

# Environmental Impact Assessment

## Screening

(According to Schedule III of S.L. 549.46)

<b>ERA Reference no.:</b>	EA 000002/18
<b>PA Reference no.:</b>	PA/01820/18
<b>Project Title:</b>	Sand Replenishment of Ghadira Bay, including the Construction of a Wave Deflection and related Marine works.
<b>Location:</b>	Il-Bajja tal-Mellieha, Triq il-Qammieh, cont., Triq I-Marfa, Ghadira, Mellieha, Malta
<b>Screening date:</b>	June 2018

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## 1. Description of Proposal

### 1.1. Outline of project/development

PA01820/18 is a development application which involves Phase 1 and 2 of a larger project that aims to sustainably replenish Ghadira Bay, combat erosive forces and encourage inland sand dune migration.

The full project involves the following interventions:

- Phase 1 – Sand replenishment using suction dredging and the construction of a wave deflector intended at partially protecting the newly-replenished sandy beach (see Figure 1);
- Phase 2 – The construction of submerged wave deflectors intended at encouraging inland sand dune migration, whilst ensuring sand retention even during severe storm conditions;
- Phase 3 – The construction of an elevated three-lane dual carriageway to replace Triq il-Qammieh, intended at encouraging inland sand dune migration.

Thus, this proposal does not include Phase 3, since this is being considered as a stand-alone independent project which will be subject to additional studies following the implementation of Phase 1 and 2.

The current proposal will extend the sandy beach shoreline over the entire length (1000 m) of the beach with a varying width of approximately 30 m, therefore increasing the landwards sandy beach area by approximately 30,000 to 38,000 m<sup>2</sup> (see Figure 1). The required volume of sediment (80,000 m<sup>3</sup>), for the beach replenishment, will be dredged from within a proposed delineated area (see Figure 3), whereby exclusion zones have been determined to not adversely affect the present protected habitats, designated through the Flora, Fauna and Natural Habitats Protection Regulations (SL 549.44). Subsequently the dredged material will be deposited in sand pits for settlement, whereafter it will be levelled and distributed in order to create a seaward extension of the sandy beach (see Figure 2). To create a comprehensive reclamation profile, an additional 30,000 m<sup>3</sup> of land sand is proposed to be excavated, which will be used for the levelling of the newly created beach profile.

To combat erosive forces in the southernmost part of the bay, which is prone to high wave action, a wave deflector, with a length of more than 20 m, will be constructed to dissipate or reflect incoming wave energy.

Following the replenishment of the sandy beach, a submerged wave deflector (toe) will be constructed along the entire length of the bay, along the -1.5 m depth line, and would take up seabed surface area up to 20,000 m<sup>2</sup>, given that the submerged toe will require a width of 15 to 20 m. Such submerged toe will be constructed by placing one to two tonne boulders on the seabed, to dissipate incoming wave and current energy around the entire sandy beach. In order to place such boulders immediately onto the underlying rock layer, 50,000 m<sup>3</sup> of sediment is proposed to be dredged from within the proposed submerged toe seabed area, which implies that only an additional 30,000 m<sup>3</sup> of sediment would need to be dredged from within the proposed borrow pit area (with a total seabed area of 49,518 m<sup>2</sup>). To further combat with alongshore sediment drift (with a south-to-north direction), the placement of groynes is being proposed, which will be built up of loosely placed boulders perpendicular to the beach linking the current rocky seashore to the submerged toe (see Figure 4). The section of these groynes further out to sea will be submerged as well, and will create a groyne field. In the southernmost part of the bay, the aforementioned wave deflector will connect to the submerged toe.

The construction of this complex of groynes, submerged toe and wave deflector aims at combatting erosive forces, promoting accretion of the sandy beach, and subsequently promoting inward sand migration.

### **1.2. Site description and related considerations**

The site of the proposed development is Għadira Bay, the largest sandy beach in Malta, located along the north-western coast in Malta (see Photo 1 and 2). Triq il-Qammieh runs adjacent to the beach, just a few meters above sea level. As stated in the PDS, the beach at Għadira Bay is currently in a state of equilibrium between erosion and accretion.

The proposed site covers a total site area of approximately 270,000 m<sup>2</sup>, which includes the area for the proposed seaward extension of the sandy beach (30,000 to 38,000 m<sup>2</sup>), the underwater area from which sediment will be dredged and transferred to the shoreline (49,518 m<sup>2</sup>), the underwater area where the submerged toe will be constructed (up to 20,000 m<sup>2</sup>), and the seabed areas for the wave deflector and groyne field (of which the latter includes beach surface area) (see Figure 1).

