

MERCURY YACHT HARBOUR MAINTENANCE DREDGING & DISPOSAL WFD IMPACT ASSESSMENT

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1 Introduction

As part of the Marine Licence renewal application process to undertake dredging within Mercury Yacht Harbour a WFD scoping assessment has been completed to form part of the required supporting documentation and assessments.

This application seeks consent to continue maintenance dredge operations for a further 10-year period using the same principles and methodologies as the current licence. The maintenance works only remove accumulation of material above charted depths to ensure safety of navigation and that charted depths can continue to be maintained. The renewal of this licence is crucial to the ongoing economic security of the site as natural siltation actively and rapidly effects safe navigation and berthing.

A maximum annual volume of 10,000m³ is requested, with a total licence limit in the 10-year period of 75,000m³.

The WFD Assessment is comprised of three separate stages:

- Screening – To determine if the activity is excluded from the assessment. Activities which are not screened out are then taken forward into scoping.
- Scoping – To determine the receptors that are potentially at risk from the activity and need further assessment.
- Impact Assessment – A consideration of the potential impacts of the activity on the identified receptors along with methods or approaches to avoid or minimise impacts.

For the purposes of the dredge activity, screening was not undertaken since the activity would not qualify to be screened out of WFD. This Technical Note detailing the impact assessment, which should be read in conjunction with the completed WFD assessment scoping summarises the identified receptors and the impacts on them.

The WFD scoping activity has helped to identify that further assessment was required in all six of the categories. These quality triggers have been assessed against the context of the site, proposed activity,

scale and supporting information, to determine the level of pressures that the receptors may experience as a result of the activity.

WFD guidance states that the assessments should be tailored and proportional to the activity, location, and potential risk to receptors and as such in this instance it is appropriate that desktop studies were utilised.

The WFD Scoping and Impact Assessments have been undertaken and completed using the most recent River Basin Management Plan data, which is the 2019 Cycle 3 data as available within the Catchment Data Explorer and labelled as released in August 2022. As such this is considered the current and most up-to-date information against which to complete the impact assessment.

2 WFD Scoping Triggers

The scoping activity identified the following criteria needing further impact assessment. These receptors and the associated risk issue trigger is summarised in Table 2-1, which is taken directly from the Scoping Activity Template.

Table 2-1: Results of the scoping activity.

Receptor	Potential risk to receptor?	Note the risk issue(s) for impact assessment
Hydromorphology	Yes	Is in a water body that is heavily modified for the same use as your activity – Navigation, Ports and Harbours
Biology: habitats	Yes	Within 500m of any higher sensitivity habitat - saltmarsh
Biology: fish	Yes	Is in an estuary and could affect fish in the estuary, outside the estuary but could delay or prevent fish entering it or could affect fish migrating through the estuary Works could impact on normal fish behaviour like movement, migration, or spawning (for example creating a physical barrier, noise, chemical change or a change in depth or flow)
Water quality	Yes	Could affect water clarity, temperature, salinity, oxygen levels, nutrients, or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days). The chemicals are on the Environmental Quality Standards Directive (EQSD) list and disturbance of material with a determinant above AL1
Protected areas	Yes	Within 2km of any WFD protected area
Invasive non-native species	Yes	Could introduce or spread INNS

This table forms the starting point for the impact assessment detailed in Section 3, where a consideration to the risks to each has been detailed below in the context of the proposed works and any other relevant historical information.

3 Impact Assessments

3.1 Hydromorphology

The Southampton Water waterbody is assessed as heavily modified for 'coastal protection', 'flood protection' and 'navigation, ports, and harbours', therefore hydromorphology has been scoped in during the initial WFD assessment.

The works are a continuation of the maintenance dredge activity that is currently completed at an established Marina to ensure safe navigational depths are available within the site and its approaches. The proposed dredging works do not create a new or material change to the classification of the waterbody but is a maintenance activity of existing infrastructure and assets.

There is no significant change or modification to the project parameters from that which is currently consented, with the dredge reinstating the same recurring fixed design each time. It is therefore assessed that the continuation of the activity does not result in a change to the status of 'navigation, ports and harbours' and so would be compliant with the WFD criteria.

3.2 Biology: Habitats

The activity trigger has been scoped on the basis that the works site is within 500m of higher sensitivity saltmarsh habitats to the Northwest of the marina. As the saltmarsh is all located towards the upper extent of the intertidal area and the dredging is wholly in the subtidal area with clear spatial distance between the works and feature it is assessed that the works will not impact upon the saltmarsh feature.

