

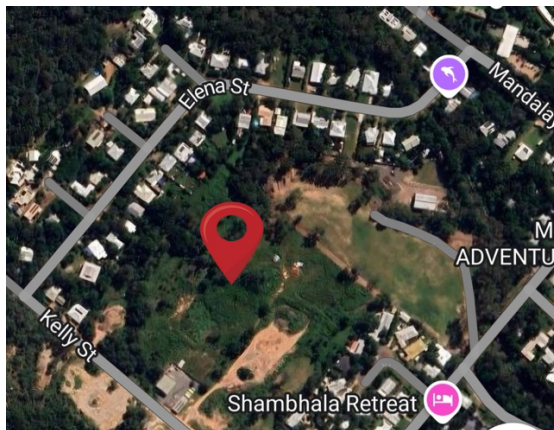


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MICDA's objections to storage and treatment of contaminated dredge spoil at Kelly Street Nelly Bay

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1. There has been no EPBC Act assessment in the use of 55-77 Kelly Street, Nelly Bay on Magnetic Island for storage and treatment of contaminated dredge spoil.

- This use of the land is likely to impact Matters of National Environmental Significance (MNES) and should be referred to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) for assessment as a controlled action.
 - Along with all of Magnetic Island, this site lies within the Great Barrier Reef World Heritage Area and as such, is likely to contain and contribute to World Heritage Values and other MNES (including via its catchment functions, presence of listed plants and animals, etc) [1].
 - In Kenchington and Hegerl's words "*In preparing this report we have been struck by the diversity of terrestrial and marine habitats represented in the relatively small area of Magnetic Island... on its own, it makes a significant contribution to meeting World Heritage obligations.*" [1]
 - Despite its disturbed and contaminated state, the site at 55-77 Kelly St is still likely to contribute to MNES including catchment function, groundwater recharge, and the presence of listed species such as the Magnetic Island Dwarf Skink *Pygmaeascincus sadleri*. This skink is likely to be endemic to Magnetic Island (as it has not been found elsewhere on the mainland) and has a 'vulnerable' conservation status. This small ground-dwelling skink lives in thick leaf litter and the site is included in its known range [2]. The site at Kelly St is also likely to be habitat for the large range of other native

animals including 5 that are on threatened species lists and other animals whose populations are declining on the mainland.

- In recognition of the presence of 6 of the 9 protected MNES on Magnetic Island and community concerns that Townsville City Council may not always be considering impacts on MNES in local-scale decision making, DCCEEW's predecessor established *EPBC Act Policy Statement 5.1 – Magnetic Island, Queensland* to assist a person proposing to take an action on or around Magnetic Island to decide whether or not their action is likely to be a Controlled Action and therefore if EPBC Act referral is required. [3]
- In addition to providing details about the MNES that occur on the island and key threats to them, EBPC Policy Statement 5.1 provides specific guidance, giving examples of actions with the potential to have significant impacts on MNES (Table 2 commencing on page 18) and actions which do not (Table 3 commencing on page 22). [3] Table 2 of the Statement includes the following examples of actions with the potential to have significant impacts on Matters of National Environmental Significance – which are highly relevant to the proposed storage and treatment of contaminated dredge spoil:
 - Coastal infill or spoil dumping
 - Pollution of aquatic environment by sediments or changed drainage regimes likely to result in increased turbidity, smothering or altering of natural ecological processes.
- The consultant's report Site based management plan for dredge material management facility [4] fails to recognise the application of the EPBC Act and Policy Statement 5.1. Its assessment of Environmental Values (section 3.4 p8) fails to recognise potential impacts on MNES. Further, section 5 of that report 'Environmental Impact Management' also fails to recognise the potential impacts on MNES.
 - Noting that the dredge disposal is proposed to be contained in a bunded but unsealed area on the site, the claim that there will be "no adverse impacts on water bodies as a result of disposal of dredge material" (p19) fails to account for leachates entering groundwater flows into the nearby major creeks, throughout the catchment and into the downstream marine park.
 - Noting the recent rain event that caused major surface water flows that overtopped the prepared bunded area, it is unclear how the site management will prevent the mobility of contaminated soil due to erosion and the transport of the contaminated soil (including contaminants from oxidisation of acid sulfate soils) into nearby waterways, the downstream marine environment and other sensitive environments within the catchment (p19).