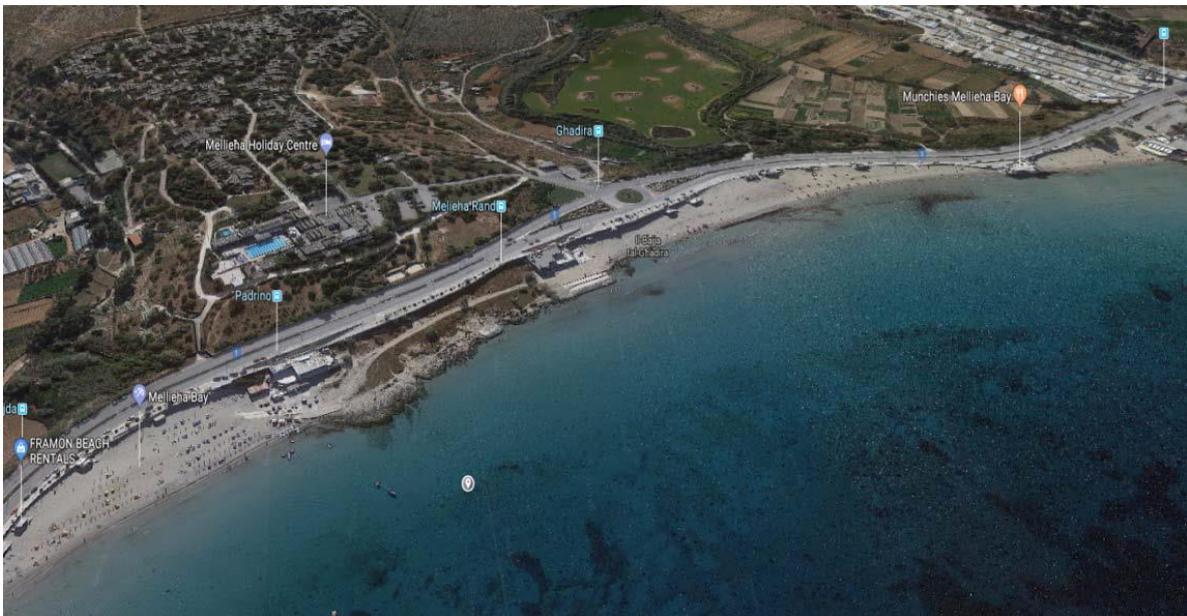
The site is subject to the following Natura 2000 sites, as declared through the Flora, Fauna and Natural Habitats Protection Regulations (SL 549.44):

- MT0000105 (Zona fil-Baħar fil-Grigal ta' Malta): SAC – International Importance (Marine);
- MT0000112 (Il-Baħar ta' Madwar Ghawdex): SPA; and
- MT0000015 (L-Għadira Area): SPA and SAC.

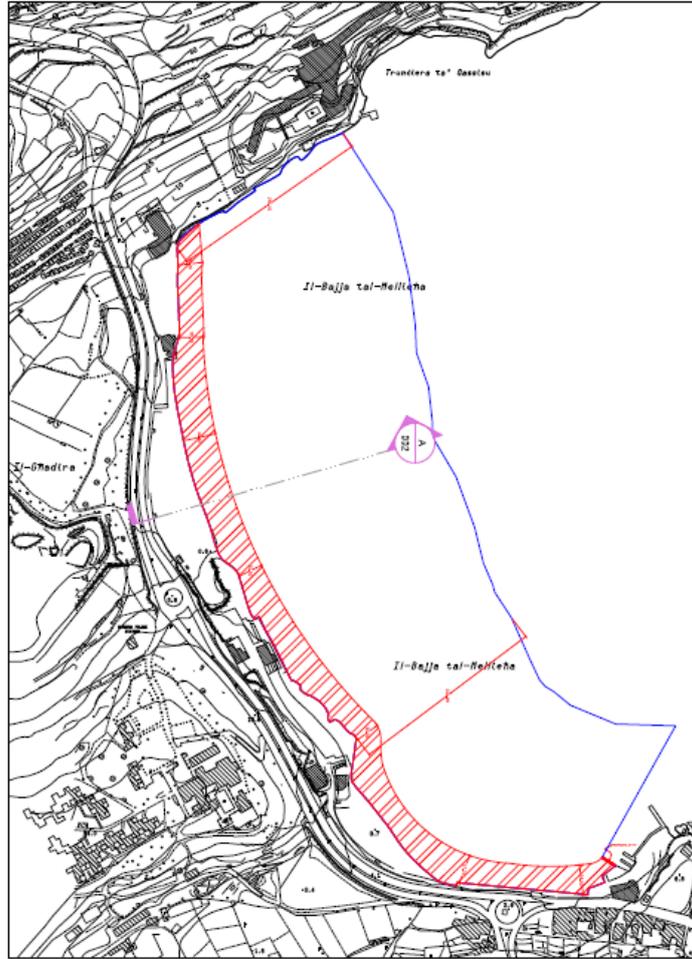
The marine area is specifically important as it constitutes Annex 1 Habitats 1110 (Sandbanks), 1170 (reefs) and 1120\* (*Posidonia* beds), of which the latter is a priority habitat (S.L. 549.44). Furthermore the site is subject to a level 4 Area of Ecological Importance (AEI), as designated through Govt. Notice 491 of 2006. To area to the north of the beach, is scheduled as an Area of High Landscape Value (AHLV) under Govt. Notice 400 of 1996.



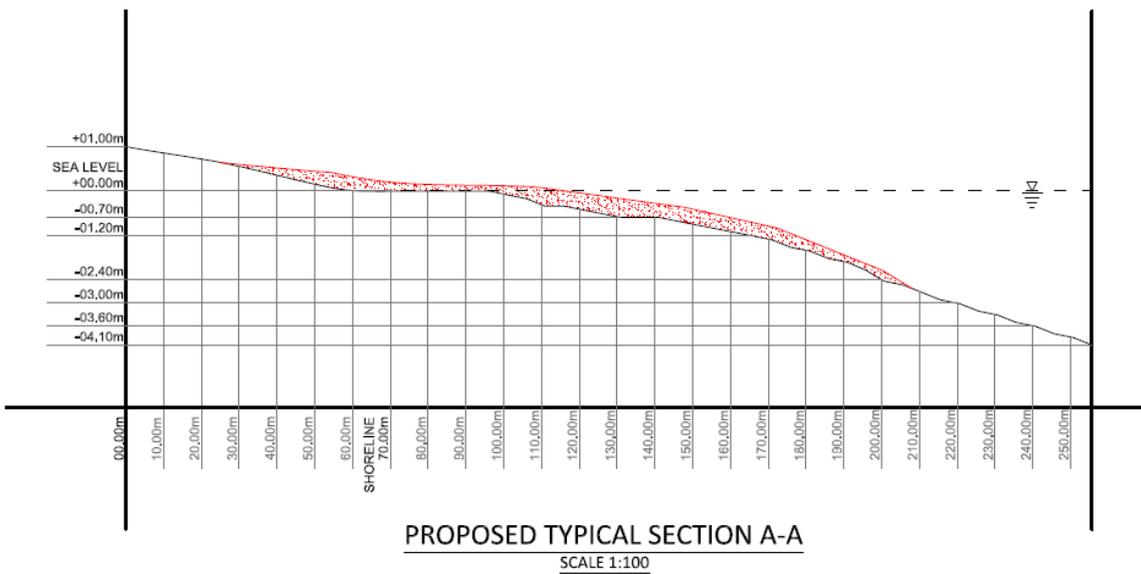
**Photo 1:** Aerial Photo of the site of the proposal (Source: PDS)



