

GUIDANCE NOTES: UNDERTAKING DREDGING OPERATION

Guidance for Restoration Groups



**INLAND
WATERWAYS**
ASSOCIATION



GUIDANCE NOTES: UNDERTAKING DREDGING OPERATION

INTRODUCTION

Dredging is essential for maintaining and promoting navigation of inland waterways. It is defined as the underwater removal of soil, such as sand or gravel, and its disposal. Dredging is not just limited to active waterways but is equally important for waterways undergoing restoration. This guidance note is aimed at restoration groups who are looking to undertake dredging operations on their stretch for the first time.

So, you've got a muddy ditch and you want to dredge it? Where do you start?

PRE-PLANNING

Pre-planning is essential when deciding to dredge a waterway. You will need to ascertain the characteristics of your canal for example, are there any hazardous materials? Is your site subject to site designations e.g. SSSI, Conservation Areas? Who are the stakeholders? Do you need permissions? Knowing these will help reduce further issues down the line.

PERMISSION

Firstly, there are two types of permission you need to investigate:

1. Permission to carry out dredging
2. Permissions to dispose of dredgings

Permission to carry out dredging requires landowner consent - typically this will fall under the appropriate managing body such as : such as: the restoration group, The Canal & River Trust, Environment Agency or other navigation authorities. Hopefully, relevant stakeholders are known. However, if not, IWA has a directory of all navigation authorities across the UK. Failing this, contacting the local authority will lead you in the right direction.

The managing authority will need a number of criteria such as surveying the materials, indicating the disposal methods and who will be responsible for the disposal of uncovered materials, mostly related to site investigations and designations before permission will be granted. Having a project plan will greatly increase your chances of acquiring permissions. The project plan should include site details, methodology and contractors for each stage of the work.

Permissions to dispose of dredgings wholly depends on the material found within the canal bed, acquiring the appropriate permissions from the designated management authority and providing detailed analysis on the surveys undertaken.



LANDFILL DIRECTIVE

The most important factor to determine is the characteristics of the material you will be dredging. The Landfill Directive splits waste groups into two categories: Hazardous Waste and Non-Hazardous Waste. Rather than just dredging the ditch, it is important to find out what you will be working in - the last thing you want to find out is the hole you have been digging contains vast quantities of lead or asbestos! This is a complex issue and requires an expert. Table 1 indicates the type of research you may want to carry out prior to work.



Table 1: Typical surveys required to assess land waste as hazardous or not. Taken from ‘What is Hazardous Waste?’ (2008) – Environment Agency

Survey method	Description of data
Desk Survey	Investigation into past uses of the site and nearby industrial practices, which may have previously impacted the site. E.g. http://apps.environment-agency.gov.uk/wiyby/default.aspx
Ground Sampling Plan	Developed to include both surface and sub-surface sampling. This includes a preliminary sampling exercise to inform a more expansive sampling plan.
Analysing samples	Following analysis of the samples, an environmental/human health risk assessment identified areas of the site that require remediation or soil removal.
Waste soil	Waste soil is classified as one of subpopulations based on the characteristics of their contamination (e.g. “hotspots”). Each subpopulation was assessed separately for hazardous waste purposes.
Data retention	All information relating to the site investigation was retained and passed to subsequent holders of waste.

LICENSING AND RESPONSIBILITIES

With an idea of what material you are working with, it is time to look at permissions to complete work on site. At this point, you hopefully should have opened dialogue with the appropriate land manager/navigation authority/government authority and informed them of the work you

are proposing. For dredging on ‘ordinary’ watercourses (non-main river), permissions are controlled by the local authority, Environment Agency/Natural Resources Wales or the Internal Drainage Board. Consent from the relevant management body in charge of the waterway in question is required.

Dredging operations are subject to the much of the same legislation encountered in other construction activities, as such, Environmental Impact Assessments, Pollution Management, Statutory Nuisance, Flood Defence Consent (Main Rivers) or Land Drainage Consent (All other ordinary watercourses). On waterways managed by The Canal & River Trust, permissions will need to be sought from them.

