

## Information Exchange System

### Background

In order to improve the process of considering environmental information when making decisions on dredging, a data management system is necessary. To be of maximum use, such a system must meet the following criteria:

- accessible: capable of being employed quickly and cost-effectively;
- supported: must help bring together the PLA, the industry and stakeholders, as partners in the process;
- practical: must not be too complicated, too time consuming or too intrusive;
- long lasting: aim for a valued system, one which will still be in use in 10 years time; and
- relevant: carefully targeted, and where appropriate, easily-updated information on both maintenance dredging and selected environmental parameters

Whilst discussions identified that much of the required information was available, it was in a variety of forms and levels of detail; further, some data requires regular updating. These considerations, combined with the need for ready access to the information by both the PLA and DLG members, meant that a paper-based system of data storage and retrieval would quickly become unwieldy. It was therefore decided to develop a Geographic Information System that would allow rapid interrogation of electronically held data, and provide both the PLA and other DLG members with an overview of the environmental characteristics, interests and possible constraints in a defined area of interest. Initially the PLA and TEP guided the preparation of a prototype with the help of an MSc student from University College London. The PLA further developed this into the current tidal Thames 'Information Exchange System' (IES).

### What are Geographical Information Systems (GIS)?

These are computer mapping systems that link information about where things are, with information about what things are like. The advantages over a paper map is that information can be queried, for example to find the closest water quality sampling point to a proposed dredging location. Also the information is contained in layers that can be switched on and off, so the user need not be overwhelmed with information they are not interested in.

### The 'Information Exchange System'

The IES has been created using Cadcorp ASC (Active Server Component) Software and is deployed over the Internet using a secure connection to ensure that only named members of the DLG can access the site. Security is important due to confidentiality issues with some of the data contained in the system.

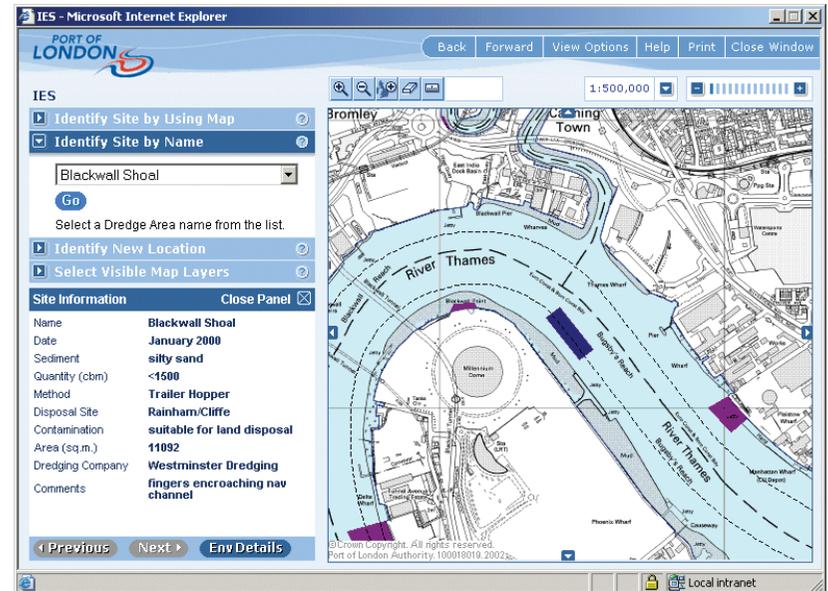


Figure 13 "Information Exchange System." Copyright PLA

Facilities within the system allow the user to search for a specific dredge site, either by name or by using the map, and then to display the environmental information that is applicable to that site. This allows the user to find the necessary information to inform decision making regarding the possible effects of maintenance dredging on the surrounding area. The interface also uses the standard GIS tools for zoom, pan and measurement and allows the environmental data to be queried.

### What data is included?

PLA and TEP jointly held meetings with stakeholders to discuss data requirements, and to agree the format of the data, its availability and any updating requirements. In the interests of efficiency and cost-effectiveness for all stakeholders, and noting that the primary purpose of the system is to inform (rather than to make) decisions on maintenance dredging proposals, data requirements were defined based on indicators rather than

comprehensive coverage wherever possible. When using the system, if the data indicates the potential for a significant effect on a particular resource, contact will be established with the responsible agency. If appropriate, additional, more detailed data can then be introduced at this stage.

The data used in the IES has been supplied by members of the DLG. It includes dredged sites within the tidal Thames (from the PLA and dredging companies), water and sediment quality data (Environment Agency), fish and shellfish information (Kent and Essex Sea Fisheries Committee), and environmental designations (English Nature). Each partner has agreed to provide updates to their data every quarter; they remain the owners of the data and are responsible for ensuring that the data provided to the system remains current.

### Development of the IES

At the time of writing, agreements have been concluded with most DLG member organisations and much of the data is now in the system. The IES was 'launched' in July 2003, and is available on-line to named DLG members. As the IES is used, enhancements are completed based on feedback and additional data becoming available: data to be added in the immediate future include bird count data from the RSPB and fisheries data for the up-river sections from the Environment Agency.

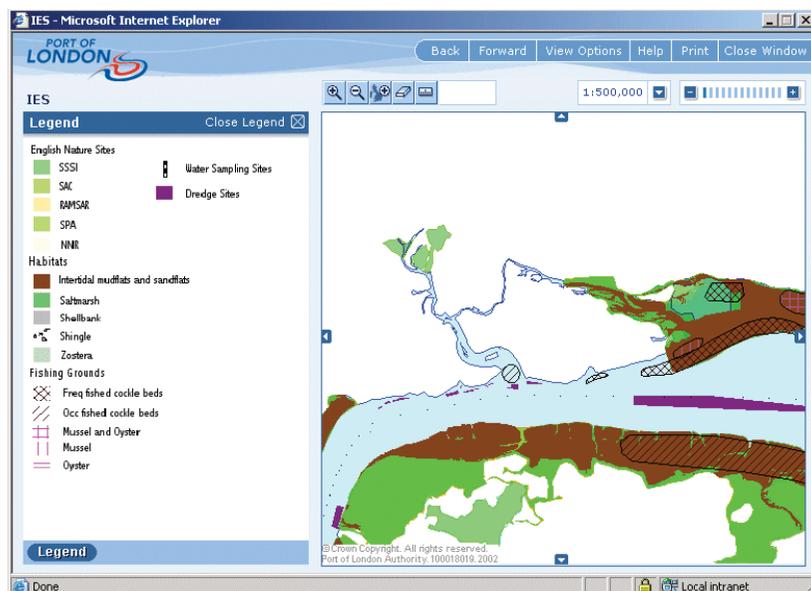


Figure 14 "Information Exchange System." Copyright PLA