2. The disposal/storage/treatment of contaminated dredge spoil on the Kelly St land is inconsistent with the 'Key Principles for the Remediation and Management of Contaminated Sites' as laid out by the National Environment Protection Council [5] and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended in 2013) [6]

- It is well known that the site is a contaminated site. It is on the Environmental Management Register as being subject to a 'Notifiable Activity or Hazardous Contaminant' being asbestos disposal and previous use as a sewage treatment area.
- The National Environment Protection Council requires that management of contaminated land should focus on remediation and avoidance of further contamination, including taking steps to 'prevent the further contamination of already contaminated sites'. [5] Their legislative measure states in Volume 1 Section 6 (3) that "Contamination, or further contamination of a site should be prevented. [6]

3. The consultant's assessment that the contamination levels in the dredge spoil are low enough to be considered uncontaminated, appears to apply contamination limits for standards which are not appropriate for dredge disposal at the Kelly St site.

- The consultant's assessment of contaminants in the sediments proposed for dredging [7] primarily relies on the contamination limits allowed in the National Assessment Guidelines for Dredging 2009 [8]. These limits are the maximum contamination limits for dumping of dredge spoil at sea, where contaminants would immediately be dispersed and diluted due to sediment transport. These limits are not relevant to the limits of contamination that should be tolerated for disposal on land, especially in the sensitive environmental context of a world heritage area.
- The consultants report [7] also refers to default guideline values recommended by the National Environment Protection Measures (NEPM) for sediments in an aquatic environment [9].
- More appropriate limits for a site such as Kelly St, which is land in a World Heritage Area and in the midst of a residential area, are the Soil Quality Guidelines established by the National Environment Protection Council. These provide limits for contaminants based on expected toxic effects on soil processes, soil invertebrates and plant species. Not surprisingly, the levels tolerated for soil in environmentally sensitive terrestrial environments are much lower than those that might be tolerated for dumping at sea [10].
- A more appropriate set of soil specific Ecological Investigation Levels are those represented in the Calculation Spreadsheet provided in the Assessment of Site Contamination toolbox. This toolbox includes a spreadsheet which is an interactive excel spreadsheet that allows calculation of soil-specific EILs relative to soil pH and cation exchange capacity – both highly relevant with respect to acid sulphate soils [11].
- For example, according to NEPM guidance, the acceptable contamination of zinc (mg/kg dry soil) in a national park/high conservation value location (such as a world heritage area) with pH 2 and cation exchange 20 (listed in the consultants report as relevant) is 35mg/kg. This is significantly less than the benchmarks used by the consultant (up to 30,000 mg/kg). Further, several sediment cores analysed exceed this level, with some cores recording levels as high as 67.8mg/kg.
- We have not done a thorough assessment of all contaminant levels reported in the consultant's report across the pH spectrum expected in the sediments. The point is – in our view, the consultant (SMEC)'s analysis of the levels of heavy metal contaminants is

inadequate, as it does not take into account the full spectrum ecotoxicological guidance available from the NEPM, given the diversity of cation exchange capacity and pH expected in the dredge spoil from Nelly Bay.

4. The proposed storage and treatment of dredge spoil at the Kelly St site is not demonstrated 'best practice'. It contradicts best practice proposed by an Independent Panel of Experts.