WORKING WITH NON-HAZARDOUS WASTE

Waste exemption: D1 depositing waste from dredging inland waterways is the main exemption when dealing with waste produced from dredging inland waterways. This exemption is however limited to non-hazardous waste materials. Waste exemptions essentially provide the organisation conducting the work to not require the need to process the waste material at landfill or other waste centres.

This exemption will need to be registered with the Environment Agency before undertaking the work. It may be worth applying for exemptions in bulk if you have several sites requiring dredging.

Other exemptions do exist, but are unlikely to apply to inland waterways.

Dredging's are not subject to waste legislation if there is an immediate use for the silt on site e.g. topping up the towpath or backfilling bank protection (if the dredging's are suitable).

WORKING WITH HAZARDOUS WASTE

Due to more recent use of canals as a quick and easy dumping ground for building materials, some of which are cause harm such as asbestos and lead, it can be expected that many restoration groups may uncover materials dangerous to human health. It is important to remember that restoration groups are not just limited to dealing with non-hazardous waste, but should be prepared to apply for the relevant permissions to remove the hazardous waste.

When dealing with hazardous waste, responsibilities are divided into three categories:

- **Producers or Holders:** produces, holds/stores or has hazardous waste removed from their premises

- **Carrier:** the collection and transportation of hazardous waste
- **Consignee:** receivers of hazardous waste for processing i.e. recycling or disposal

When disposing of waste, organisations, businesses and landowners have a 'Duty of Care' to ensure waste from your site is reduced, sorted, recorded, transported by a registered user and disposed of legally, in line with EU/UK legislation.

In most scenarios the restoration society undertaking the dredging operations will be classified as **Producers or Holders**. This means the restoration society/landowner must ensure the following protocols are taken:

1. Classify the waste to check if it contains any of the named hazardous materials listed in the 'list of waste (LWC)' or 'European waste catalogue (EWC)'. Samples should be taken from parts of the canal and sent for testing.
2. Sorting the waste should be completed by individuals/organisation with the appropriate licences to handle the hazardous materials identified.
3. Use authorised businesses to collect, recycle or dispose of hazardous waste, it's the duty of the producers/holders to confirm the business employed to remove waste are registered to do so and have the correct permits.
4. Fill in the correct parts of the consignment note form that apply to the organisation and pass on copies to the carrier.
5. Keep records (known as a 'register') for 3 years at the premises that produced or stored the waste.

It is unlikely restoration societies or landowners will be registered as 'carriers' or 'consignee' and will most likely require hiring in outside businesses to do so. This is an expensive operation to undertake, reliance on exemptions where possible is advised.

COMPLETING THE WORK

If the waste is hazardous, this will require an approved contractor or person with necessary licensing to deal with the material identified. Otherwise, there are variety of common methods to undertake the dredging operations.



1. Excavation from bank
2. Backhoe dredging – using an excavator from a pontoon
3. Dredger – if water levels are sufficient, a dredger can be used within the channel

Depending on the characteristics of the proposed works, other methods may be considered.

DIMENSIONS

Dredging is a necessity to ensure a navigable channel for waterway vessels on the inland waterways system. When restoring derelict waterways to navigable condition, IWA recommends that the following dimensions are met. In canals and some canalised sections of river navigations (slack water lengths), the minimum dimensions of the channel required to accommodate craft of gauge beam (B) and gauge draught (D) are:

- Depth of fairway: $D + 20\%$ or 0.3 m, whichever is greater
- Width of fairway: $2.1 \times B$ or 6 m, whichever is greater
- Depth at landings, wharves, and moorings:

$D + 0.2$ m

- Depth at other banks: At 1.0 m from every bank, or where there is a bank-side vegetation fringe at the waterside of that fringe, no less than 0.6 m.

