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TIDAL LAGOON SWANSEA BAY PLC.
Proposed Loading Area and Breakwater at Dean Quarry, Lizard, Cornwall
EIA Screening and Scoping Request Report

July 2014

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TIDAL LAGOON SWANSEA BAY

**Proposed Loading Causeways and Breakwater at Dean Quarry, Lizard, Cornwall
EIA Screening and Scoping Request Report**

July 2014

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CONTENTS

1	INTRODUCTION	1
2	DEVELOPMENT SITE DESCRIPTION.....	4
3	REASON FOR THE PROPOSED DEVELOPMENT	7
4	THE PROPOSED DEVELOPMENT.....	8
5	ENVIRONMENTAL IMPACT ASSESSMENT AND THE ENVIRONMENTAL STATEMENT	12
6	CONTENT AND FORMAT OF THE ENVIRONMENTAL STATEMENT	14
7	CLARIFICATION OF DETAILED ASSESSMENTS WITHIN THE ENVIRONMENTAL STATEMENT.....	19
	Details of the proposed development and alternatives that have been considered	19
	Planning Policy Context	19
	Landscape, Seascape and Visual Impact Assessment	20
	Terrestrial and Marine Noise & Vibration.....	25
	Air Quality (Dust)	29
	Coastal Processes, Sediment Transport and Contamination	30
	Marine Ecology, Marine Mammals and Fisheries.....	37
	Subtidal Survey	40
	Terrestrial Ecology.....	45
	Hydrology, Groundwater, Flood Risk, Land Quality and Geology.....	51
	Terrestrial and Marine Archaeology and Heritage	52
	On-Shore Transport and Access	55
	Navigation and Marine Transport Assessment	57
	Economy, Tourism and Recreation (Including Public Rights of Way).....	58
	Cumulative Effects and Inter-relationships.....	64
8	HABITATS REGULATION ASSESSMENT	66
9	CONCLUSION	67
10	REFERENCES	68
11	APPENDICES	69

TABLES

Table 6.1: Environmental Impact Matrix	16
Table 6.2: Assessment Matrix	18
Table 7.1: Statutory and Non-Statutory Sites.....	47
Table 7.2: Potential Value of Ecological Receptors	49

FIGURES

Figure 1.1: Location of Dean Quarry and the Proposed Loading Causeways and Breakwater	1
Figure 2.1: Exceptional Load Transport Route	6
Figure 4.1: Proposed Loading Area and Breakwater Design	9
Figure 4.2: Proposed development in relation to the South West Coast Footpath	10
Figure 4.3: Proposed Loading Area and Breakwater within the Manacles MCZ	11
Figure 7.1: Zone of Theoretical Visibility	21
Figure 7.2: Proposed Photomontage Viewpoint Locations	23
Figure 7.3: Proposed Noise Monitoring Locations.....	27
Figure 7.4: Subtidal and Intertidal Survey Site Locations (survey 13 – 15 July 2014).....	41
Figure 7.5: Baseline Context for the Assessment of Cumulative Effects	65

Glossary

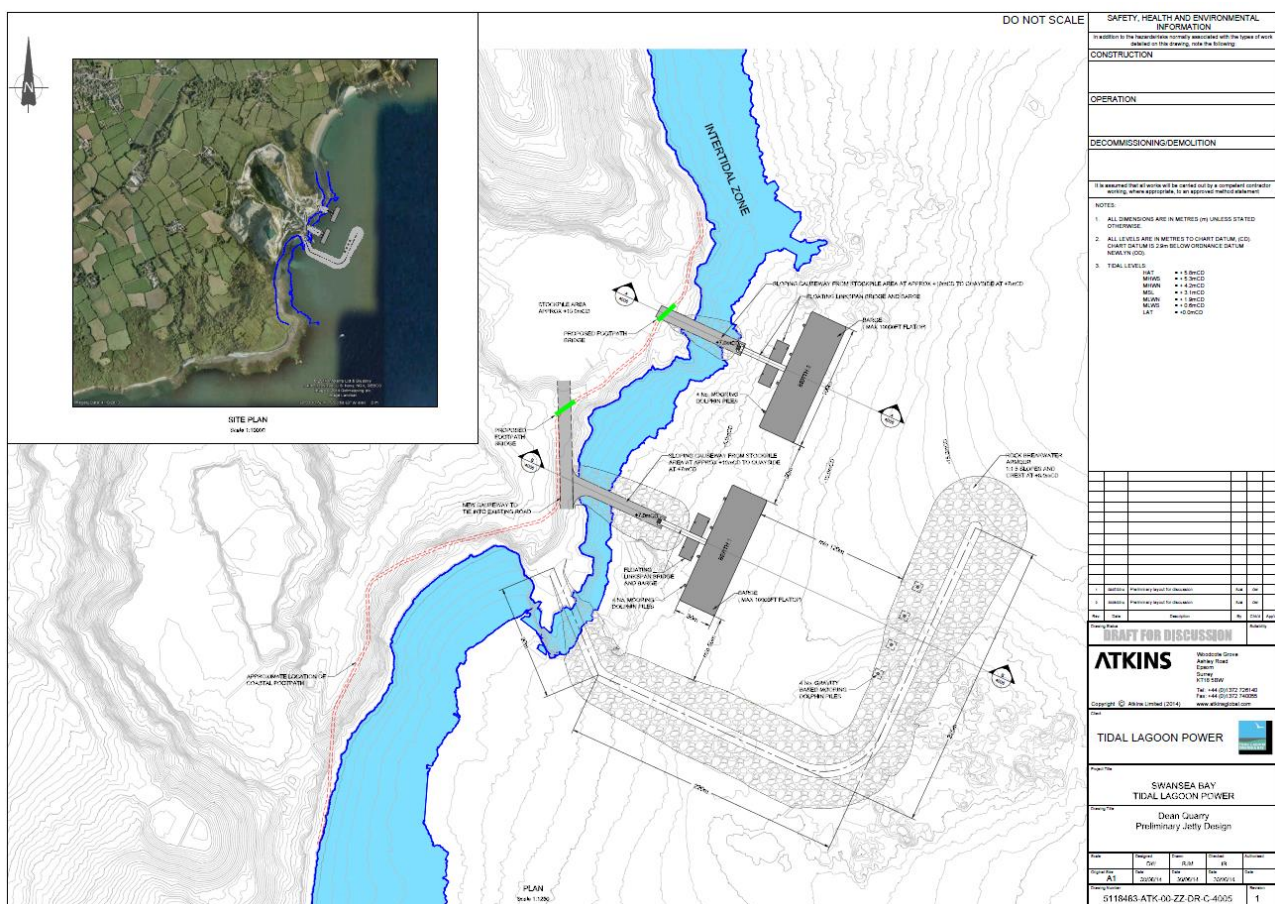
AWAC:	Acoustic Wave and Current Meter
AL:	Advisory Leaflet
AONB:	Area of Outstanding Natural Beauty
BAP:	Biodiversity Action Plan
CD:	Chart Datum
CEFAS:	Centre for Environment, Fisheries and Aquaculture Science
CCW:	Countryside Council for Wales
CGS:	County Geology Site
DCO:	Development Consent Order
DCLG:	Department for Communities and Local Government
DEFRA:	Department for Environment, Food and Rural Affairs
DoE:	Department for the Environment
EA:	Environment Agency
EIA:	Environmental Impact Assessment
EMS:	European Marine Site
ERCIS:	Environmental Records Centre for Cornwall and the Isles of Scilly
ES:	Environmental Statement
GES:	Good Environmental Status
GTA:	Guidance on Transport Assessment
HGV:	Heavy Goods Vehicle
IAQM:	Institute of Air Quality Management
IFA:	Institute of Field Archaeologists
LCA:	Landscape Character Area
LDP:	Local Development Plan
LNR:	Local Nature Reserve
LPA:	Local Planning Authority
LVIA:	Landscape, Seascape and Visual Impact Assessment
MCZ:	Marine Conservation Zone
MLT:	Marine Licensing Team
MMO:	Marine Management Organisation
MSFD:	Marine Strategy Framework Directive
NE:	Natural England
NNR:	National Nature Reserve

