

Since it was established, by working in partnership, members of the Dredging Liaison Group have:

- arrived at a point of consensus on many issues of mutual interest;
- supported the development of initiatives taken forward by the PLA as components of the Maintenance Dredging Framework; and
- played a leading role in pioneering an environmentally sustainable approach to maintenance dredging in the UK.

Maintenance Dredging

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. The term “maintenance dredging” describes the removal of sediment that has accumulated in a previously dredged area (ie. where the original (‘maintained’) depth of water is no longer available).

Maintenance dredging can be required in the Thames Estuary for a number of reasons:

- when a storm or other hydrodynamic event leads to the deposition of materials - possibly as sand waves or ‘fingers’ extending into the navigation channels, or in areas of lower flow velocity. Such dredging tends to be undertaken irregularly in response to specific events.
- when sediment builds up in the dock entrances or ‘berth boxes’. The latter are dredged areas adjacent to a quay or jetty, often with deeper water than the approach channel due to the fact that vessels need to load, unload or wait over low water and require sufficient water depth to do so safely. Such dredging tends to be undertaken routinely, often several times each year.
- when vessels need access to facilities that are infrequently used (or infrequently used by deeper-draughted vessels). Such dredging needs to be undertaken on an ad hoc basis.

Where does maintenance dredging take place?

There are currently some 20 locations (see Figure 5) where operators undertake maintenance dredging on a regular basis, from several times each year

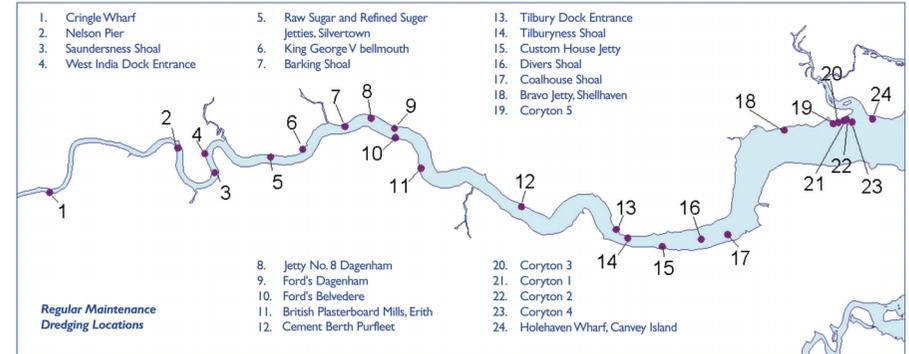


Figure 5 “Regular Maintenance Dredging Locations on the Tidal Thames.” Copyright PLA

to once every 18 months or so. The quantity removed is dependent upon the sedimentation characteristics at each location and can vary from <math><2,000\text{m}^3</math> to >math>45,000\text{m}^3</math> of silt and/or sand per dredging campaign. Dredging also takes place in other locations, although generally less frequently.

How is maintenance dredging carried out and what happens to the dredged material?

Most dredging on the lower Thames (from Tilbury seawards), particularly at berths and dock entrances - and the greatest amount in terms of overall quantities dredged - takes place using a water injection dredger. Further upstream, mechanical (eg. backhoe) or hydraulic (eg. trailer suction hopper) dredgers tend to be used.

Water injection dredging uses water jets to move accumulated sediment along the bed of the estuary (as a density current) to locations from which it is re-distributed by natural currents. It is widely considered that the retention of sediments within the natural estuarine system is a potentially significant environmental advantage of water injection dredging.

A trailer suction dredger operates rather like a vacuum cleaner, sucking material up from the bed of the river and depositing it in its own hopper or

barge. On the Thames, such material is typically taken to a land-based site for disposal; over recent years it has been relatively unusual for sediment dredged from the Thames to be taken out to sea for disposal at a licensed site. The two main land placement sites on the Thames Estuary are at Rainham Marshes (London Borough of Havering) and Cliffe Pooles (Kent). At Rainham, the PLA is working closely with the Royal Society for the Protection of Birds (RSPB), the lease holders of the site to manage the area as a conservation site. The dredged material is used beneficially to create and maintain the habitats that support the birds. The placement site at Cliffe is also managed by the RSPB to enhance its nature conservation interest: again, the careful placement of dredged material is an important part of site management.

How is maintenance dredging controlled?

The PLA has the power to dredge within its area of jurisdiction under Section 60 of the Port of London Act 1968. Other port authorities (e.g. Harwich Haven Authority) have similar powers. All dredging carried out by third parties (for example, at locations listed on the map) is licensed by the PLA under Section 73 of the Port of London Act. The key difference in how dredging is managed in the PLA area compared to the rest of England



Figure 6 "Trailer Suction Hopper Dredger." Westminster Dredging Co. Ltd

and Wales is the application of the Coast Protection Act (CPA) 1949. A PLA licence must be obtained prior to any dredging commencing and the holder of such a licence is then exempted from the usual CPA consent requirements. This places the PLA in the unique and responsible position of carrying out and licensing dredging in the Thames Estuary without an additional formal input from central government.

The PLA has general environmental responsibilities under Section 48a of the 1964 Harbours Act. In addition, the PLA, as a public body, must take account of EU environmental directives. These include the Wild Birds, Habitats, Environmental Impact Assessment, Shellfish Waters and Water Framework directives and, in future, the proposed Environmental Liability Directive. Although the issues covered by these directives are not usually the primary responsibility of the PLA, in the case of dredging the PLA is the only regulatory authority and must therefore ensure compliance.

Where potential impacts are identified, mitigation measures will be sought. Where appropriate, dredging licences may therefore be granted subject to certain restrictions or conditions being met (eg. dredging on the ebb tide only). Such conditions can be required to reduce or eliminate potential impacts on navigation or on other berth operators as well as on the natural or physical environment.