# Port of London Authority

## Maintenance Dredging Framework Update 2022

### 1. Executive Summary

The Thames Estuary, which, in navigation terms, connects the London conurbation to the North Sea, is a dynamic environment with a large tidal excursion. The Port of London has been the biggest port in the UK since 2020, handling 50 million tonnes of cargo every year and growing 20% over the past five years [1] [2]. Commercial vessels of various sizes visit the Port of London delivering or collecting cargo for export or transshipment. The Thames Estuary is a sensitive natural environment as reflected by the national, European and International conservation designations.

In common with many navigable waterways in the UK, maintenance dredging is regularly carried out in the tidal Thames. Maintenance dredging is necessary to maintain safe operational water depths for navigation, and to facilitate continued access to many of the 70 plus berths, docks, wharves and jetties. Maintenance dredging within the Thames Estuary is carried out under the management and direction of the Port of London Authority (PLA), which has a responsibility to maintain depths within navigation channels [3]. Maintenance dredging of non-harbour authority berths and approaches is the responsibility of third-party organisations under the regulation of the PLA and Marine Management Organisation (MMO). In 2003, the PLA produced the first Maintenance Dredging Framework for the Thames which outlined the decision-making process for maintenance dredging in the Thames.

Since the initial framework was published in 2003, there have been several changes to legislation and the licensing of dredging in the tidal Thames, therefore the framework has been revised to reflect these changes. These include the introduction of marine works consenting by the MMO under the Marine and Coastal Access Act 2009, the designation of a number of protected sites along the Thames Estuary, including the Swanscombe Marine Conservation Zone, and the PLA's work to streamline the dredge licensing process under Section 73 of the Port of London Act 1968 (as amended).

The Maintenance Dredge Framework comprises an ongoing and continually evolving collection of initiatives, therefore further monitoring, research and collaboration are vital if understanding maintenance dredging and its possible environmental implications is to continue to improve, and if decisions on dredging are to be well-informed. The PLA will

continue to work with stakeholders along the river to develop a greater understanding of the impact of key issues such as emerging contaminants and the impacts of climate change on maintenance dredging within the tidal Thames.

## **2. Port of London Authority**

The Port of London Authority (PLA) is the port authority for 150 km (95 miles) of the tidal Thames from Teddington to the sea. It provides navigational and pilotage services for ships using the Port of London, including the maintenance of shipping channels. The PLA is a public trust, established in 1908 to administer, preserve and improve the Port of London. It is currently constituted under the 1968 Port of London Act (as amended). In addition, the PLA owns much of the riverbed and foreshore of the tidal Thames to the high-water mark.

The PLA provides navigational services for ships using the Port of London. These services include the continual monitoring: by hydrographic survey and ship data, publishing up to date charts and Notices for passage planning; providing up to the minute information to ships' masters and berth operators (including real time tide observation); the maintenance of shipping channels, moorings, lights, and buoys; and occasional maintenance dredging to remove sediments which have been deposited in the main navigation channels.

The PLA also licences dredging by others including capital dredging associated with a new project or deepening exercises and maintenance dredging to keep required depths at berths, or channels. Such dredging is undertaken by or on behalf of the owners or operators of the operational wharves, terminals, berths, jetties and other private frontages along the Thames.

## **3. 2003 Maintenance Dredging Framework**

Historically the PLA, in common with other UK ports, has acted under its own Act of Parliament alongside UK and EU environmental requirements when managing dredging in the Thames Estuary.

When managing decisions on maintenance dredging, the PLA needs to ensure a balance between meeting stakeholder expectations, discharging its responsibilities under environmental regulations, and manage safe operations in the Port of London in an efficient and cost-effective manner. The PLA seeks to respond to these pressures in a constructive and innovative manner, undertaking various initiatives including the development of a strategic framework to guide decisions on maintenance dredging and promote sustainability.

In 2003, the PLA published the Maintenance Dredging Framework for the Thames (Figure 1) in partnership with members of the Dredging Liaison Group (DLG) [4]. This framework was

developed for the coordinated assessment and management of dredging operations on the tidal Thames and included the consideration of any likely impacts on designated conservation sites.