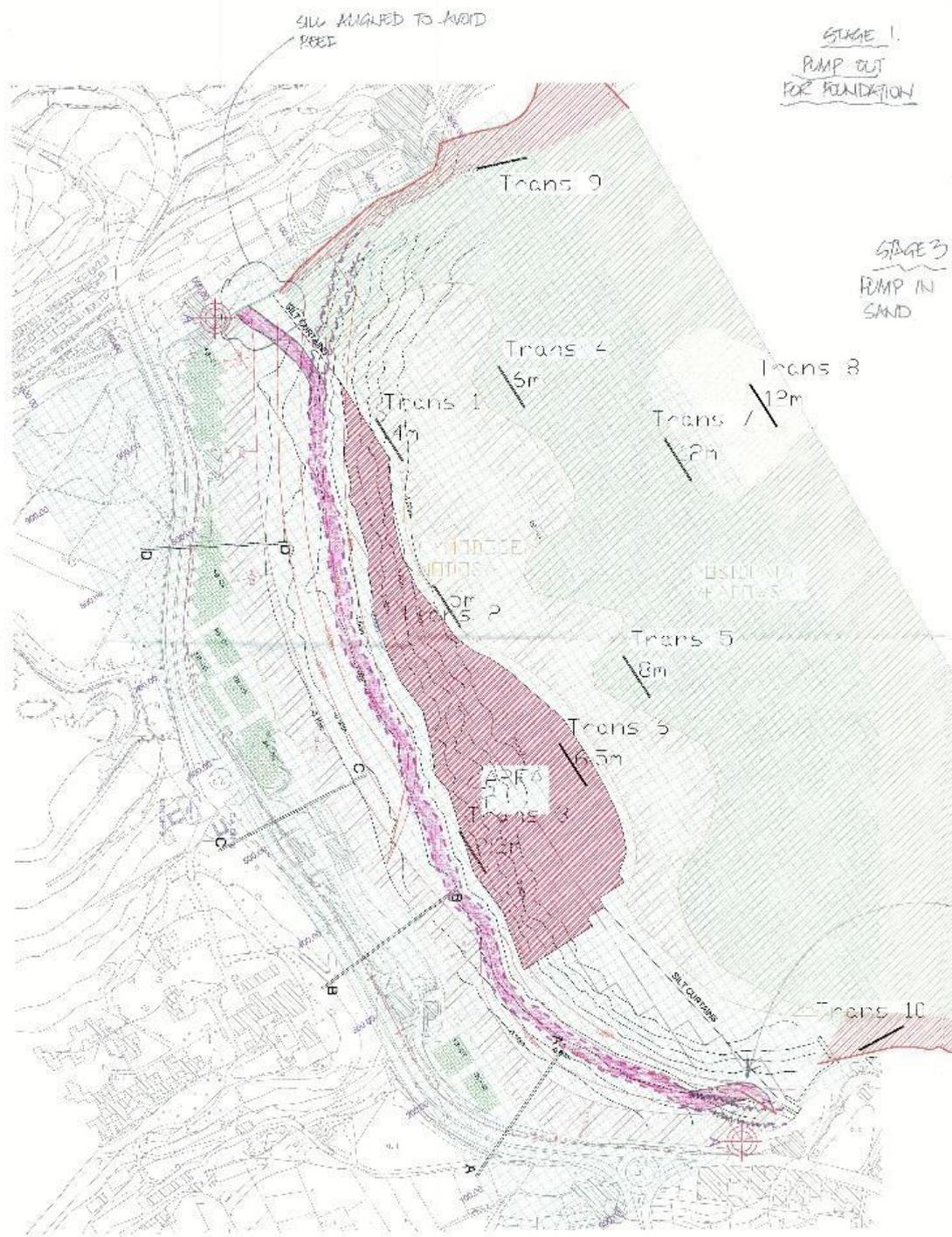
**Photo 2:** Aerial Photo of Għadira Bay (Source: PDS)