NPPF:	National Planning Policy Framework
NPSE:	National Policy Statement for England
NRW:	Natural Resources Wales
NSIP:	Nationally Significant Infrastructure Project
PRoW:	Public Right of Way
PSA:	Particle Size Analysis
RBMP:	River Basin Management Plan
ROMPs:	Review of Mineral Planning Permissions
SACs:	Special Areas of Conservation
SCA:	Seascape Character Assessment
SPA:	Special Protection Area
SPD:	Supplementary Planning Documents
SPG:	Strategic Policy Guidance
SSSI:	Site of Special Scientific Interest
TLSB:	Tidal Lagoon Swansea Bay
TPA:	Tonnes Per Annum
WFD:	Water Framework Directive
ZTV:	Zone of Theoretic Visibility

1 INTRODUCTION

1.1 This Environmental Impact Assessment (EIA) Screening and Scoping Request Report has been prepared by Wardell Armstrong LLP (the Agent) on behalf of Tidal Lagoon Swansea Bay PLC. (TLSB) (the Applicant) in respect of a proposal to create marine loading areas and a breakwater and associated works at Dean Quarry, St Keverne, Helston, Cornwall, TR12 6NY.

Figure 1.1: Location of Dean Quarry and the Proposed Loading Causeways and Breakwater



1.2 The Applicant is proposing to construct and operate the loading area. The proposed development (the Project) would include;

- the construction of two new loading points, comprising causeways, floating linkspan bridges and dolphin piles to allow safe berthing, together with a breakwater to allow loading of material at all states of the tide;

- works to improve and extend the existing quarry access to the loading area, including footbridges over the public right of way;
- the use of the above works.

1.3 The Local Planning Authority (LPA), Cornwall Council, is responsible for land-use planning to the mean low water mark at Dean Quarry and the Marine Management Organisation (MMO) is responsible for marine planning to the mean high water mark. Under the Marine and Coastal Access Act 2009, a marine licence from the MMO is required for the deposition or removal of substances or objects from the seabed or elsewhere in tidal waters. This means that there is a shared responsibility between the LPA and the MMO for planning matters within the intertidal zone between the mean low water mark and the mean high water mark.

1.4 In coastal areas, such as the intertidal zone, a co-ordinated consenting process, known as the '*coastal concordat*', was launched in November 2013. The concordat aims to reduce unnecessary regulatory duplication and provide applicants with a single point of entry spanning all of the regulatory systems. Discussions have taken place between the applicant/agent, LPA and MMO and it has been agreed that the MMO will be the lead authority in respect of the proposed development at Dean Quarry.

1.5 In addition, under Section 126 of the Marine and Coastal Access Act (2009) the MMO has specific duties relating to marine conservation zones (MCZs) (the proposed development lies within the Manacles MCZ) and marine licence decision making. This is because s.126 applies where;

- (a) a public authority has the function of determining an application (whenever made) for authorisation of the doing of an act, and
- (b) the act is capable of affecting (other than insignificantly)—
 - (i) the protected features of an MCZ;
 - (ii) any ecological or geomorphological process on which the conservation of any protected feature of an MCZ is (wholly or in part) dependent.

The proposed development will be screened in the light of the above criteria.

- 1.6 The nature, scale and location of the proposed development application will be determined by the MMO and the LPA under the Marine Works (Environmental Impact Assessment) Regulations 2007 and the Town and Country Planning (Environmental Impact Assessment) Regulations 2011. As the MMO will be lead authority, the Marine Works (Environmental Impact Assessment (EIA) Regulations) are hereinafter referred to as the 'EIA Regulations' and used as the legislative source for this document.
- 1.7 This document has been prepared under Part 2 (11) and Schedule 2 of the EIA Regulations to request a formal Screening Opinion from the MMO. The screening process involves determining whether or not a development is required to undertake an EIA and prepare an Environmental Statement (ES) for the proposed development under Part 3 (12) and Schedule 3 of the EIA regulations. However, if a developer feels it is likely that the development will constitute EIA development, a Scoping Request can be prepared under Part 3 (13) and Schedule 4 of the EIA Regulations to identify the content and extent of the information to be elaborated and supplied by the developer to the competent authority for a formal Scoping Opinion.
- 1.8 The proposed development has been identified within Annex II of the EIA Directive (85/337/EEC) under Section 10, sub-paragraph (d) *Construction of roads, harbours, including fishing harbours, and airfields (projects not listed in Annex I)* as a project likely to require EIA.
- 1.9 Tidal Lagoon Swansea Bay (TLSB) PLC consider that the proposed development will require an EIA in terms of its nature, size and location (within the Manacles Marine Conservation Zone (MCZ)) and as such, the marine licence and planning application will be accompanied by an ES. This document therefore constitutes a Scoping Request and provides background information to assist the MMO and LPA in forming a Scoping Opinion in line with the EIA Regulations.
- 1.10 The main function of scoping for the proposed development is to identify the potentially significant environmental effects that will need to be assessed in

the EIA in order to inform the scoping opinion. This exercise is therefore intended to confirm: -

- The nature of the development;
- The breadth of the EIA;
- The range of key issues;
- The extent to which each environmental topic area needs to be investigated.

1.11 It should be noted that scoping is an identification process that will need to be kept under review and continue throughout the EIA process in respect of the proposed development should new information come to light.

2 DEVELOPMENT SITE DESCRIPTION

2.1 The Application Site falls within and seaward of Dean Quarry, which lies on the south-eastern coast of the Lizard Peninsula in Cornwall. The existing quarry site covers an area of 44ha and lies within an Area of Outstanding Natural Beauty (AONB) and a Site of Special Scientific Interest (SSSI), as well as extending seawards into the Manacles Marine Conservation Zone (MCZ). The South West Coastal Footpath runs between the Quarry and the sea. The nearest major settlement is Helston which is 16km directly north west from the site. The village of St Keverne lies approximately 1.6km to the north north-west of the site.