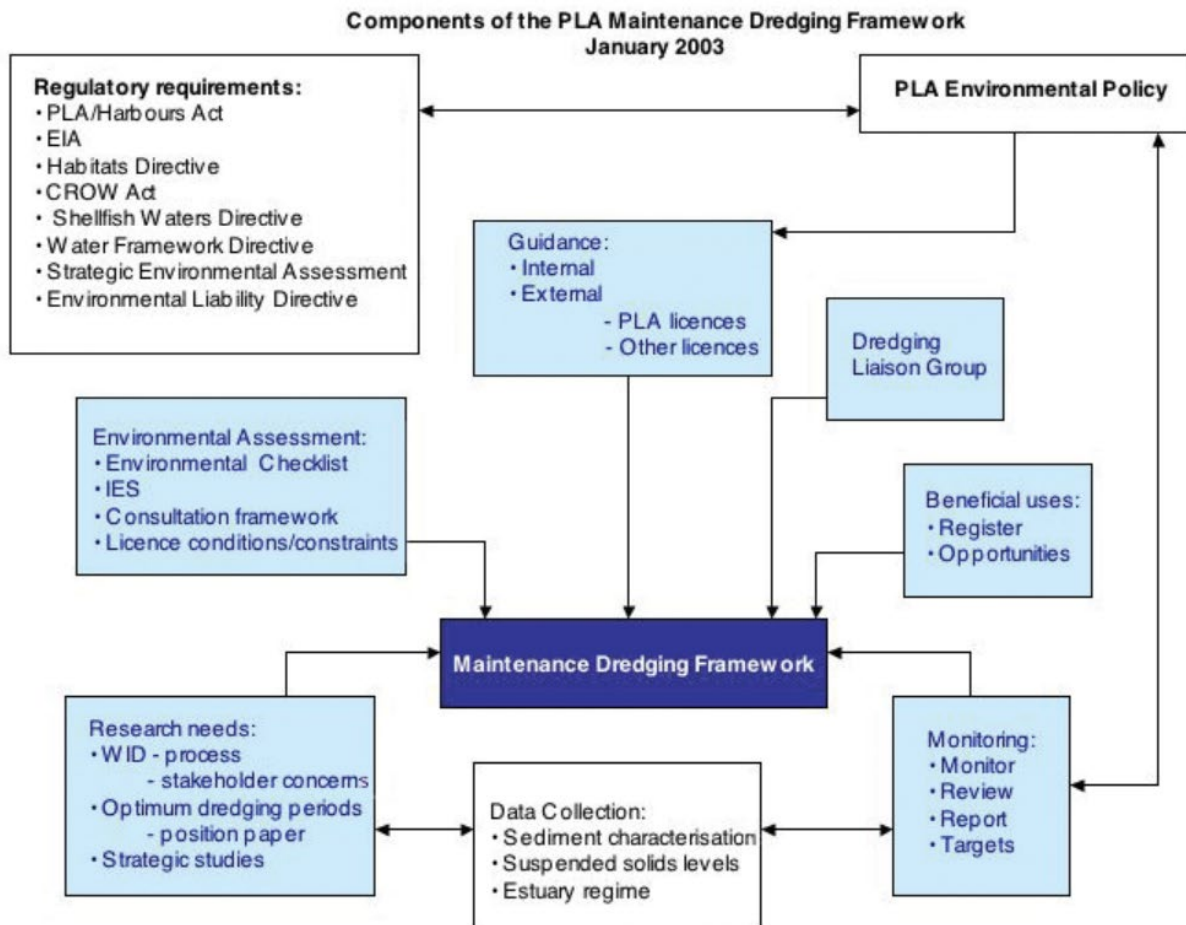


Figure 1: Components of the Maintenance Dredge Framework 2003

As shown in Figure 1, the 'Maintenance Dredging Framework' comprises an ongoing and continually evolving collection of initiatives:

- Dredging spatial information system;
- Environmental impact assessment and appraisal procedures;
- A beneficial uses register;
- Information for berth owners and operators;
- Consultation mechanisms;
- Data collection and monitoring; and
- Collaborative research.

