

Decommissioning Plan for the Temporary Construction of Two Groynes in Marsaxlokk Bay as a Measure to Reduce Littoral Drift

As per ERA requirements (EA 00010/21)

Technical Report

AIS REF. NO: PRJ-ENV339

CLIENT REF. NO: EA 00010/21

FIRST VERSION

Publication Date

1 June 2021



AIS Environment Limited,
AIS House, 18, St. John Street,
Fgura FGR 1447 Malta

T: +356 21803374 F: +356 21803434
E: info@ais.com.mt W: www.aisenvironment.com

DOCUMENT REVISION HISTORY

Date	Revision	Comments	Authors/Contributors
01/06/2021	1.0	First Version	Donalda Karnauskaite

AMENDMENT RECORD

Approval Level	Name	Signature
Internal Check	Sacha Dunlop	
Internal Approval	Mario Schembri	

DISCLAIMER

This report has been prepared by AIS Environment Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Infrastructure Malta; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from AIS Environment Limited. AIS Environment Limited disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

Table of Contents

1.0	Scope	1
2.0	Introduction	2
2.1	Site Location.....	2
2.2	Construction Activities	2
2.3	Operational Activities.....	3
2.3.1	Decommissioning Plan	3
2.4	Removal of Waste from Site	5
2.4.1	Wastes Present on Site	5
2.4.2	Segregation and Storage	5
2.4.3	Treatment, Conditioning and Transport	5
2.4.4	Disposal/Recovery Methods	5
3.0	Cleaning of the Site.....	6
4.0	Qualitative Assessment of Pollution Risks & Identification of Potential Sources of Emissions.....	7

Table of Figures

Figure 1: Scheme site boundary (Source: Project Description Statement, Infrastructure Malta, 2021)	2
Figure 2: Scheme site for decommissioning works.....	4

Table of Tables

Table 1: Waste streams during the decommissioning activities on site	5
Table 2: Severity of contamination scenario.....	7
Table 3: Probability of contamination scenario	7
Table 4: Risk matrix.....	8
Table 5: Qualitative assessment of decommissioning contamination scenarios.....	9

1.0 Scope

AIS Environment Ltd (AIS) has been commissioned by Infrastructure Malta (henceforth referred to as the 'Operator') to prepare a Decommissioning Plan (DP) to fulfil the ERA requirements outlined in EA 00010/21 (dated 24/05/2021) for *“Temporary construction of two groynes in Marsaxlokk bay as a measure to reduce littoral drift”*:

10. In case of failure to fulfil its purpose or in case of adverse environmental effects deemed unacceptable by ERA all interventions of the project shall be reversed, and the site returned to its original state, as deemed necessary, in line with a Decommissioning Plan approved by ERA (cross-refer to Condition 16):

16. The DP shall be submitted for the approval of the ERA and it shall include:

- » *A phasing-out plan, proposals for site remediation or decontamination, and methodological guidance on site reinstatement or appropriate after-use;*
- » *The reference to the relevant environmental parameters, as outlined in the environmental monitoring programme, to be observed during the required operational monitoring, which would trigger decommissioning and any other associated measures; and*
- » *The DP should address the removal of the development (and/or of any secondary developments, infrastructure, or land/sea use ancillary to it) in the event of redundancy, serious default from critical mitigation measures, adverse environmental impact, or other overriding situations that may emerge in future.*

2.0 Introduction

2.1 Site Location

The proposed Scheme is located in the inner Marsaxlokk Bay (Figure 1), and lies in close proximity to a salt-marshland known as il-Ballut ta' Marsaxlokk. The coastal wetland which is a Natura 2000 Special Area of Conservation (SAC) – MT0000014 is also scheduled as an Area of Ecological Importance (AEI) and Site of Scientific Importance (SSI) - Level 1 protection as per G.N.1069 of 2006.



Figure 1: Scheme site boundary (Source: Project Description Statement, Infrastructure Malta, 2021)

2.2 Construction Activities

The Scheme is proposing the construction of two temporary groynes, each with a footprint of 300m², to reduce sediment transport along the Marsaxlokk inner bay; namely from the 'Il-Ballut' area towards the creek area. The proposed groynes provide a temporary solution for the ongoing erosion effects. Concurrently, the applicant is also undertaking a number of hydrodynamic studies and considering a variety of permanent design solutions to improve the sediment and wave hydrodynamics of the bay.

The area comprising the groynes will be prepared by laying geotextile sheets on the seabed which will be temporarily anchored in place. The placement of lower coralline limestone (hardstone) boulders will follow. These boulders will be lowered on the geotextile systematically using a mobile crane. The precise placement of the boulders will be guided by divers to ensure that they're positioned in an interlocking manner. The mass of the boulders will vary between 3 to 6 tonnes.

2.3 Operational Activities

Given that the scope of works is to increase sedimentation within the beach area, one would expect that the rates of sedimentation will increase throughout the operational phase of the project. During the operational monitoring, the beach and marshland stability and sediment profiles will be documented by the operational monitoring team (OMT). In order to properly assess the parameters mentioned above a combination of aerial imagery, visual inspections and sediment dynamics indicators to quantify topographic characteristics related to erosion and sediment transport will be used. The Authority will be kept informed regularly on the outcome of the monitoring efforts carried out by the OMT.