2.2 The site is located approximately 12km to the east of Mullion and Falmouth lies approximately 12km to the north.

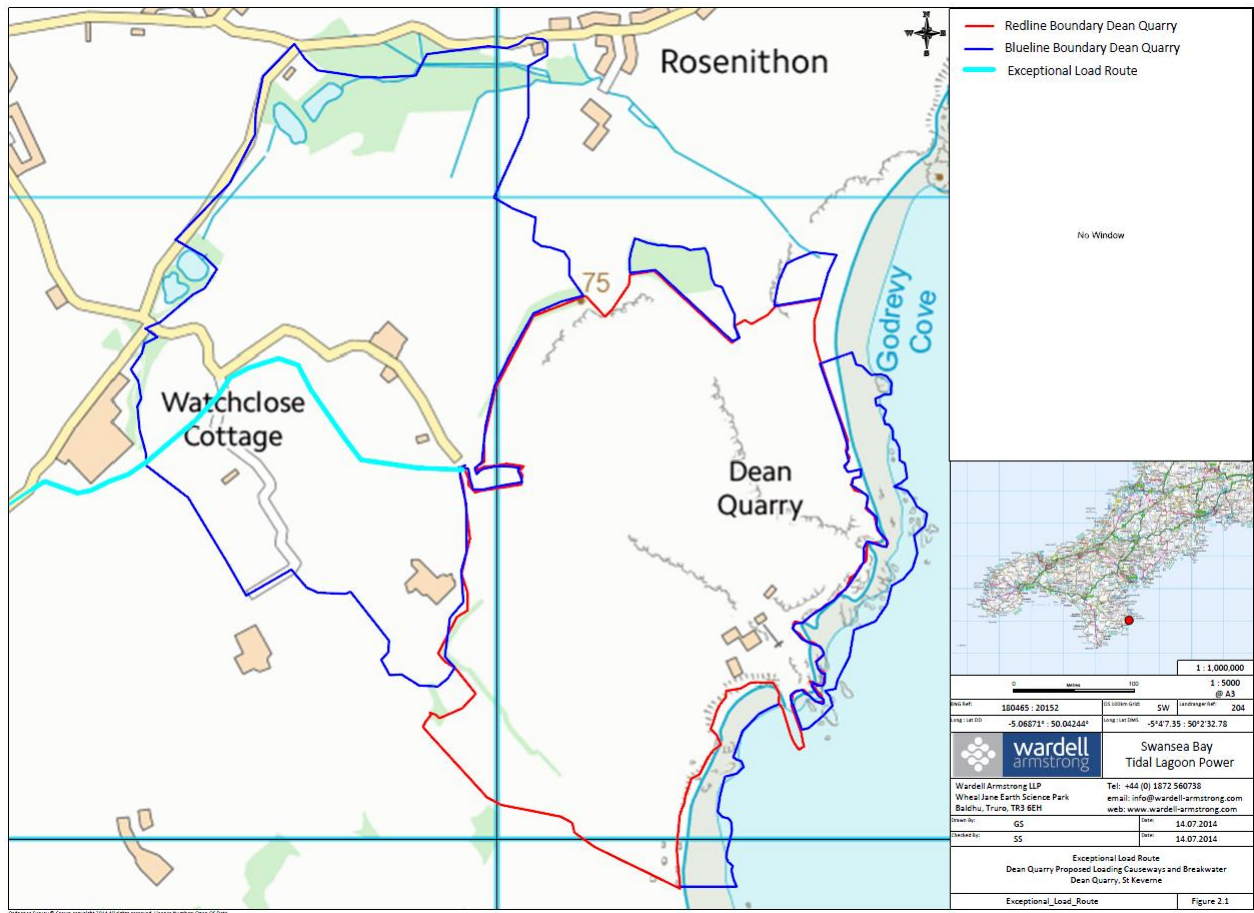
History of the Site

2.3 The quarrying of gabbro first commenced at Dean Quarry towards the end of the 19th century. Although the majority of stone was initially used for road construction locally there is some evidence that sailing vessels were also loaded with stone for coastal shipment. There was little activity at Dean Quarry between the two world wars. In 1946 LG Tom & Company recommenced quarrying at Dean Quarry with the principle objective of

shipping stone to the London market. In 1947 LG Tom & Company negotiated a 10 year sole selling agency with Cawoods in London and began discharging stone at the Cawoods Thameside Mulberry Wharf. Such shipments continued for ten years at a rate of approximately 50,000tpa. In 1957 LG Tom & Company sold the Quarry to FT Everard & Sons Limited, the coastal ship owners who continued to trade with Cawoods. In 1970 Cawoods purchased Dean Quarry from Everards and invested extensively in new crushing and screening plant, followed by the provision of an asphalt plant to serve the local market. A number of extensions to the Quarry have been granted planning permission.

- 2.4 The portfolio of planning permissions at Dean Quarry was subject to a Review of Mineral Planning Permissions (ROMPs) review as required by the Environment Act 1995 and a consolidating ROMP decision for the Quarry was issued by Cornwall Council on 13th January 2012. A time limit of 8 August 2035 has consequently been applied to all quarrying activity at the site.
- 2.5 Vehicular access to the existing jetty, and the proposed loading area, is currently provided via a private quarry haul road through Dean Quarry. Vehicular access to Dean Quarry itself can be gained via the B3293, taking the B3294 and an unnamed road towards Rosenithion before entering the Quarry and the private haul road. An 'exceptional load route' across adjoining farmland is available when necessary in order to allow such loads to avoid the narrow, undulating lane which provides vehicular access to the Quarry for standard road vehicles. This exceptional load route is shown on Figure 2.1.

Figure 2.1: Exceptional Load Transport Route



2.6 The Quarry has been dormant for approximately 6 years.

Dean Jetty

2.7 When quarrying operations at Dean Quarry recommenced in 1946 it is recorded that the loading jetty at the Quarry was only 30ft long, suitable only for loading small sailing ships carrying perhaps 25-30 tonnes of stone. In order to accommodate the size of ship needed to transport stone to market (500-600 tonnes capacity) it was necessary to lengthen the jetty. LG Tom & Company accomplished this in 1946 by towing from London a steel barge (a 'London Lighter') and sinking this in position to increase the length of the jetty. This continued to be satisfactory until August 1973 when it was

discovered that severe weather had broken the scuppered vessel and, in 1974, repairs to the jetty were undertaken.

2.8 The land-based Application Site lies within 'Sensitive Areas' as described by the EIA Regulations. The site lies within land notified under section 28(1) of the Wildlife and Countryside Act 1981 i.e. the Coverack to Porthoustock Site of Special Scientific Interest (SSSI) and within An area of Outstanding Natural Beauty (AONB) designated as such by an order made by Natural England under Section 82(1) of the Countryside and Rights of Way Act 2000, i.e. the South Coast Western Area of Outstanding Natural Beauty (AONB)).

2.9 The marine based application site lies within the Manacles MCZ (designated 21st November 2013) and the South West Coast Footpath runs through the site.

2.10 Within 2km of the site, the following are present:

- Multi-Period archaeological landscape CO673
- National Trust owned Lowland Point

2.11 These sites are shown on Figure 7.5. The potential impacts that the proposed development would have on these sites will be identified within the ES and mitigation strategies would be implemented to avoid or reduce negative impacts as a result of the development to a minimal level.