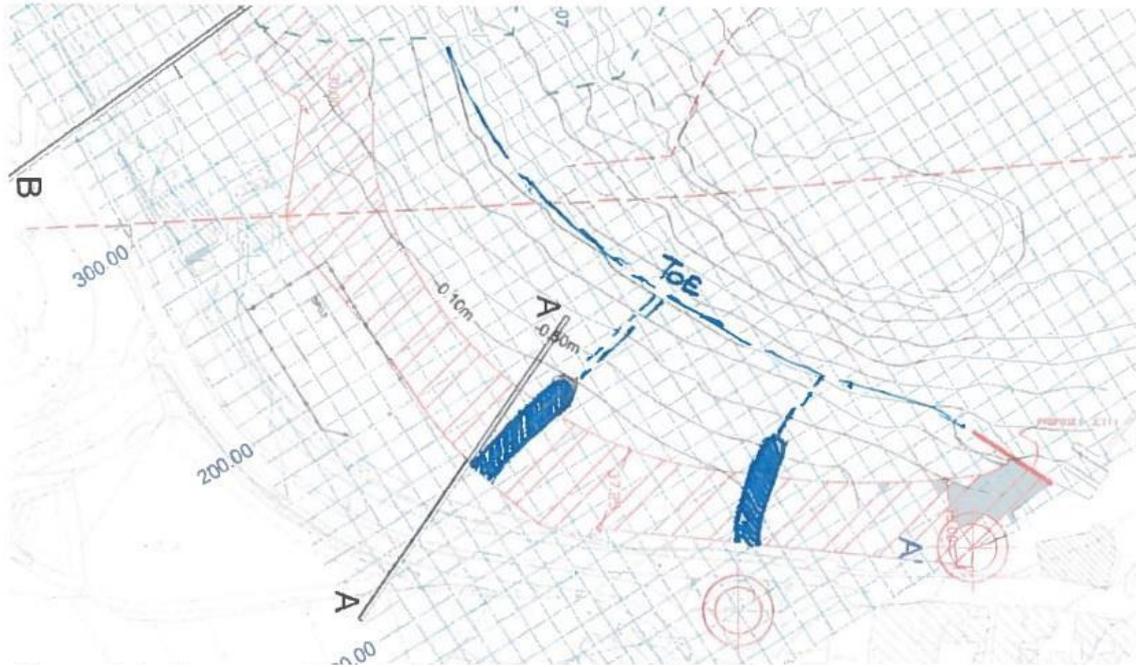
**Figure 1:** Proposal plan (The area for the proposed extension of the beach outlined in red, and the area proposed for all interventions related to dredging and construction of the wave deflector, submerged toe and groynes, outlined in blue) (Source: PDS)



**Figure 2:** Proposed elevations (Source: PDS)



**Figure 3:** Visual impression of the proposed borrow pit (red), from which sediment would be dredged, and the location and extent of the submerged toe (pink) (Source: PDS)



**Figure 4:** Visual impression of location and extent of proposed submerge toe and groynes (perpendicular to the beach and connected to the toe) (Source: PDS)

### **1.3. Site history**

PA/01820/18, as referred to ERA on the 23<sup>rd</sup> February 2018 qualified for EIA screening in terms of Schedule I, Category II, Section, 1.0.2.1, 6.2.2.2, 6.2.2.3, and 6.2.2.4 of the EIA Regulations, 2017 (S.L. 549.46). Following such EIA screening, certain unclear and potentially significant impacts were identified. In order to obtain the required clarifications, a Marine Environment Study was requested. The said proposal involved Phase 1 of the project only. However, following review of the Marine Environment Study and subsequent discussions between ERA, the consultants and the project architects, the project has been amended to also include Phase 2 and therefore the proposal has been amended accordingly. In this regard, the required Marine Environment Study has not been concluded.

## **2. EIA-relevant history**

### **2.1. Relevant EIA/screening criteria** (citations refer to S.L. 549.46, except where otherwise specified):

As highlighted in Section 1, this proposal involves phase 1 and phase 2 of the full project, and this EIA screening has been undertaken for both phases comprehensively. Phase 3 can be reasonably considered as a distinct phase and therefore is not covered by this screening. Therefore, the following criteria of Schedule I, Category II apply:

- Section 1.0.2.1: Development with a site area of 2ha or more;
- Section 6.2.2.2: Dredging or other changes to the seabed, excluding maintenance dredging within an already existing harbour or its official fairway;
- Section 6.2.2.3: Coastal works to combat erosion, and works capable of altering the coast (through the construction of, for example, breakwaters, dykes, moles, jetties, groynes, sea-walls, wave-breakers, underwater berms, and other sea defence works) not covered by Category I, excluding the maintenance and repair of such works; and
- Section 6.2.2.4: Enlargement, modification or replenishment of an existing shore or beach.

## **2.2. Appropriate Assessment Screening**

The proposal lies within the following Natura 2000 sites:

- MT0000105 (Zona fil-Baħar fil-Grigal ta' Malta): Special Area of Conservation (SAC) – International Importance (Marine);
- MT0000112 (Il-Baħar ta' Madwar Ghawdex): Special Protection Area (SPA); and
- MT0000015 (L-Għadira Area): SPA and SAC.

as declared through the provisions of the Flora, Fauna and Natural Habitats Regulations of 2006 (S.L. 549.44).

The possibility of locally significant impacts within the protected areas on the protected species, habitats and the overall integrity of the protected sites cannot be excluded upfront, therefore further Appropriate Assessment screening was required.

## **2.3. Documents used for screening:**

- 1) Project Description Statement (PDS), referred to ERA on 29<sup>th</sup> May 2018.

### 3. Screening Matrix Checklist

The following screening checklist is based on information in the Project Description Statement provided by the developer in accordance with Schedule II of the EIA Regulations (S.L. 549.46) and the European Commission Guidance on Screening (2017).