In the event of unexpected or significant erosion effects at the beach caused by the proposed groyne arrangement, the OMT will immediately inform the applicant and the ERA for immediate action. Upon further consideration, if the proposed structures are deemed ineffective or detrimental to the sediment dynamics of the bay, the, the proposed structure (Figure 2) shall be dismantled in line with the Decommissioning Plan.

2.3.1 Decommissioning Plan

During the decommissioning phase, a temporary path (accessway) complete with an underlying double layered geotextile sheeting will be installed at the side of each groyne. The accessway will be installed by placing pre-washed concrete /blocks (cuboids, sized 1x1x1m and 2x1x1m) next to the groynes which are lifted by means of a mobile crane. Subsequently, the existing groynes' hardstone elements will be removed using the aforementioned crane and the geotextile laid under the boulders will be brought out of the water. At the end of works, the temporary accessway and the geotextile at the sides of each groyne will also be demounted and removed from the site.

Throughout the work, divers will be in the water to coordinate and precisely monitor the works. The applicant is not proposing the installation of a silt curtain as the sea within the Scheme site is very shallow.

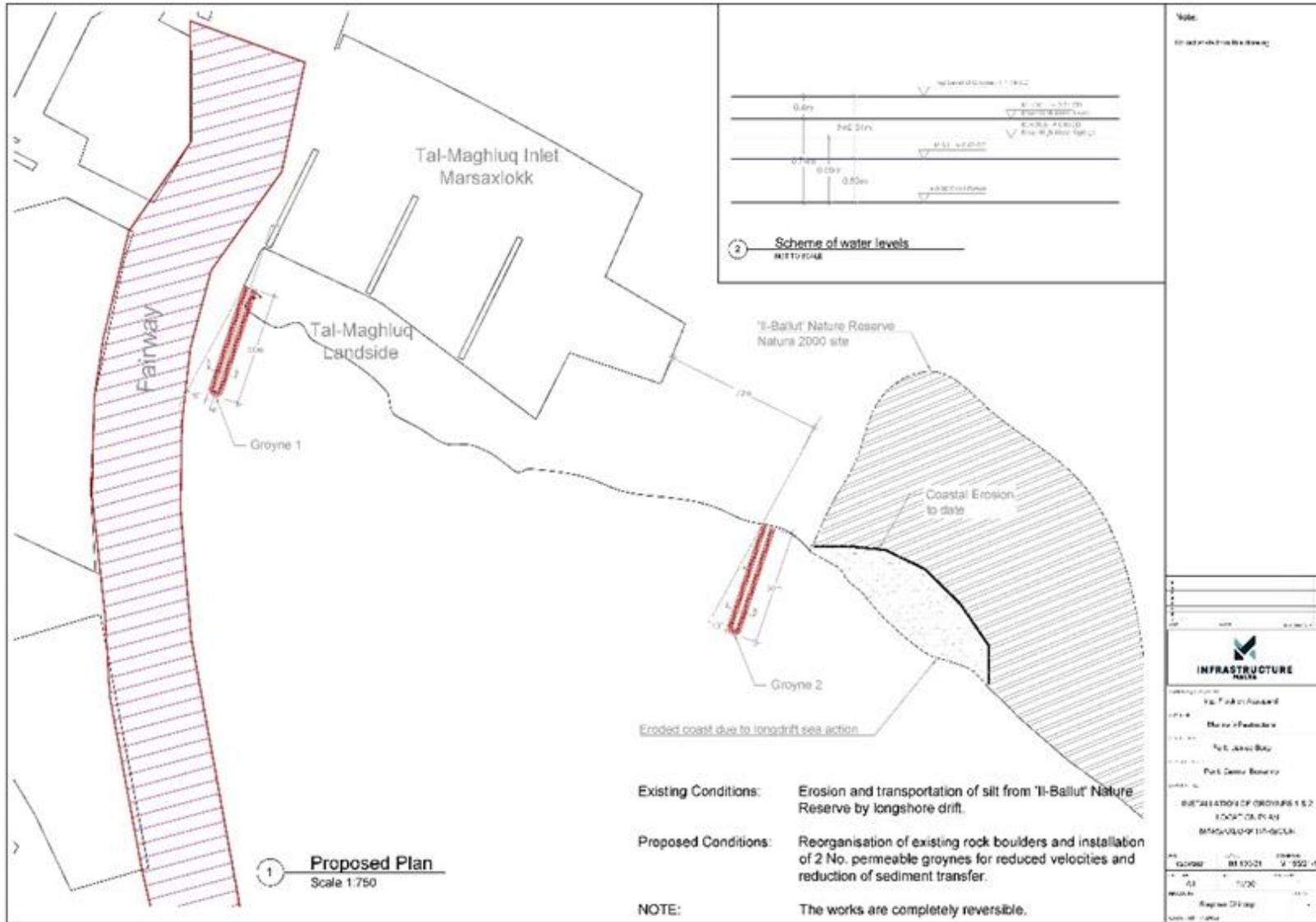


Figure 2: Scheme site for decommissioning works

2.4 Removal of Waste from Site

2.4.1 Wastes Present on Site

A list of the potential waste streams that are likely to be present on site at the time of decommissioning are presented in Table 1.