An important consideration in developing this framework was the need to understand the estuary at a strategic (*i.e.* 'whole estuary') level, and to make decisions in full awareness of

strategic as well as site-specific issues. The components of the framework will help to ensure that the PLA was aware of such issues and is able to take them into account.

As part of this framework, the PLA encouraged improved forward planning along with an explanation and justification for maintenance dredging campaigns wherever this is practical. This is particularly relevant in the case of berths that are dredged regularly (sometimes several times each year). The decision-making framework enables many of the potential environmental issues associated with maintenance dredging to be identified and resolved well in advance of dredging taking place, with relevant expertise. However, it must also be recognised that either storm events (e.g. moving sediments into the navigation channel) or certain operational requirements (e.g. the need to dredge a berth which is only used infrequently) will continue to lead to situations in which dredging needs to be undertaken more quickly. Therefore, the framework has to be able to cope with such situations equally well.

### 3.1. Baseline Document

In 2007, the PLA published a “Baseline Document” for maintenance dredging in the Thames Estuary that aims to make the process of assessing the environmental impact of maintenance dredging in the tidal Thames more explicit by forming a basis for any future assessment of changes in operations [5]. The Baseline Document is based on a desk study focusing on environmental parameters, including sediment quality and water quality, that could be affected by maintenance dredging and are of relevance to the integrity of the European Protected sites within the tidal Thames. The document is reviewed and amended regularly to reflect changes in practices or the addition of European Protected sites, which is then approved by Natural England and published for any operator to use. In 2014, the document was updated to review the whole of the tidal Thames to reflect the further legal requirements of the Water Framework Directive and the Marine Conservation Zone [6]. The latest version of the document collates the latest relevant information of maintenance dredging operations in the Thames to provide operators and regulators an important tool in the management of any future dredging operations in the tidal Thames [3].

#### 3.1.1. Standard Conditions and Considerations

Licences issued to third parties for maintenance dredging under Section 73 of the Port of London Act 1968 (as amended), contain a set of general conditions which are described in Schedule 3 of the Licence issued to the third-party licensee. The general conditions relating specifically to pre and post dredging requirements and dredging activity are summarised in Section 3 of the 2014 Baseline Document [6]. A maintenance dredge licence requires the

sediments to be characterised to allow the potential adverse environmental effects of dredging the material to be considered. Sediment quality results are interpreted by comparison against CEFAS guideline Action Levels (Table 1), which help inform the PLA if any restrictions on dredging operation is required.

*Table 1: Current CEFAS Guideline Action Levels for the Disposal of Dredged Material. These levels were set in 1994.*

<b>Contaminant or compound</b>	<b>Action Level 1 (mg/kg dry weight (ppm))</b>	<b>Action Level 2 (mg/kg dry weight (ppm))</b>
Arsenic	20	100
Mercury	0.3	3
Cadmium	0.4	5
Chromium	40	400
Copper	40	400
Nickel	20	200
Lead	50	500
Zinc	130	800
Organotins (TBT, DBT, MBT)	0.1	1
PCBs – sum of ICES 7	0.01	None
PCBs – sum of 25 congeners	0.02	0.2
PAHs	0.1	None
DDT	*0.001	
Dieldrin	*0.005	

The PLA may place constraints on a dredging operation or require environmental monitoring for specific dredge methods to ensure there are appropriate environment controls. These conditions often relate to certain dredge methods, timings restrictions or sampling in the event of a pollution incident which are shown below:

- Dispersive methods are restricted to undertake dredging on the ebb phase of the tide only;
- Dispersive methods are restricted above Tilbury during the months of June to August inclusive, to prevent elevated water quality issues during months of high-water temperatures and low oxygen levels<sup>1</sup>; and.
- To undertake sediment sampling at any point during this Licence if required by the PLA due to the occurrence of a pollution event or there is an indication one has occurred involving a discharge or a possible discharge of polluting oil, noxious liquid substances or harmful substances or goods either in the area to be dredged or in the vicinity of the area to be dredged and to provide the results of the sediment sampling to the PLA as soon as possible thereafter and to stop any dredging that may be underway until, in the PLA's reasonable opinions, dredging can be resumed.