Question Number:	Questions to be Considered	Types and characteristics of identified potential impacts  Briefly describe	Is this likely to result in a significant effect?  Briefly justify	Document Reference
1	Will construction, operation, decommissioning or demolition works of the Project involve actions which will cause physical changes in the locality (topography, landuse, changes in water bodies, etc)?	Yes, the proposal involves the replenishment of Ghadira Bay (which forms part of the coastal water body MTC 104) by depositing sediment dredged from the near shore. A seaward extension of the shoreline by a varying width of approximately 30 m is proposed, and the land surface area of the sandy beach will therefore increase by some 30,000 to 38,000 m <sup>2</sup> . A minimum of 80,000 m <sup>3</sup> of sediment is required and will be translocated from the near shore to the shore. Furthermore, a wave deflector, submerged toe, and groin field will be constructed which will be constructed immediately onto the underlying rock layer.	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear <input type="checkbox"/></p> <p>Yes. The proposed interventions will impose irreversible physical changes to the seabed, by the replenishment of the beach and the creation of the said permanent artificial structures, composed of materials alien to the immediate surroundings. Notwithstanding that the proposal intends to maintain similar slope profiles for the replenished beach/seabed, such cut-and-fill exercise will create likely significant physical changes to the seabed.</p> <p>Any potential consequential impacts by the said alterations to the seabed, in terms of dynamics of the bay, may eventually intensify such physical changes even more.</p> <p>Furthermore, any potential hydromorphological changes to the water body may cause deterioration/compromise the achievement of good status for the coastal water body, in terms of the EU Water Framework Directive.</p>	PDS p 8, 10, 30, 33 and 38

Question Number:	Questions to be Considered	Types and characteristics of identified potential impacts  Briefly describe	Is this likely to result in a significant effect?  Briefly justify	Document Reference
2	Will construction or operation of the Project use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or in short supply?	<p>The proposal will make use of 80,000 m<sup>3</sup> of sediment which will be dredged from the near-shore seabed and translocated onto the shore for the extension of the beach. Given that the proposed construction of the submerged toe needs to be placed immediately onto the underlying rock layer, 50,000 m<sup>3</sup> of sediment will be dredged from within the area assigned for such structure. The remaining 30,000 m<sup>3</sup> is envisaged to be dredged from within the proposed borrow pit.</p> <p>The proposed submerged toe and groynes will be constructed by placing one to two tonne boulders of imported basalt or porphyry rock material, layered in several strata. The required volume of boulders required for the construction of such structures has not been determined. Nevertheless, it is already known that the submerged toe will cover a seabed surface area of maximum 20,000 m<sup>2</sup>.</p> <p>The material requirements for the proposed wave deflectors consist in marine grade concrete for the base and structure, metal for reinforcement, and large masonry boulders for armouring of the caissons.</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/></p> <hr/> <p>Whilst noting that the proposal will make use of large amounts of sand material which will be dredged and therefore removed from their current location on near shore area and deposited onto the shore to extend the beach, the sand will remain within the 'site' and will therefore not be depleted from other locations.</p> <p>Details of the material requirements in terms of basalt/porphyry rock boulders for the construction of the submerged toe and groynes are unknown and therefore the sustainability of such use cannot be determined. Nevertheless, any constraints regarding such requirements are outside the scope of this EIA, and fall within the remit of the competent authority of the relevant country from where the purchased material will originate.</p> <p>Taking into account the nature of the proposal, the use of the envisaged resources for the construction of the wave deflector are not considered significant, especially taking into account the relative small fraction of this structure compared to the entire project.</p>	PDS p 54, 64, 67 and 120
3	Will the Project involve the use, storage, transport,	Yes. The proposal involves the dredging of sand and its translocation onto the shore,	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/>	PDS p 53-55,

<b>Question Number:</b>	<b>Questions to be Considered</b>	<b>Types and characteristics of identified potential impacts</b>  <b>Briefly describe</b>	<b>Is this likely to result in a significant effect?</b>  <b>Briefly justify</b>	<b>Document Reference</b>
	handling or production of substances or materials which could be harmful to human health to the environment or raise concerns about actual or perceived risks to human health?	whereby the suction and pumping process can create seawater turbidity and the release of pollutants from the sediment into the water column. Furthermore, the construction process, which involves the pumping of concrete into a dredged trench and the construction of the wave deflector itself, can create seawater turbidity and release of debris or pollutants into the water column.	No significant impacts are envisaged, given that silt curtains and protection booms will be utilised in order to trap or contain resulting debris, and material requirements such as concrete will be marine grade. Mitigation of any impacts will be further facilitated by continuous monitoring of water turbidity prior, during and after the construction phases. Furthermore, it is to be noted that these impacts are temporary and a settling period will be included, during which loosened sediment is allowed to resettle.	67, and 75
4	Will the Project produce solid wastes during construction, operation or decommissioning?	<p>For the construction of the foundations of the wave deflector, rock and debris material will be generated. No other wastes are envisaged by the proposal, given that all dredged sand material will be deposited on the shore and therefore no sand waste will be generated.</p> <p>No waste is envisaged to be generated by the construction of the submerged wave deflectors, given that this involves the placing of concrete boulder blocks onto the rock layer underlying the seabed.</p> <p>During the post-construction phase, no waste is envisaged to be generated by the proposal.</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/></p> <p>Given the nature of the proposal, such wastes are considered not significant, as long as the waste is managed in accordance with the relevant regulations, such as the Waste Management Regulations (S.L. 549.63).</p>	PDS p 75, 80 and 197
5	Will the project release pollutants or any hazardous, toxic or noxious	The proposal is envisaged to generate exhaust emissions by the use of dredging and construction machinery during the construction	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/></p> <p>No significant impacts are envisaged..</p>	PDS