3 REASON FOR THE PROPOSED DEVELOPMENT

3.1 TLSB is proposing to develop a tidal energy generating station in Swansea Bay (the Bay), South Wales. The Project is a Nationally Significant Infrastructure Project (NSIP) as defined in the Planning Act 2008 (PA 2008) and an application for a Development Consent Order (DCO) and Marine Licence has been submitted to the Planning Inspectorate and the Marine Licencing Team (MLT) of Natural Resources Wales (NRW) respectively. Further information

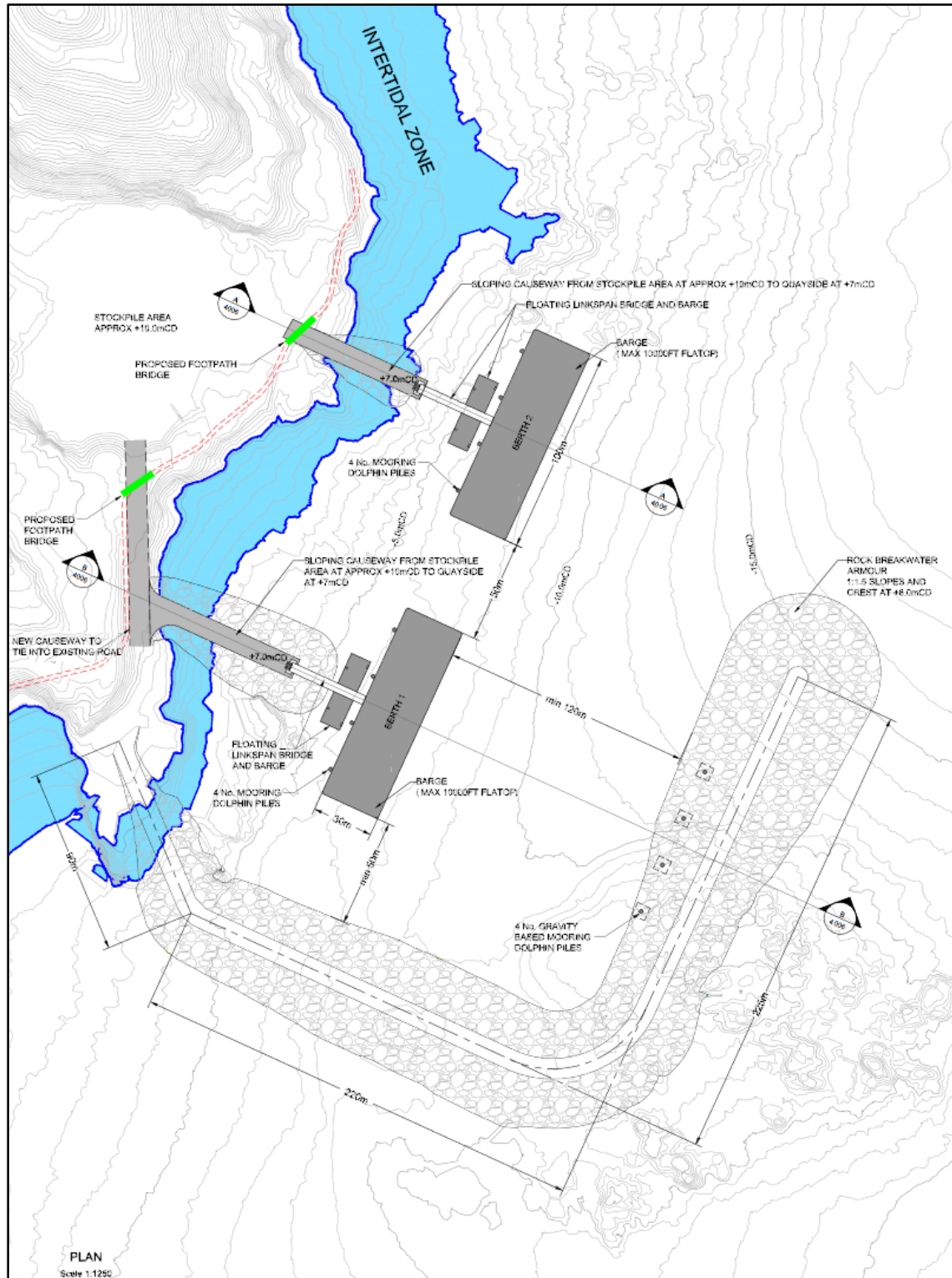
about the tidal energy generating station and the ongoing Examination process can be found on the Planning Inspectorate website (<http://www.planningportal.gov.uk/planning/planninginspectorate>).

- 3.2 To construct the seawalls for the tidal energy generating station rock armour is required and the source of this rock has been identified within the TLSB Environmental Statement and Development Consent Order application, as Dean Quarry in Cornwall.
- 3.3 It is proposed that works on the loading area and breakwater at Dean Quarry will commence in March/April 2015 with the first stone being transported from the quarry at the end of May / June 2015.

4 THE PROPOSED DEVELOPMENT

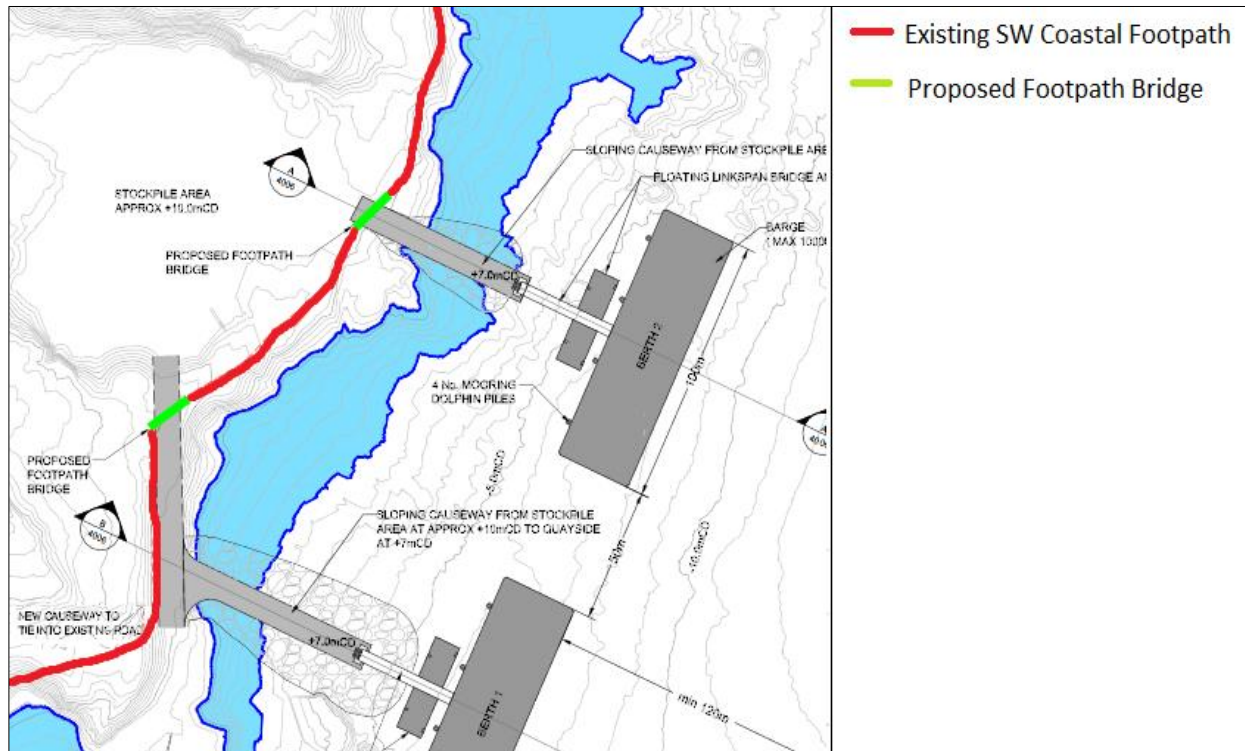
- 4.1 The construction phase of the proposed development comprises:-
 - a) The creation of loading facilities and a breakwater to accommodate vessels, up to 10,000T located within the intertidal and subtidal area to the north of the existing jetty. The southern causeway would extend around 85m from the shore, with the northern causeway extending 70m. The end of each causeway would support a floating bridge link with a span of 40m, the seaward end of which would be supported by a barge. The loading causeways and breakwater would be constructed by using armour stone, extracted from Dean Quarry. The level upper surface of the structures would be dressed using fine aggregate material also sourced from within the Quarry. Piles would be inserted in order to assist and secure the mooring of vessels.
 - b) blasting of stone from the quarry.
 - c) The stockpile area would be retained within the body of the quarry.