Table 1: Waste streams during the decommissioning activities on site

Activities	EWC Code	Waste stream	H/N ¹
Outgoing waste storage	20 01 11	Textiles (geotextile)	N
	10 13 11	Wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10 (Corraline limestone boulders)	N
	17 01 01	Concrete (concrete blocks)	N

2.4.2 Segregation and Storage

All waste types present on site are separated and stored in the corresponding designated waste storage areas on site during the decommissioning phase.

2.4.3 Treatment, Conditioning and Transport

The waste generated will be transported off-site by a licensed waste carrier to an authorised waste acceptance facility. The transport of all waste shall follow the guidelines stipulated in the local legislation: WASTE REGULATIONS OF 2011 (S.L.549.63) and WASTE MANAGEMENT (ACTIVITY REGISTRATION) REGULATIONS OF 2007 (S.L.549.45).

2.4.4 Disposal/Recovery Methods

Table 5 outlines the individual waste streams that will be generated from the decommissioning phase and how they will be removed from the site.

¹ H: Hazardous; N: Non-hazardous

3.0 *Cleaning of the Site*

Once all waste materials are removed from the site, the sandy beach will be cleaned from any residual waste generated from the decommissioning phase and the area shall be raked and swept using a metal rake and sweeping brush, as may be necessary.

No water or cleaning agents will be used during the decommissioning process. This will eliminate the risk of any potentially contaminated water entering the ground water system.

No other cleaning will be necessary.

4.0 Qualitative Assessment of Pollution Risks & Identification of Potential Sources of Emissions

The release of pollutants into the surrounding environment is unlikely to occur at the decommissioning phase. The risk of contamination has been assessed for each of the individual waste streams present on site; including the severity of the event, probability of occurrence and overall risk level (refer to Table 5). The criteria for the assessment are outlined in Table 2 to Table 4.

Environmentally sound construction practices in line with the ENVIRONMENTAL MANAGEMENT CONSTRUCTION SITE REGULATIONS OF 2007 (S.L. 552.09) will be followed throughout the decommissioning works to limit the adverse effects on the surrounding environment.

Table 2: Severity of contamination scenario

Descriptor	Numeric Rating	Definition
Catastrophic	5	Very serious environmental effects with impairment of ecosystem function. Long term, widespread effects on significant environment.
Critical	4	Serious environmental effects with some impairment of ecosystem function. Relatively widespread medium-long term impacts.
Marginal	3	Moderate effects on biological or physical environment (e.g. air, water_ but not affecting ecosystem function. Moderate short/medium-term widespread impacts (e.g. significant spills).
Negligible	2	Minor effects on biological or physical environment. Minor short/medium-term damage to small area of limited significance.
Insignificant	1	No land and ground water environmental contamination by release. Limited damage to minimal area of low significance.

Table 3: Probability of contamination scenario

Descriptor	Rating	Definition	Guideline Frequency
Almost Certain	A	Consequence is expected to occur in most circumstances	Occurs more than once per month
Likely	B	Consequence will probably occur in most circumstances	Occurs once every 1 month to 1 year
Occasionally	C	Consequence should occur at some time	Occurs once every 1 year to 10 years
Unlikely	D	Consequence could occur at some time	Occurs once every 10 years to 100 years
Rare	E	Consequence may only occur in exceptional circumstances	Occurs less than once every 100 years

Table 4: Risk matrix

		Consequence				
		Insignificant	Minor	Moderate	Major	Catastrophic
Likelihood	Almost Certain	Low	Moderate	Extreme	Extreme	Extreme
	Likely	Low	Moderate	High	Extreme	Extreme
	Occasionally	Very Low	Moderate	High	High	Extreme
	Unlikely	Very Low	Low	Moderate	High	High
	Rare	Very Low	Very Low	Moderate	Moderate	High

Table 5: Qualitative assessment of decommissioning contamination scenarios

Potential Source of Contamination	EWC Code	Activity	Contamination Scenario	Receptor			Severity	Probability of Contamination Occurring	Risk Level WITHOUT Mitigation Measures	Mitigation Measures	Risk Level WITH Mitigation Measures
				Land	Air	Marine water					
Textiles (geotextile)	20 01 11	Removal from site	Material exposed to the elements	Yes	No	Yes	2	D	Very low	Waste packaged in appropriate packaging Transported by appropriately licensed waste carrier	Very low
Wastes from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10 (Corraline limestone boulders)	10 13 11	Removal from site	Material exposed to the elements	Yes	No	Yes	2	D	Very low	Waste transported by appropriately licensed waste carrier	Very low
Concrete (concrete blocks)	17 01 01	Temporary storage and the removal from site	Material exposed to the elements	Yes	No	Yes	2	D	Very low	Waste transported by appropriately licensed waste carrier	Very low