ENVIRONMENTAL CONSIDERATIONS

It is well documented that dredging can have adverse effects on the aquatic ecosystem, however, it is also recognised that without dredging the value of the waterways can decrease and lead to the loss of a valuable aquatic environment. Dredging can have major benefits to the canal ecosystem such as:

- Maintaining open water conditions
- Support the success of early successional species
- Removal of polluted sediment and nutrient rich sediments

Mitigation measures can be incorporated to minimise adverse impacts of dredging activities. The following table provides suggestions on how to minimise these impacts:

Table 2: Mitigation measure recommended to minimise the risk of negative environmental impacts

Impact	Mitigation measure
Disturbing floral community	<p>Leave reed beds and marginal/emergent vegetation uncut where reasonably practical (where mooring isn't suitable/the channel is wide enough to permit navigation).</p> <p>Dredge smaller areas of vegetation to encourage re-colonisation of more diverse floral species requiring disturbance to propagate.</p>
Disturbing aquatic and terrestrial fauna	<p>Undertake dredging operations outside of optimal breeding seasons for birds, spawning seasons for fish and high activity for mammals and herpetofauna, suggested timing to not permit dredging are March – Late September.</p>
Spread of Invasive Species, contaminants, pollutants and nutrient rich fertilizers/ pesticides	<p>Reduce turbidity of water flow by:</p> <ul style="list-style-type: none"> • Deep dredging the main channel • Avoid dredging in heavy rain or just after peak discharge <p>Prevent overflow from dredged areas through reducing the water level during operations. Particularly in areas with environmental designations of sensitive to changes e.g. SSSI, Chalk Streams</p> <p>Prevent overflow from dredged areas through setting up geotextile filters</p> <p>Limit the movement of turbid water using straw bales (Union Canal)</p> <p>Use a closed Bucker dredger</p>
Changes to topography of adjacent land 'spoil islands'	<p>Place dredging evenly along the bank of a waterway as close to the location of dredging as possible.</p>
Hazardous waste	<p>Work within the framework of the Landfill Directive to undertake waste operations as specified within this European Directive.</p>

Extra planning applications may be required for works undertaken in or near a SSSI, Special Areas of Conservation (SAC's) or Special Protection Areas (SPA's). For work affecting a SSS i, permissions will be required from Natural England. Application for works within or near

SAC's of SPA's will be subject to a Habitat Regulation Assessment (HRA) to determine the likelihood of any adverse impacts relating to operations and will be subject to mitigation methods.

The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017 enable the designation and protection of areas that host certain important habitats and species. These European protected sites are known as:

- Special Areas of Conservation (SACs) for the protection of certain habitats and species
- Special Protection Areas (SPAs) for the protection of certain wild bird species

Any application for works within or adjacent to a European site will be subject to the provisions of The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017. In Wales and the UK, Ramsar

Sites (identified under the Ramsar Convention) are also afforded the same level of protection as fully designated Natura 2000 sites. Together, these international sites are referred to as European Sites.



USEFUL LINKS

- Landfill Directive
http://ec.europa.eu/environment/waste/landfill_index.htm
<https://www.ciwm.co.uk/ciwm/knowledge/landfill-directive.aspx>
- Waste exemption: D1 depositing waste from dredging inland waterways
<https://www.gov.uk/guidance/register-your-waste-exemptions-environmental-permits>
<https://www.gov.uk/guidance/waste-exemptions-disposing-of-waste>
- Environment
https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjmiffv-HYAhWqIcAKHThdDE4QFggsMAA&url=https%3A%2F%2Fwww.waterways.org.uk%2Fpdf%2Fiwac%2Faquatic_wildlife&usq=AOvVaw3UTha5n0ONiR6hQlniXBga
- Waste Management for Dredging Operations
<https://www.aina.org.uk/wp-content/uploads/2018/04/WetDredgingsJly08.pdf>
- Code of Practice for works affecting The Canal & River Trust
https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR040005/TR040005-000759-130402_TR040005_CRT_Addendum_Appendix_11.PDF
- IWA Inland Waterways Directory
https://www.waterways.org.uk/waterways/iwa_inland_waterways_directory
- Planning Guidance
https://www.waterways.org.uk/information/planning/planning_guidance
- IWA Briefing Note
https://www.waterways.org.uk/News_Campaigns/Campaigns/Briefing_Notes/