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	substances to air or lead to exceeding Ambient Air Quality standards in Directives 2008/50/EC and 2004/107/EC?	phases. Given the nature of the proposal, such emissions during the construction phase are not considered significant.		
6	Will the Project cause noise and vibration or the releasing of light, heat, energy or electromagnetic radiation?	<p>The extensive dredging works and construction of the wave deflector, submerged toe and groynes (with the use of heavy machinery) are envisaged to potentially generate both air-borne and underwater noise.</p> <p>The site is located within protected areas hosting sensitive bird species (MT0000112 (Il-Baħar ta' Madwar Ghawdex) - SPA, and MT0000015 (L-Għadira Area) – SPA, designated under the Flora, Fauna and Natural Habitats Protection Regulations (SL 549.44)). Furthermore, the sea forms a sensitive environment for underwater noise generation, in the light of the higher sound velocity in seawater (1500 m/s), compared to air-borne noise (340 m/s), whereby such noise generation may potentially affect extensive areas.</p> <p>During operations, no additional noise and vibrations are envisaged to be generated by the proposal.</p>	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear <input checked="" type="checkbox"/></p> <p>Given the sensitive nature of the location and the extensive works as proposed, the potential generation of air-borne noise and vibration is likely and may affect birds which breed in the area, use the area for foraging, or visit during migration (MT0000112 (Il-Baħar ta' Madwar Ghawdex) - SPA, and MT0000015 (L-Għadira Area) – SPA, designated under the Flora, Fauna and Natural Habitats Protection Regulations (SL 549.44)). Nevertheless, the extent and significance of such impacts is considered unclear.</p> <p>Concerning potential underwater noise, the present marine fauna within the bay and its surroundings may be affected, especially in the light of the high velocity of underwater noise. Notwithstanding that such impacts will be of a temporary nature and limited to the construction works only, the significance of potential impacts of underwater noise on present marine fauna throughout the entire construction phase, which will take up to four months (with a</p>	PDS, p 33-52 and 210

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			further one to two months of contingency) is unclear and requires further assessment.	
7	Will the Project lead to risks of contamination of land or water from releases of pollutants onto the ground or into surface waters, groundwater, coastal waters or the sea?	Yes. During the construction phase, there is the potential risk of oil leaks and accidental spillages from machinery, both on barges and on the shore. Furthermore, there is the risk of pollutants present in the sediment to be released into the water column during dredging and deposition works. In addition, dust-laden run-off or dust-laden material may be deposited into the sea, during the construction of the structure of the wave deflector.	Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear <input checked="" type="checkbox"/> It is unclear whether any release of pollutants from the sediment during the envisaged dredging, replenishment, and construction works may alter the quality of the water body, specifically in terms of Article 4(7) of the Water Framework Directive (WFD).  With regard to the impacts relating to accidental spillages and dust dispersion, no significant impacts are envisaged, as long as any potential impact will be sufficiently mitigated by the proper application of measures identified in the Environmental Management Construction Site Regulations (S.L. 552.09).	PDS, p 194 - 195
8	Will there be any risk of accidents during construction or operation of the Project which could affect human health or the environment?	No increase in the risk of accidents is envisaged, other than 'normal' occupational risks typically associated with the proposed development processes. Access to those areas subject to development works will be restricted during the construction period.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/> No significant impacts are envisaged.	PDS

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9	Will the Project result in environmentally related social changes for example, in demography, traditional lifestyles, employment?	No, Għadira Bay is already subject to leisure and tourism activities. No social changes are envisaged by the proposed development.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/> No significant impacts are envisaged.	PDS
10	Are there any such factors which should be considered such as the consequential development which could lead to environmental impacts or the potential for cumulative impacts with other existing or planned activities in the locality?	Yes. Following the full implementation of phase 1 and 2 of the project, beach accretion and inward sand migration are envisaged. Given that the present road forms an obstruction for inward sand migration, the removal of the road and replacement by an alternative structure could be considered as consequential development. The latter, however, defines phase 3 of the full project and will be proposed through a separate development application.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/> The works concerning the road are being considered as a distinct stand-alone project and will be subject to additional studies following the implementation of phase 1 and 2. In this regard, in terms of the current proposal <i>per se</i> , no significant impacts are being envisaged. The works involved in phases 1 and 2 are not expected to affect or constrain the works on phase 3, and they are not dependent on phase 3.	PDS p 10-12 and 33-34
11	Is the project located within or close to any areas which are protected under international, EU or national or local legislation for their ecological, landscape, cultural or other value, which could be affected by the Project?	The proposed development is subject to the following Natura 2000 sites: - MT0000105 (Zona fil-Baħar fil-Grigal ta' Malta): SAC – International Importance (Marine); - MT0000112 (Il-Baħar ta' Madwar Ghawdex): SPA; and - MT0000015 (L-Għadira Area): SPA and SAC, as designated under the Flora, Fauna and Natural Habitats Protection Regulations (SL 549.44). The marine area is specifically	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear <input type="checkbox"/> The proposed development involves the replenishment of the beach by translocating dredged sediment from the near shore onto the shore. Therefore potentially significant changes to the physical characteristics of the bay and its potential environmental impacts may occur. Such impacts would relate to aspects such as: - Irreversible alteration/obliteration of seabed habitats, which may affect the present ecosystem	PDS p33-54