#### 4. Changes Affecting Dredge Licencing on the Thames

The 2003 Maintenance Dredge Framework comprised the key procedures in relation to assessing a dredge licence application including previous consultation with the DLG, environmental assessment of applications and future data collection and monitoring. However, since the initial framework was published in 2003, there have been some significant changes in legislation and licensing of dredging in the tidal Thames outlined in this section, therefore the framework has been revised to reflect these changes (Figure 2).

##### 4.1. Marine Management Organisation

Since 2011, all dredging carried out by third parties licensed by the PLA under Section 73 of the Port of London Act (as amended) are now also consented by the Marine Management Organisation (MMO) under the Marine and Coastal Access Act 2009. The MMO regulates development at sea including the licensing of 'marine licensable activities' such as construction works and all dredging activities unless relevant exemptions apply. The consenting was brought in as a phased approach with maintenance dredging on the Thames following both the Transitional arrangements extended for 2 years followed by virtue of a new Statutory Instrument (SI 2012/698) when both consenting approaches began in 2014.

Under the Thames Concordat, which was developed in 2016, the MMO and PLA work closely to ensure that applications received under respective legislative regimes are dealt with in a streamlined manner [7]. In 2021, the PLA introduced an 'Accelerated Dredge Licensing'

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<sup>1</sup> This condition does not apply to dredging undertaken at Navigator Terminal (Jetties 1,2 and 3) due to restrictions (specific licence conditions) which already apply at this site to minimise overwintering bird disturbance [6].

process alongside the current 'Full' and 'De Minimis' licence processes. The accelerated licensing process is only valid for applications that can demonstrate the low-risk nature of their works by meeting a specified criterion. The introduction of this process ensures that the regulation of these activities is further streamlined with the MMO using similar timelines.

The PLA continues to pursue the powers under MACCA as provided to them under Schedule 15 to assume delegated powers with DEFRA and the MMO in order that one consent may be achieved in the future for operators. The MMO remains the lead on Marine Works (EIA) projects and any requiring HRA's.

Furthermore, as part of the wider appraisal of the differences between the national and local regulators on dredging, the PLA has ongoing work with CEFAS (Centre for Environment, Fisheries and Aquaculture Science) to review sediment sampling frequency for dredge applications in the Thames.

## 4.2. Streamlining the Dredge Licensing Process

In line with the Maintenance Dredge Framework, further to those mentioned above there are additional ongoing initiatives which have been brought forward by the PLA to improve and simplify the dredge licence process on the Thames without impacting on environmental protection.

### 4.2.1. PLA Systems

In 2020, the PLA reviewed and refreshed our advice on river works licence applications on the PLA website and introduced a new streamlined licence application system. This online portal makes the application process more efficient and allows members of the public to view ongoing applications, supporting the requirements as part of the Harbour Revision Order. The new portal will allow applications for river works licences, dredging licences and vessel licences, although at the time of writing the online portal is only for permanent river works licences [8].

The PLA has also developed its Geographic Information System (GIS) to form an easy-to-use and informative tool which gives access to spatial information relating to dredge activity in the Thames. This tool can be used together with information about the proposed dredge, to inform decision-making and to identify any conditions that should be included in a dredging licence. Originally the Dredging Spatial Information System (DSIS) was developed as part of several initiatives in the PLA's Maintenance Dredging Framework.

### 4.2.2. Changes to the Licensing Process

External applications for licences to carry out works which fall under Section 73 of the Port of London Act 1968 (as amended) are consulted directly to statutory stakeholders directly by the PLA as well as relevant interested stakeholders. Once the consultation responses are received, the PLA will consider the responses along with the information provided by the applicant to inform the PLA's environmental assessment.