- We (the Magnetic Island community) have still not been provided with detailed data around the methods TCC proposes to apply to the treatment of dredge spoil from Magnetic Is harbor. We have been assured that the dredge spoil will be treated to be available as 'topsoil free to the community', however there has been no information about how the spoil will be treated regarding heavy metals, acid sulphate and excessive salt contamination to make the dredge spoil suitable for use on the island.
- We are concerned that the TCC and consultant (SMEC) approach is not taking into account the advice contained in a 2015 report – "Synthesis of current knowledge of the biophysical impacts of dredging and disposal on the GBR" [12] (The Report).
- The Report identifies a number of impacts and challenges involved in disposal of dredge material on land, which have not been accommodated in the TCC/SMEC proposal.
- These include:
 - loss of coastal habitats (note earlier comments about world heritage values and MNES),
 - runoff of saltwater from the dredge spoil,
 - leachates into ground water, and
 - concerns about acid sulphate soils which we know are involved in the sediments from Nelly Bay harbor.
- In particular, this report states that the impacts on terrestrial environments are many and varied and should be considered as carefully as impacts of marine disposal. We don't believe this consideration has happened.
- With respect to high volumes of salt water and fine sediments contained in dredged material, the expert report notes that:
 - Material needs to be dewatered and dried before the disposal area can be used for another purpose. This can take years. Experience at several Qld ports has shown that layers of dredged material greater than 1-1.5m thick take more than 5 years and possibly decades to reach rehandling consistency. This will tie up the land and prevent it from being used for the purpose for which it is zoned (community facilities) for a long time.
 - Experience in dredging and disposal in Gladstone has demonstrated an ongoing discharge of fine sediments (as high as 100mgL⁻¹) into the adjacent environment, with failure of the bund wall to retain sediments.
 - To date, the TCC has not provided any details of sediment treatment which would deal with the dewatering and the salt water content of the sediments. The expert report states that habitat damage due to dredge spoil storage and treatment on land

will be exacerbated by the salinity of the sediment, saline runoff to waterways, and saline drainage to groundwater.

- The expert report notes a number of risks associated with the design and construction of bunds, and the high likelihood of failures during floods and cyclone events (eg experience at Gladstone Harbour noted above). The current bunding at the Kelly St site was overtopped with surface water flows in the recent rain event.
- The expert report also notes that dredged sediment has poor engineering qualities and negligible reuse potential, and areas for sediment treatment are effectively alienated from adjacent areas due to odour, dust and visual amenity. We have concerns that TCC proposes to do this in the midst of a residential area.

5. An appropriate use of the site consistent with its zoning ‘Community Facilities’ is to remediate the contamination present on the site and developing facilities for community use.

- The further proposed contamination of the land with contaminated dredge spoil, and potential impacts on MNES, is not consistent the zoning of the land (community facilities).
- The NEPM and NEPC provide ample guidance for the management of the contaminated site (noting that is on the Environmental Management Register due to asbestos and sewage contamination).
- Land available for ‘community facilities’ is extremely important but very limited on Magnetic Island.
- We recommend that Council explore the opportunity to remediate the contamination on the land at Kelly St, so that it can be made available for the purpose for which it is zoned (Community Facilities).
- MICDA stands ready to support Council in such an endeavour.

References

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- [4] SMEC, "Site Based management Plan for Dredge Material Management Facility," Townsville, 2023.
- [5] National Environmental Protection Council (nepc.gov.au), "Key Principles for the Remediation and Management of Contaminated Sites (Distilled from ANZECC/NHMRC 1992 Guidelines)," 2013. [Online]. Available: <https://www.nepc.gov.au/sites/default/files/2022-09/asc-nepm-key-principles-summary-remediation-management-final-draft.pdf>.
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- [7] SMEC, "Sediment Investigation Report - Nelly Bay Harbour Maintenance Dredging Campaign," Townsville, 2022.
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- [11] National Environmental Protection Council., "ASC NEPM Toolbox - Ecological Investigation Limits (EIL) interactive spreadsheet," 2013. [Online]. Available: <https://www.nepc.gov.au/sites/default/files/2022-09/eil-calculation-spreadsheet-december-2010.xls>. [Accessed 2025].
- [12] L. J. McCook, B. Schaffelke, S. C. Apte, R. Brinkman, J. Brodie, P. Erfemeijer, B. Eyre, F. Hoogerwerf, I. Irvine, Jones R, B. King, H. Marsh, R. Masini, R. Morton, R. Pitcher, M. Rasheed, M. Sheaves, A. Symonds and M. S. J. Warne, "Synthesis of current knowledge of the biophysical impacts of dredging and disposal on the GBR.," 2015.