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		<p>important as it constitutes Annex 1 Habitats 1110 (Sandbanks), 1170 (reefs) and 1120* (<i>Posidonia</i> beds), of which the latter is a priority habitat.</p> <p>The proposal involves extensive interventions in the marine environment, which forms the key element of the above protected areas.</p> <p><i>Posidonia</i> beds also constitute an indicator of ecological status/quality of the water body under the EU Water Framework Directive (WFD). Any potential deterioration of such ecological status requires assessment in terms of the requirements of Article 4.7 of the WFD.</p>	<p>composition, and which in its turn may affect the wider ecosystem functioning;</p> <ul style="list-style-type: none"> <li>- Potential disturbance in ecosystem species composition through the creation of novel habitats available to colonisation;</li> <li>- Potential disturbance to infaunal inhabitants and their associated community structure, which forms an important component of the food web;</li> <li>- Potential disturbance from noise and light pollution on the present marine fauna and terrestrial protected areas;</li> <li>- Potential long-term alterations to the beach dynamics and wave and current patterns, which in its turn may affect the whole bay ecosystem;</li> <li>- Potential alterations to the natural water circulation patterns and sediment transport regimes, and its associated subsidiary impacts (nutrient cycling, sediment scouring/accumulation); and</li> <li>- Potential disturbance/alteration to the status/quality of the water body, in terms of EU Water Framework Directive.</li> </ul>	
12	Are there any areas on or around the location which are important or sensitive for reasons of their ecology e.g. marshlands, wetlands, watercourses or other water bodies, the coastal	Reply to Question 11 refers.	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear <input type="checkbox"/></p> <hr/> <p>Reply to Question 11 refers.</p>	PDS p33-54

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	zone, mountains, forests or woodlands, which could be affected by the Project?			
13	Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the Project?	Reply to Question 11 refers.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear <input type="checkbox"/> Reply to Question 11 refers.	PDS p33-54
14	Are there any inland, coastal, marine or underground waters (or features of the marine environment on or around the location which could be affected by the Project?	Reply to Question 11 refers.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear <input type="checkbox"/> Reply to Question 11 refers.	PDS p33-54
15	Are there any areas or features of high landscape or scenic value on or around the location which could be effected by the Project?	To the north of the beach, the coastal cliffs are scheduled as an Area of High Landscape Value (AHLV) (Govt. Notice 400 of 1996). The proposal involves the seawards extension of the beach surface with a varying width of about 30m, increasing the beach surface area with 30,000 to 38,000 m <sup>2</sup> . Furthermore a wave	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/> Given the proposed change in beach surface area, and the proposed hard structures which will reach above the water surface, the proposal may lead to slight changes in the landscape character of the bay, whereby the coastal cliffs to the North of the beach	PDS, p33-52

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		deflector, toe and groin field will be constructed, of which the wave deflector and part of the groynes will reach above the water surface.	are scheduled as an AHLV. However, the impacts on such designation of the coastal cliffs <i>per se</i> are not considered significant.	
16	Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the Project?	<p>Yes, the beach directly abuts the main road at Għadira, which is frequently used for access to recreation and tourism facilities in the area. Given that all construction activities, with the exception of the construction of the wave deflector, will occur on the beach and at sea, it is not envisaged that the said transport route will be affected by the proposed development.</p> <p>Furthermore, the said road will be upgraded following the implementation of the current proposal, to also allow inward sand migration. Such works will form part of a separate development application.</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/></p> <p>No significant impacts are envisaged, given that most works will occur on sea and will not intervene with the existing road.</p>	PDS p14
17	Are there any transport routes on or around the location which are susceptible to congestion or which cause environmental problems, which could be affected by the Project?	<p>Yes, the beach directly abuts the main road which is located immediately adjacent to the sandy beach and forms a physical obstruction for natural inward sand migration for dune formation. Given the objective of this proposal to promote such inward sand migration, the issue of sand accumulation on the road during windy conditions, is envisaged to intensify. Nevertheless, the upgrading of the road is proposed to follow the implementation of the</p>	<p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/></p> <p>No significant impacts are envisaged, given that such problems caused by the road imply merely an intensification of an already existing issue and will be eventually mitigated through the proposed upgrading of the said road.</p>	PDS p14

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		current proposal. However such works will form part of a separate development application.		
18	Is the Project in a location where it is likely to be highly visible to many people?	The proposal is located within a natural bay, frequently visited for its leisure and recreational purposes. It is therefore highly visible and subject to sensitive visual receptors.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear <input type="checkbox"/> Notwithstanding that the beach extension per se will be visually identical to the existing beach, and the proposed alongshore toe will be submerged, likely significant impacts on the visual amenity of the area are envisaged given the visual sensitivity of the bay, the actual extension in beach surface area, and the proposed construction of permanent groynes which will be partly above sea level and reaching from the rocky shore towards the toe, perpendicular to the beach.	PDS, p 33-52
19	Are there any areas or features of historic or cultural importance on or around the location that could be affected by the Project?	Yes, the area (notably the seabed) may potentially include features of marine archaeology.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear <input type="checkbox"/> Due to the extensive dredging and deposition works in the bay and the proposed construction of permanent hard structures (submerged toe, wave deflector, and groynes), potential damage to submerged marine archaeology features may occur.	PDS, p 53-54
20	Is the Project located in a previously undeveloped area where there will be loss of greenfield/ODZ land?	Given that the project involves works related to the beach and the marine environment, no loss of actual greenfield land is envisaged. Nevertheless, the project will alter the natural seabed and take up surface area of the beach and seabed for the construction of the proposed hard structures.	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unclear <input type="checkbox"/> Yes, given that the proposal is envisaged to significantly alter land (beach) and seabed surface area which is located on the rural coast.	PDS, p 33-52