In addition, the MMO introduced an accelerated process designed to license relatively small-scale ongoing dredging activities with a shorter timeline of consultation and assessment, providing the activity met certain criteria to demonstrate the low-risk nature of the works. The PLA assessed and evaluated the number of applicants on the river this accelerated process would impact, finding that smaller businesses along the tidal Thames are often disproportionately impacted by longer consent periods. Therefore, the recommendation was to adopt a similar approach which would ensure that the regulation of these activities is further streamlined with the MMO using similar timelines.

#### 4.2.3. Team Structural Changes

In 2020, the PLA's Licensing team took on the consulting and administration for external applications to carry out dredging. Subsequent to that change, the Licensing team has now also been restructured into the Statutory Consents and Compliance team where each application will be assigned a specific case manager to oversee the process. All applications are still subject to the PLA's standard environmental assessment and checklist by the technical Environment team which is used to ensure that the full range of potential environmental issues associated with a particular dredge can be identified, and to determine which issues are likely to be significant.

#### 4.3. Ongoing Work/ Monitoring

Targeted monitoring of specific initiatives may be required by the PLA as part of the consenting process for dredging which may determine whether mitigation or compensation measures are performing as required. Finally, relevant data may also be produced as an output of research projects. The PLA will continue to work collaboratively with other organisations, particularly to undertake research that is considered necessary to inform its management of environmentally sensitive receptors, including heritage assets, in the Thames including when making maintenance dredging decisions.

To date, the PLA has used sample results received from routine maintenance dredge sampling to manage existing applications and conduct impact assessments. The data from the samples has also enabled the PLA to carry out specific research and appraise wider environmental



impacts for example, considering the impact on sediment quality from Exhaust Gas Cleaning Systems (EGCS) on ships, appraising whether the sampling frequency currently requested is appropriate for the background pollutants in the Thames and the potential presence of new pollutants.

#### 4.4. Designated Natural Conservation Sites

There are a number of nature conservation sites that have been designated since the initial Maintenance Dredge Framework was published in 2003. These new designations include the Swanscombe Marine Conservation Zone which was designated in May 2019 under the Marine and Coastal Access Act 2009, as well as Special Protection Areas and Special Areas of Conservation [9]. The PLA "[Nature](#)" webpages and section 9 of the Environment Management Framework [10] provides further details of the statutory and non-statutory designated sites and protected species that can be found within or adjacent to the PLA's jurisdiction. In addition, Section 10 of the Environment Management Framework also includes information on control measures for invasive non-native species in the Thames and a condition can be placed into a maintenance dredge licence to ensure appropriate mitigation measures are in place.

#### 4.5. Emerging Pollutants and Impacts

As mentioned above, the PLA has used data from sediment sampling to appraise the impact of emerging pollutants and potential impacts. For example, in 2019, the PLA undertook a study to evaluate the use of EGCS, on the tidal River Thames. The study was taken place to address the concerns of the potential impacts of the wash water from open loop scrubbers on water and sediment quality in ports and the marine environment. The PLA have also been working closely with the Environment Agency and CEFAS to understand the impacts of emerging contaminants such as perfluorinated and polyfluorinated alkyl substances (PFAS) in sediment.

### 5. Maintenance Dredge Framework 2022

As outlined above, since the initial publication of the Maintenance Dredge Framework in 2003 there have a number of changes to legislation and the licensing of dredging in the tidal Thames. Therefore, the framework has been updated to incorporate these changes to display the most up to date version of the decision-making framework.