Figure 4.1: Proposed Loading Area and Breakwater Design



- d) The existing vehicular access from the Quarry to the loading area would be improved and extended, such works would include the installation of footbridges over the public right of way (the South West Coast Footpath).

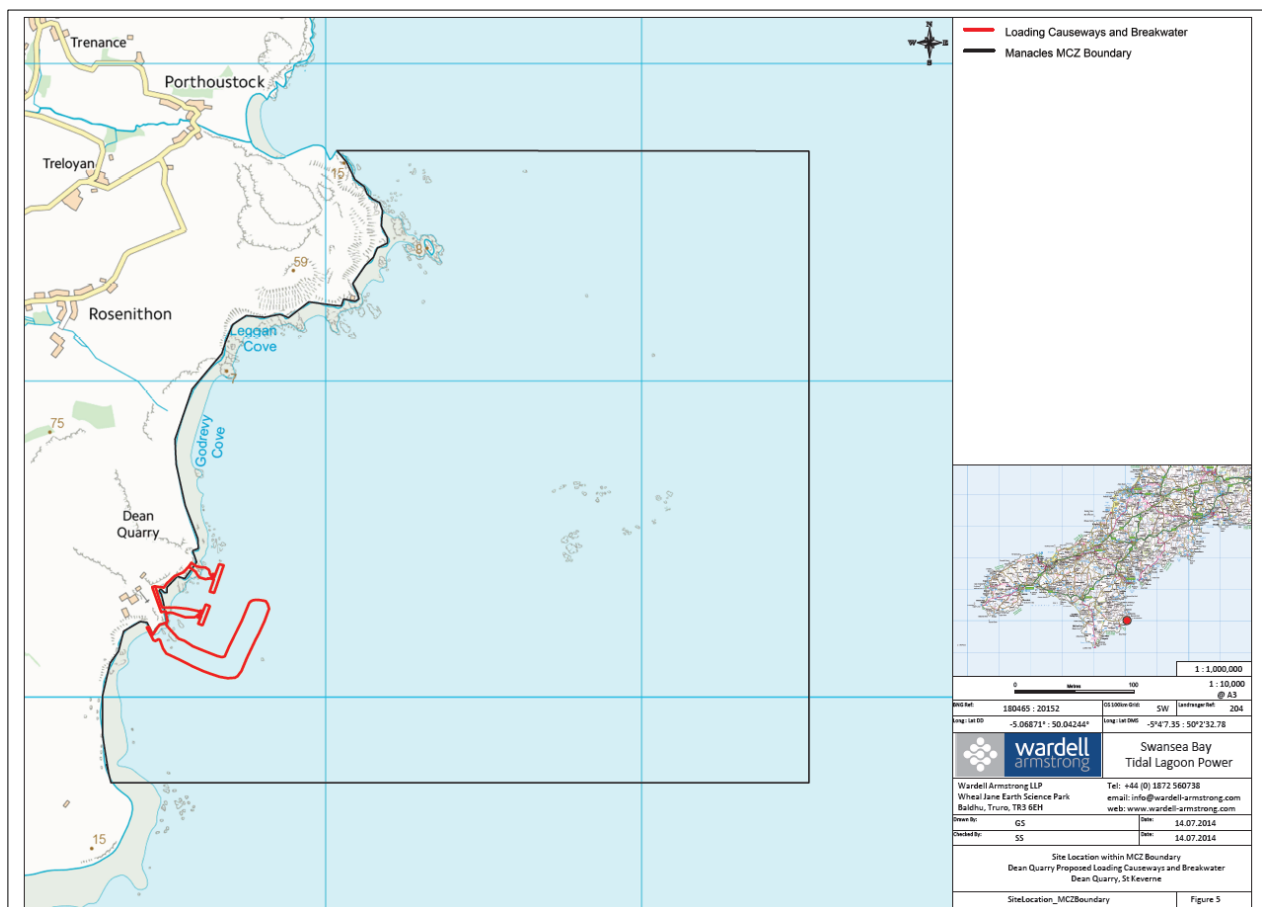
Figure 4.2: Proposed development in relation to the South West Coast Footpath



- 4.2 It is proposed to export stone from the Quarry by creating loading causeways and a breakwater within the Manacles MCZ which was designated on 21 November 2013. The MCZ extends around the coastal boundary of Dean Quarry, including the existing jetty. The MCZ boundary, while extending around the coastal boundary of the adjacent West of England Quarry (which lies approximately 1km to the north at Porthoustock), excludes the jetty at West of England Quarry. The Manacles MCZ is described as “an inshore site located on the southern coast of Cornwall which covers a total area of approximately 3.5km². The MCZ extends 2km from the coastline to encompass a series of large underwater rocky outcrops, known as The Manacles”. Figure 4.3 shows the proposed development in the context of the MCZ.

- 4.3 In addition to the impact of the construction of the proposed development the EIA will also need to include an assessment of the use of the proposed development. The operational phase of the proposed development comprises;
- The use of the loading area by up to 4 x 10,000T barges, each measuring a maximum of 106m in length and 30m wide with a draft of 5.5 metres. The barges are unlikely to be self-propelled and would therefore be towed by tugs for mooring purposes. It is proposed that the coastal movement of barge traffic would take place on a 24/7 basis as tide and weather conditions permit.
 - blasting of stone from the quarry.
 - The transport of stone from the Quarry to the stockpile area and its subsequent transport and loading within the coastal barges. It is proposed that barge loading operations would take place at any time, as per the existing planning permission for quarrying and loading at Dean Quarry, in order to optimise favourable tide and weather conditions.

Figure 4.3: Proposed Loading Area and Breakwater within the Manacles MCZ



- 4.4 The proposed development would be required for the current operational life of the Quarry, i.e. until 8th August 2035. When the loading area and breakwater is no longer required it could be retained in-situ, partially removed or completely removed. The current proposal suggests that the loading area and breakwater would be removed at the end of its permitted life, although it is proposed that a final decision regarding this matter is deferred until 6 months prior to site closure when a more informed decision may be available.