The material will be deposited outside of the waterbody and therefore will not impact on the saltmarsh from disposal activity. Beneficial use schemes within the river to support the saltmarsh are not operationally viable for the volume and type of plant to support the scheme. The applicant remains involved in ongoing discussions around the beneficial use of dredged sediments and will take up the opportunity to use such sites when they become viable for use.

3.3 Biology: Fish

The activity trigger for fish has been scoped in on the basis that the works may create short duration noise and suspended sediment while being undertaken. This impact will be reduced as far as possible through the ongoing use of standard methodology, backhoe dredging, as the primary technique, which is proven to only introduce short duration, temporary impacts.

Dredging activity within the site is of a start stop nature with a comparably short loading time, following which operations pause whilst a load is taken to the at sea disposal site. This approach ensures that noise disturbance is temporary and significantly reduced. Works are not continuous as they are normally delivered around plant movement and tidal cycles.

Monitoring of the backhoe methodology elsewhere confirms that during works turbidity remains aligned to tidal levels of suspended solids found during higher energy spring tides and that backhoe methodology does not produce suspended solids (SS) levels outside the norm beyond the immediate area of work. The occasional spikes of increased SS observed did not persist therefore resulting impacts in dissolved oxygen (DO) levels would not be significant or create any implications for fish. It has also been found that the extent of influence of the dredger is less than 25 metres therefore clear water areas will be available to fish even whilst the operation is ongoing. This impact is further minimised through careful operation of the craft and plant and ensuring that overspill of material from the barge is not permitted. This ensures that material is captured within the plant and so will not lead to material being spread through the waterbody or other waterbody during trips to and from the disposal site.

Through the standard methodology detailed and on the basis that the works are not continuous, the activity is assessed as compliant with the WFD criteria.

3.4 Water Quality

Water quality has been scoped into the assessment based on two triggers;

3.4.1 Could affect water clarity, temperature, salinity, oxygen levels, nutrients, or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days)

The trigger for potentially affecting water clarity, temperature, salinity, oxygen levels, nutrients, or microbial patterns continuously for longer than a spring neap tidal cycle (about 14 days) was scoped in, however further consideration of this criteria under the impact assessment stage confirms that it could potentially have been scoped out.

This on the basis that whilst the programme of works for a deployment may take longer than 14 days to complete, the activity is a start/stop process as a result of the requirement to complete a round trip to and from the disposal site. This process introduces a layby period where no works are completed and so the activity is not considered to be continuous. An indicative sequence of this may be a 90-minute loading window and a 1-3-hour transit time to and from the disposal site(s) and so by undertaking the works throughout the tidal cycle and in a variety of conditions it ensures that any impact, such as temporary suspension of material by the dredge bucket is short duration and has the opportunity to settle and return to baseline levels. Similarly, works are often aligned to tidal windows or human activity schedules within a 24-hour window which also introduces breaks and pauses in the activity, for example overnight or at weekends. In addition, the exact disposal location within the site, for every load, is dictated by tidal cycles under a recognised local methodology to meet the requirement to evenly distribute sediment across the disposal site, thus further minimising the impact to water quality.

3.4.2 The chemicals are on the Environmental Quality Standards Directive (EQSD) list & It disturbs sediment with contaminants above Cefas Action Level 1

Southampton Water is currently qualified with a 'Does not require assessment' under the 2022 Waterbody Catchment Explorer, however in reviewing the 2019 data it was previously classified as 'Fail'. The 'fail' classification for Chemical has subsequently been adopted as the representative baseline to allow an assessment to be made under the WFD criteria and so the Southampton Water waterbody is considered to be failing its EQS Annual Average Limits.

Sediment analysis from early in 2025 confirms that Copper, Nickel and Zinc are present within the source site above Action Level 1, however only marginally and well below the Action Level 2 thresholds. The analysis data suggests any levels of contamination are low and comparably stable and so should be assessed as suitable for disposal at sea.

In considering the potential for WFD EQS limits to be impacted the nature of the activity is of primary consideration. The activity is the continuation of dredge and disposal of material from a dredge activity that seeks to reinstate the same depth as previously found at the site with very minor alterations to extent design to ensure proper and safe management of the surrounding slopes. This activity has been ongoing over a period greater than 10 years and is delivered as required to maintain the site.

With only material that has been deposited by estuarine processes above the charted depths removed and then redeposited within the same waterbody, it is the case that the chemical status of the material involved can be considered representative of baseline concentration levels within the waterbody load cell.