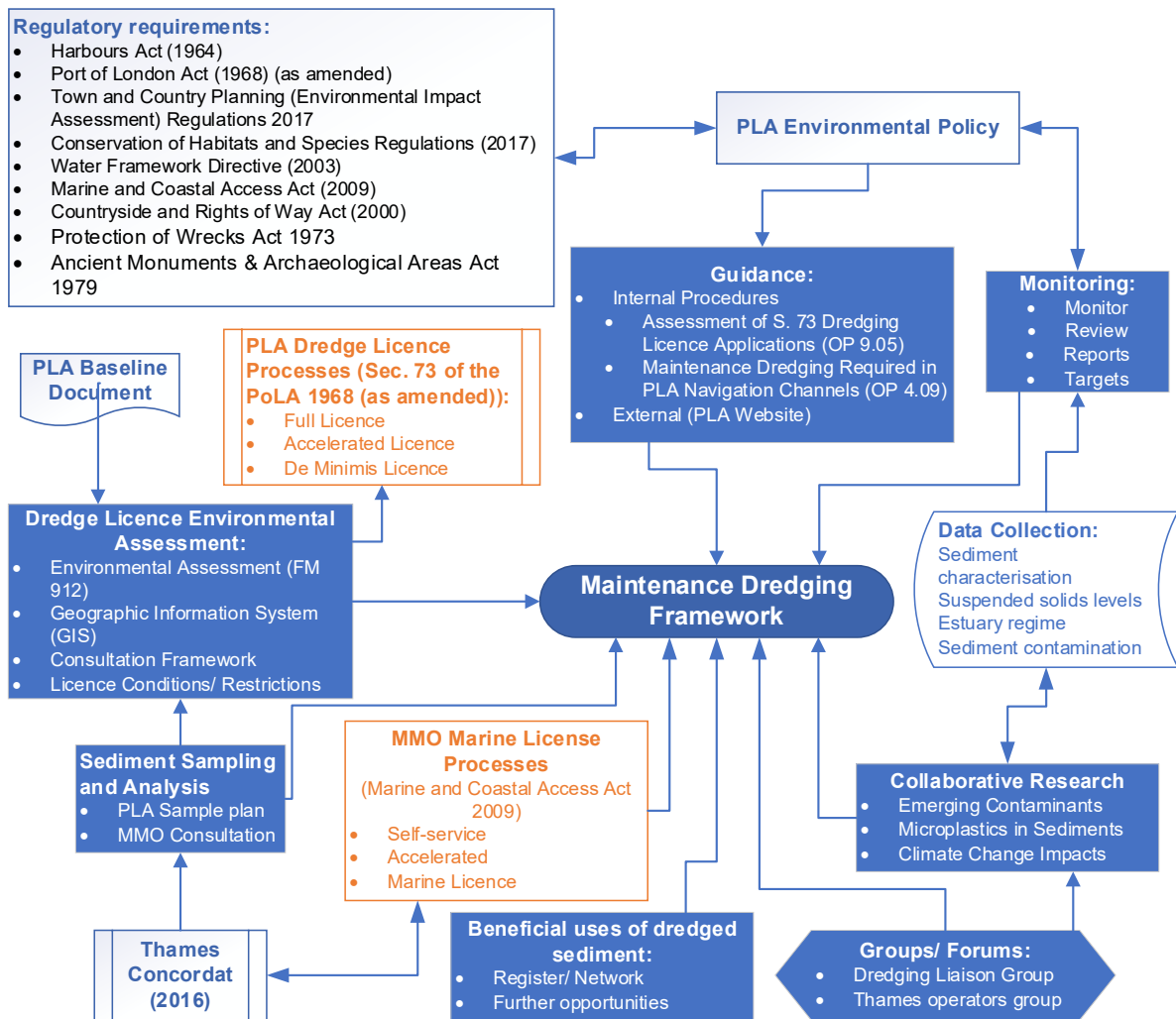


Figure 2: Components of the Maintenance Dredging Framework 2022

### 5.1. Areas for opportunity and improvement

The Maintenance Dredge Framework comprises an ongoing and continually evolving collection of initiatives, therefore further monitoring, research and collaboration are vital if understanding maintenance dredging and its possible environmental implications on sensitive receptors is to continue to improve, and if decisions on maintenance dredging are to be well-informed. The PLA will continue to work with members of the DLG and other stakeholders as indicated in the updated framework to develop initiatives including the beneficial reuse network and target monitoring of emerging pollutants of concerns such as microplastics in dredged sediment. Furthermore, as outlined in the PLA’s Climate Adaption Plan, the PLA will continue to monitor the projected climate change scenarios, its impacts on the Thames Estuary and any potential effects on maintenance dredging [11].

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