5 ENVIRONMENTAL IMPACT ASSESSMENT AND THE ENVIRONMENTAL STATEMENT

- 5.1 Due to the fact that the proposed development falls under Annex II of the EIA Directive Section 10, sub-paragraph (d), it is likely that an EIA will be required. EIA is a process that is intended to ensure that planning permission is not granted by a public authority for any public or private project that is likely to have significant environmental effects (an “EIA development”) until a prior assessment has been undertaken of the likely significant environmental effects of that project.
- 5.2 This document acts as both a Screening and Scoping Request, although it is considered likely that the development will be EIA. The decision maker shall not grant planning permission or a marine licence for an EIA development unless it has first taken the environmental information into consideration and then stated in its decision that it has done so. The environmental information that must be taken into account comprises the ES, including any further information submitted by the developer, any representations made by any party required by the EIA Regulations to be invited to make representations, and any representations duly made by any other person about the environmental effects of the development.
- 5.3 The requirements of the EIA process are set out in European Council Directive No. 85/337/EEC, as amended by Council Directive No.97/11/EC, Council Directive No.2003/35/EC and No. 2014/52/EU of the European Parliament and Council.

5.4 The process of EIA as set out in the EIA Regulations comprises the following key stages;

- Determining whether a project is an EIA application (Screening Request).
- Agreeing the scope of the ES to be prepared by the developer (scoping).
- Publishing the submission of the planning application (and marine licence) with the ES to consultation bodies, with other statutory consultees and third parties, including non-statutory consultees and members of the public.
- If necessary, the submission of further information at the request of the decision maker by the developer.
- Taking into account the environmental information submitted by the developer, statutory and other consultees and any representations from members of the public before determining the planning application (and marine licence).
- Informing the public and the Secretary of State of the determination of the application for the development.

5.5 The EIA process identifies the likely 'significant' environmental effects of proposed developments by establishing the existing environmental situation, which pertains before the development is undertaken (the baseline), identifying the environmental effects of the proposed development for the construction, operational and decommissioning phases of the proposed development and assessing the likely significance of those effects. Mitigation measures will, where appropriate, aim to either eliminate or reduce likely significant adverse effects associated with the proposed development and to introduce or enhance beneficial effects.

5.6 The scoping stage of the EIA process aims to identify the issues which should be addressed within the ES based on the requirements within Schedule 3 of the EIA Regulations (see Section 6). This Scoping Request Report sets out the views of the Applicant regarding the scope of the environmental issues to be considered in the EIA and the method by which these assessments would be undertaken. This has involved a review of a range of baseline information sources, presenting where relevant the information obtained from such sources within this request. The information sources include;

- The available environmental information from previous planning applications.
- Sufficient studies undertaken to develop the current proposal to this stage and to inform the further evolution of the project.
- Initial consultations undertaken with a number of statutory and other consultees.

5.7 Before adopting a Scoping Opinion the MMO is required to consult TLSB and the consultation bodies required to be consulted on an application for planning permission and a marine licence for a development, which will include Cornwall Council (as part of the coastal concordat), Natural England and the Environment Agency. The Scoping Opinion should be adopted by the MMO within five weeks of receipt of this request, or such longer period as may be agreed in writing with TLSB. The Scoping Opinion, once adopted by the MMO, will then inform the preparation of the ES by TLSB.

5.8 The EIA process is iterative and the process of preparing the ES will be used to further refine and develop the proposed development. Further consultation with key statutory and non-statutory bodies and a wide range of stakeholders will be undertaken during the preparation of the ES and reported therein.

5.9 The ES will explain in greater detail the EIA process. It will describe the scoping process, identify the consultation responses received in both the course of the formal scoping process following the submission of this request for a Scoping Opinion, and also as a result of other consultations being undertaken by TLSB and their consultants with stakeholders to further inform the scope of the ES.

6 CONTENT AND FORMAT OF THE ENVIRONMENTAL STATEMENT

6.1 The ES will be prepared in accordance with Schedule 3 of the EIA Regulations and will include the following:-

- a) Description of the Development.
- b) An outline of the main alternatives considered by the Applicant.

- c) A description of the aspects of the environment likely to be significantly affected by the Development.
- d) A description of the likely significant effects of the development on the environment.
- e) A description of the mitigation measures to be employed to reduce or offset any significant adverse effects on the environment.
- f) A non-technical summary of all information provided under items a) to e) above.
- g) An indication of any difficulties encountered in compiling the required information.

6.2 The findings of the EIA process will be presented in the ES within the following Volumes:

- Volume 1: ES including detailed assessments – a full description of the proposal, consultation process, planning policy context and the EIA.
- Volume 2: Figures and Drawings – the figures and drawings used to illustrate the EIA.
- Volume 3: Technical Appendices – the technical reports and supporting information referred to in the EIA.
- Volume 4: Non-Technical Summary – summary of the proposal and key conclusions of the EIA.

6.3 The format for each of the assessment chapters within Volume 1 will be as follows:-

- Introduction
- Law, Policy and Guidance
- Assessment Methodology
- Baseline conditions
- Identifications, Evaluation & Assessment of Main Effects
- Mitigation & Enhancement
- Residual Effects
- Summary of Findings and Conclusion
- References.

Scope of the EIA Technical Assessments

6.4 The EIA will assess the following issues and present them in the ES:

- Details of the proposal and the alternatives that have been considered.
- National, Regional & Local Planning policy
- Landscape, Seascape and Visual issues
- Terrestrial and Marine Noise and Vibration
- Air Quality (Dust)
- Coastal Processes, Sediment Transport and Contamination
- Marine Water Quality Assessment
- Marine Ecology, Marine Mammals and Fisheries
- Terrestrial Ecology
- Hydrology, Groundwater, Flood Risk, Land Quality and Geology
- Terrestrial and Marine Archaeology and Heritage
- On Shore Transport & Access
- Navigation and Marine Transport Assessment
- Economy, Tourism and Recreation (incl. Public Rights of Way)
- Cumulative Effects and Interrelationships

Assessment Criteria

6.5 Each chapter topic will be assessed against international, national and local policy along with other specific guidelines. Along with this, a matrix system will be utilised whereby the value of the site, feature or species will be analysed against the likely magnitude of the impact of the Proposal, giving a predicted impact significance for each receptor. Using this technique will allow for appropriate mitigation measures to be identified and implemented at an early stage. An example is presented in Table 6.1 below.

Table 6.1 Environmental Impact Matrix Potential releases and effects											
Site activity	Hydrology	Fisheries	Air Quality	Noise and Vibration	Terrestrial Ecology	Landscape, Seascape and Visual Issues	Marine Ecology	Cultural Heritage	Traffic	Marine Navigation	Economy, Tourism and Recreation
Establishment											

Impact significance and magnitude

6.7 Table 6.2 demonstrates the assessment matrix which is likely to be used within the ES.

Table 6.2: Assessment Matrix

Magnitude of impact	No change	Negligible	Minor	Moderate	Major
Value of resource					
Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight
Unknown	Neutral	Neutral	Unknown	Unknown	Unknown

6.8 It is proposed that the overall impact significance will be based on a function of the magnitude of impact (the magnitude of the impact on a particular resource or system) versus the value of the resource (the value, importance or sensitivity of the resource or system that might be impacted). It is expected at this stage that tables outlining criteria for the allocation of Magnitude and Value would be provided and that a matrix will then be applied to determine significance of impact.