Question Number:	Questions to be Considered	Types and characteristics of identified potential impacts Briefly describe	Is this likely to result in a significant effect? Briefly justify	Document Reference
21	Are there existing land uses on or around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying which could be affected by the project?	The existing land uses in the area surrounding the beach include: <ul style="list-style-type: none"> <li>- touristic establishment,</li> <li>- residential properties;</li> <li>- a nature reserve; and</li> <li>- agricultural fields.</li> </ul>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/> Given that the proposal involves the replenishment of the existing beach and related works to stabilize the altered coastal dynamics, none of the said land uses, are envisaged to be significantly adverse affected.	PDS, PA GeoServer
22	Are there any plans for future land uses within or around the location which could be affected by the Project?	None are known of on or around the location of the proposal.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/> No significant impacts are envisaged.	PDS
23	Are there any areas on or around the location which are densely populated or built-up, that could be affected by the project?	No such areas, which could be affected by the project, are known of. The nearest densely populated area is the Mellieħa village, but impacts arising from the project are not envisaged.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/> No significant impacts are envisaged.	PDS
24	Are there any areas on or around the location which	No such areas, which could be affected by the project, are known of.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/> No significant impacts are envisaged.	PDS

Question Number:	Questions to be Considered	Types and characteristics of identified potential impacts Briefly describe	Is this likely to result in a significant effect? Briefly justify	Document Reference
	are occupied by sensitive land uses e.g. hospitals, schools, places of worship, community facilities which could be affected by the project?			
25	Are there any areas within or around the location which contain important, high quality or scarce resources e.g. groundwater, surface waters, forestry, agriculture, fisheries, tourism, minerals, which could be affected by the project?	The site forms part of a sensitive coastal bay ecosystem, which contains high quality ecosystem functions and services referring to both the beach and the marine environment. Examples of such ecosystem services are: - Supporting services (e.g.: habitats for species, primary production, maintenance for genetic diversity and life-cycle support); - Regulating services (e.g.: erosion prevention, water purification, carbon sequestration); - Provisioning services (e.g.: fisheries); - Cultural services (e.g.: recreational and tourism)	Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear <input checked="" type="checkbox"/> It is unclear whether certain ecosystem services will be affected and to what extent their value may be altered.	PDS
26	Are there any areas within or around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded	No such areas are known of.	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Unclear <input type="checkbox"/> No significant impacts are envisaged.	PDS

<b>Question Number:</b>	<b>Questions to be Considered</b>	<b>Types and characteristics of identified potential impacts</b>  <b>Briefly describe</b>	<b>Is this likely to result in a significant effect?</b>  <b>Briefly justify</b>	<b>Document Reference</b>
	that could be affected by the project?			
27	Is the project location susceptible to earthquakes, or subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions e.g. temperature inversions, fogs, severe winds, which could cause the project to present environmental problems?	The proposal is located in the marine environment, whereby bays are continuously prone to natural forces, including sea storms and currents.	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> Unclear <input checked="" type="checkbox"/></p> <p>The interventions may affect the dynamics of the beach, and their interaction with the natural forces. Due to the potential disruption of the natural geomorphologic equilibrium, the need for longer-term interventions to maintain the artificial beach configuration may also be required.</p>	PDS

#### **4. EIA Screening Conclusion and recommended way forward**

##### **4.1. EIA Screening**

The above EIA screening concludes that the proposed development qualifies for an EIA as per Schedule I Category II Section 1.0.2.1, 6.2.2.1, 6.2.2.2, 6.2.2.3 and 6.2.2.4 of the EIA Regulations, 2017 (S.L. 549.46). The EIA Report would need to assess the following aspects:

- Implications of the proposed interventions on the overall physical characteristics and natural dynamics of the beach and coastal area itself;
- Irreversible alteration/obliteration of seabed habitats, which may affect the present ecosystem composition, and which in its turn may affect the wider ecosystem functioning;
- Potential disturbance in ecosystem species composition through the creation of novel habitats available to colonisation;
- Potential disturbance to infaunal inhabitants and their associated community structure, which involve an important component of the food web;
- Potential long-term alterations to the beach dynamics and wave and current patterns, which in its turn may affect the whole bay ecosystem;
- Implications on the protected habitats present within the area of influence, as protected under the Flora, Fauna and Natural Habitats Protection Regulations (S.L. 549.44);
- Potential alterations to the natural water circulation patterns and sediment transport regimes, and its associated subsidiary impacts (nutrient cycling, sediment scouring/accumulation);
- Potential disturbance/alteration to the status/quality of the water body, in terms of EU Water Framework Directive, specifically in terms of Article 4.7 (WFD).
- Potential implications of the proposed beach extension and hard structures on the visual amenity of the bay;
- Potential disturbance from noise generation on the present marine fauna and terrestrial protected areas;
- Potential implications of the proposed development on the present ecosystem functions and ecosystem services of the area; and
- Potential damage to features of marine archaeology.

##### **4.2. Screening in terms of the Flora, Fauna and Natural Habitats Protection Regulations, (S.L. 549.44)**

The proposed development is subject to the following Natura 2000 site:

- MT0000105 (Zona fil-Baħar fil-Grigal ta' Malta): Special Area of Conservation (SAC) – International Importance (Marine);
- MT0000112 (Il-Baħar ta' Madwar Ghawdex): Special Protection Area (SPA); and
- MT0000015 (L-Għadira Area): SPA and SAC.

In view of the above designations, this proposal has been screened in terms of Regulation 19 of S.L. 549.44. From the information submitted through the planning application, PA/01820/18, the proposed development may cause significant impacts on the protected species, habitats and the overall integrity of the aforementioned protected sites, as already specified in Section 4.1. In this regard, the proposal requires the submission of an Appropriate Assessment (AA) in terms of Regulation 19(1) of the Flora, Fauna and Natural Habitats Protection Regulations, 2006 (S.L. 549.44).

### **4.3. Screening Disclaimer**

The above screening results, the ensuing conclusions and recommendations are without prejudice to any required changes or updates should the development proposal be eventually modified or should the information/assumptions provided turn out to be incorrect. Any deviations of the proposal from this submission would need to be re-assessed and the merits of this screening would need to be re-opened.