Chemical sampling to inform the Marine Licence (and detailed above) demonstrates that the chemical concentrations are comparably low and so we assess that there is no additional or new contamination influencing the material found in the dredge area. As a result, there is no modification to the overall headroom or overall elevation of concentration across the waterbody on the basis that the EQS limits consider both the suspended and dissolved phase.

The daily methodology-based limits to backhoe dredging as a result of the combination of plant and the requirement to complete trips to and from the disposal site creates a direct limit on the volume of material that can be dredged and disposed of per day through the course of the works.

This little and often approach across a range of current flows and directions ensures that whilst the material may be released through the works and so lead to a short period of slightly increased suspension, the opportunity for rapid dilution within the water column is large on the basis that the volume of water within the dynamic, tidal waterbody is significant and that the material deposits are being properly timed around tidal cycles.

Works are not a continuous activity through the year which ensures that any temporary impact will not be permanently seen on the annual average levels. As such, the assessments find that the temporary baseline uplifts of the EQS annual average would be trivially small and of no concern for WFD compliance.

The volume of water within the Southampton Water waterbody provides a large margin of safety as the load being imposed (either in load-by-load isolation or cumulatively over the course of the campaign) would not be substantial enough to generate a long-term uplift. The opportunity for dilution is great and would prevent anywhere near a 3% uplift of a failing annual average baseline being reached, even on an in works temporary basis when measured at the site itself.

The dredge activity is therefore assessed as being compliant with both CEFAS action levels and the EQSD requirements of the WFD legislation as delivery of the proposed activity will not result in anywhere near a 3% uplift in the failing chemical EQS AA baseline. That no long-term additional load or scale of works uplift is proposed ensures that the works are as small as possible to achieve the required outcomes and so will not lead to a WFD deterioration.

3.5 Protected Areas

The works are located within 2km of the following WFD protected areas:

- Special Area of Conservation (SAC) Solent Maritime (UK0030059)
- Special Protection Area (SPA) Solent and Southampton Water (UK9011061)
- Coastal Sensitive Area – Eutrophic, Hamble Estuary (UKENCA123)
- Shellfish Waters – Approaches to Southampton Water (36)
- Shellfish Waters – Southampton Water (35)

The potential for impact to these protected areas are recognised and in the context of the essential nature of the maintenance dredging works, the approach to dredging and disposal and the methodology which is deployed is the most appropriate and minimally intrusive.

In addition, the works are a continuation of an existing operation within consistent parameters and so the comparably small volumes involved, combined with the size of the works area and the frequency of the operation ensures that the pressures associated with the works such as vessel presence and low-level noise are reduced as far as reasonably possible. Proactive works management ensures the plant is appropriate for the task required and is proportional to the project and that works only occur within the approved sites.

This approach with contractor management, plant selection and project planning, ensures that works have been undertaken to date under the existing licence without creating problems or impacts upon any of the WFD protected areas.

Due to the nature of the activity (dredging), any pressures are most likely to be created during the 'construction' phase and, as they would be temporary effects of a short duration activity with the water body recovering within a short space of time without restoration measures these would not count towards deterioration. Similarly, there is no change to these areas because of the new RBMP data that would change the previous WFD assessments.

As such it is considered that a continuation of the activity will not have a significant impact on the WFD protected areas around the Southampton Water waterbody, with the continuation of the activity assessed as compliant with the WFD criteria.

3.6 Invasive Non-Native Species

The invasive non-native species (INNS) trigger/ receptor has been scoped into assessment on the basis that the works may utilise vessels sourced from outside of the scoped waterbody.

In the event that it is not possible to use locally procured/sourced contractors and vessel(s), or vessels that are already working within the estuary the appointed contractor will be required to use the most relevant and up-to-date industry practices, which are used in relation to the mitigation, minimisation, and avoidance of any introduction of invasive non-native species into the proposed works waterbody catchment area. The dredging plant does not carry any ballast water and as such is aware of biosecurity measures when transiting further afield.

That the plant is potentially operating within waterbodies that are intrinsically linked to each other would not increase the local level of risk associated with the works and so we would therefore consider the risk to be As Low As Reasonably Possible (ALARP).

4 Summary

The WFD scoping triggers have been impact assessed in the context of works detail and proposed methodologies. This assessment confirms that the project proposal does not introduce a potential for significant or permanent impacts under the WFD legislation as a result of the works, with any potential impacts minimised or of very short nature before subsequently returning to baseline levels.

The works have therefore been assessed as being compliant with the Water Framework Directive (WFD).