6.9 The cumulative effects and interrelationships chapter of the ES will further consider the impacts of the proposed development across a range of receptors.

Assessment Study Areas

6.10 Assessment study areas will differ for each issue within the ES, following topic-specific policy and guidance. For example, the Zone of Theoretic Visibility (ZTV) for the Landscape, Seascape and Visual Issues and Transport and Access Issues is considered likely to cover a larger geographical area than Air Quality Issues. Each topic covered within the ES will clearly define the area of assessment.

7 CLARIFICATION OF DETAILED ASSESSMENTS WITHIN THE ENVIRONMENTAL STATEMENT

Details of the proposed development and alternatives that have been considered

- 7.1 A full assessment of the proposed development and its alternatives will be considered in accordance with the EIA regulations. In particular, the assessment will consider whether there are other potential solutions and sites for the transport of stone from Dean Quarry and alternative designs for the loading bay and breakwater.

Planning Policy Context

National, Regional & Local Planning Policy

- 7.2 In the context of the loading bay and breakwater, relevant national, regional and local planning policy will be examined. The application site is located within the Lizard Peninsula, in the former Kerrier District. It is located within the Manacles MCZ. Planning policies that will be reviewed include:
- Strategic policy guidance in the National Planning Policy Framework (NPPF).
 - Marine Policy Statement
 - South West Inshore Marine Plan
 - National Planning Policy Framework (NPPF)
 - Cornwall County Council Minerals Local Plan
 - Cornwall Local Plan Proposed Submission Document
 - Statement of Community Involvement
 - Supplementary Planning Documents
 - emerging Local Development Plan, due to be deposited at the end of 2015
- 7.3 With the revocation of the South West Regional Plan there are currently no regional planning policies that would apply to this development.
- 7.4 This list is not in any way exhaustive and relevant planning policy will be covered in more detail in the ES.
- 7.5 These policies will be referred to in the relevant chapters of the ES dealing with these specific issues.

Landscape, Seascape and Visual Impact Assessment

Introduction

- 7.6 The proposed loading area and breakwater would adjoin Dean Quarry which lies on the south-eastern coast of the Lizard Peninsula in Cornwall. The Quarry itself covers an area of 44ha and lies within an Area of Outstanding Natural Beauty (AONB) and a Site of Special Scientific Interest (SSSI), and the Manacles MCZ adjoins seaward of the site. The South West Coast Footpath runs between the Quarry and the sea. The landward element of the site, including the adjoining Dean Quarry, lies within the North East Lizard Peninsula Landscape Character Area (LCA), as defined in the Cornwall and Isles of Scilly Landscape Character Study (Cornwall Council 2007), where key landscape characteristics include *“low indented cliffs and reef rocks with some sandy beaches and remnant coastal heath/coastal rough ground on the coastal strip”*. The Landscape, Seascape and Visual Impact Assessment (LVIA) will assess the potential effects of the proposed loading area and breakwater on landscape/seascape character and visual amenity. It will include a review of planning policies relevant to landscape and visual matters.

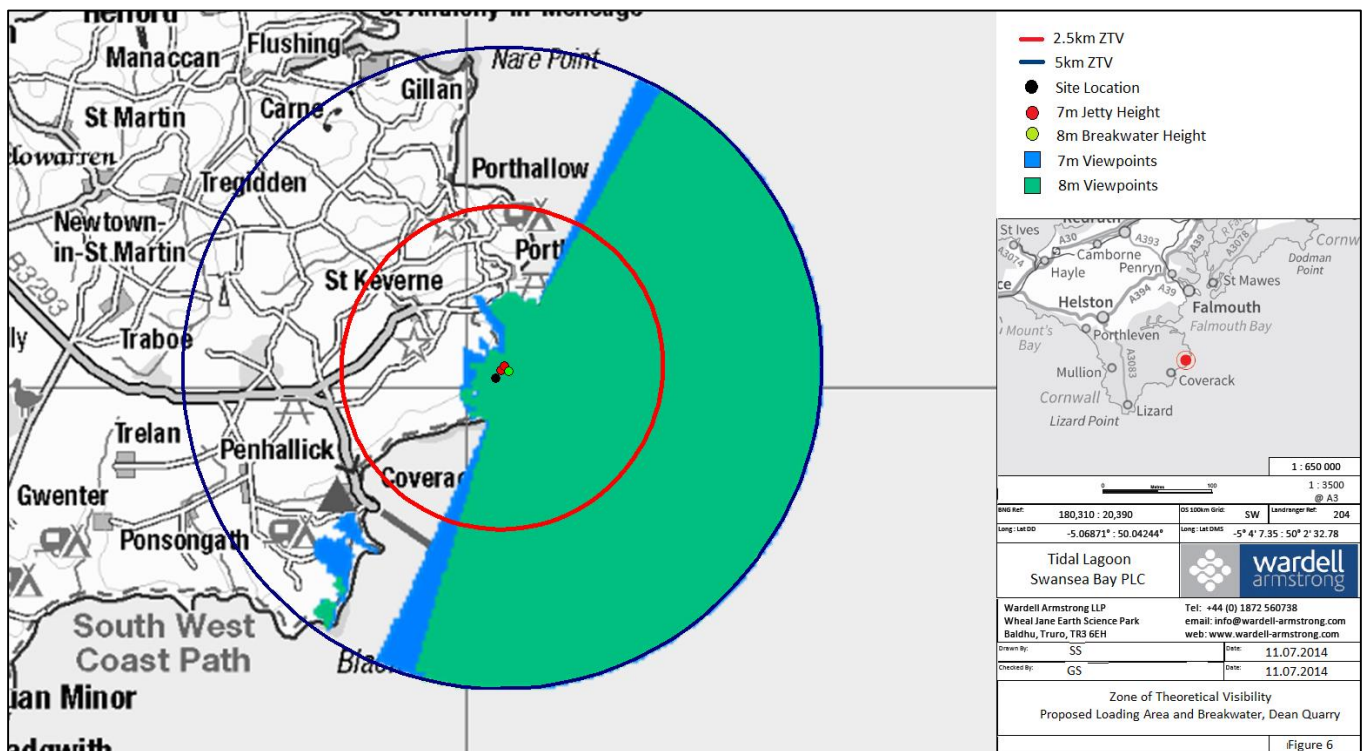
Law, Policy and Guidance

- 7.7 The LVIA will be undertaken with regard to best practice guidance including;
- Guidelines for Landscape and Visual Impact assessment, 3rd Edition, 2013 (GLVIA3), Landscape Institute/Institute of Environmental management and Assessment.
 - Photography and Photomontage in Landscape and Visual Impact Assessment – Advice Note 01/11, 2011, Landscape Institute.
 - Natural England, 2012, An Approach to Seascape Character Assessment (NECR105).

Study Area

- 7.8 A 5km study area is proposed within which the effects upon landscape and seascape character and visual amenity would be assessed. This study area is indicated on Figure 7.1.
- 7.9 A sensitive receptors plan has been created which allows areas of possible landscape and visual impact to be identified (Figure 7.1). The effect on these sensitive receptors will be assessed and mitigation measures put in place to reduce negative effect. It is intended to agree viewpoints with the Planning Authority. Figure 7.1 shows the Zone of Theoretical Visibility (ZTV) and the proposed viewpoint locations.

Figure 7.1: Zone of Theoretical Visibility



Assessment Methodology

- 7.10 It would draw on information provided by statutory consultees, current landscape planning policies, a computer-based visibility analysis and

fieldwork observations. Where necessary appropriate mitigation with respect to phasing and reclamation will be identified, with the aim of minimising views of the loading area and breakwater. The landscape and visual assessment will comprise of a report illustrated with a series of plates recording views of the site. These viewpoints are provided on Figure 7.2. Each viewpoint will contain a photograph, a location plan indicating the viewpoint and direction of view and a table summarising the existing landscape or seascape, the nature of the proposals and the effect of the proposed development both with and without mitigation proposals. The significance of the effects will be determined by considering the combination of the sensitivity of the receptor and the magnitude of the change.

7.11 The Natural England guidance (2012) states that: *“Seascape, like landscape, reflects the relationship between people and place and the part it plays in forming the setting to our everyday lives. It is a product of the interaction of the natural and cultural components of our environment, and how they are understood and experienced by people. Seascape Character Assessment (SCA) has emerged as a method for assessing, characterising, mapping and describing seascape character. The process of SCA follows the well-established, and widely used, process of Landscape Character Assessment. This report on assessing seascape character was commissioned by Natural England to contribute to the strategic and integrated management of our seas, as part of the implementation of the Marine and Coastal Access Act 2009”*. This guidance will be used to assess the magnitude of seascape impacts that the proposal may have.

7.12 The LVIA will be undertaken in stages as follows;

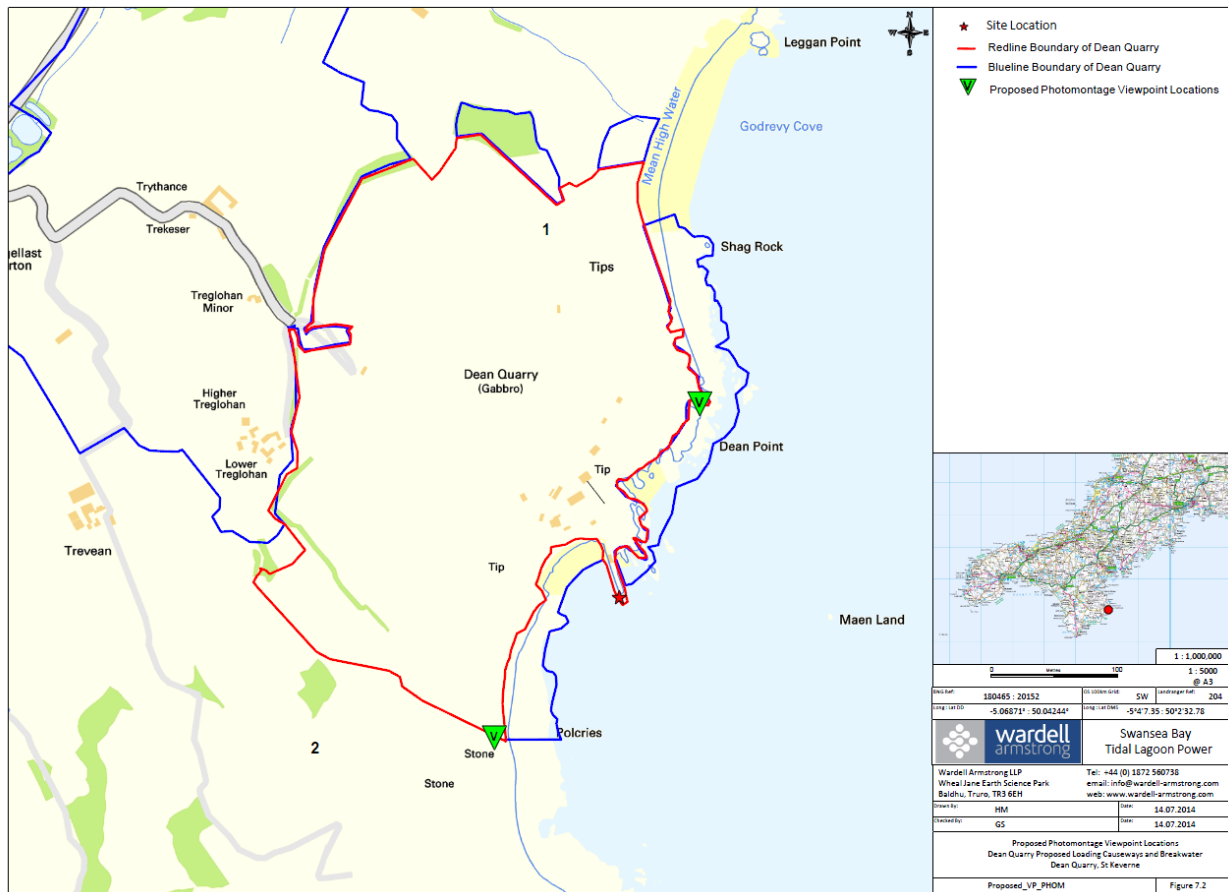
- Baseline data collection and analysis;
- Description of the baseline landscape, seascape and visual amenity (including landscape classification and identification of baseline elements, key characteristics and overall character);
- Development of mitigation measures through iterative site design;

- Identification of potential residual effects on the landscape, seascape and views;
- Evaluation of the significance of effects on landscape and seascape (elements, key characteristics and overall character) and visual amenity.

7.13 The LVIA assessment will provide for:

- Assessment of direct and indirect effects on the landscape and seascape resource;
- Effects on visual amenity; and
- Assessment of cumulative effects where relevant.

Figure 7.2: Proposed Photomontage Viewpoint Locations



Baseline conditions

7.14 The baseline section of the chapter will include a review of relevant sections of the published landscape character assessment. The site lies within LCA

area CAD8- The north east Lizard peninsula. The Application Site lies within an Area of Outstanding Natural Beauty, defined as offering *“a spectacular coastline of Serpentine cliffs and rocky coves whilst the remote countryside is predominantly agricultural pasture with heathland and rough grassland, of which large areas remain unenclosed”*.

- 7.15 The village of St Keverne lies approximately 1.6km to the north north-west of the site. A number of individual residential properties and agricultural holdings lie adjacent to the Quarry. The nearest major settlement is Helston which is 16km directly north west from the site.
- 7.16 There are a number of Public Rights of Way (PRoW) in the vicinity of the Application Site. Of particular note is the South West Coast Footpath which runs along the coastal boundary of the Quarry and directly adjacent to the existing jetty and the Application Site. This is shown on Figure 4.2 which details the existing South West Coast Footpath and proposed bridging works.

Identification, Evaluation & Assessment of Main Effects

- 7.17 The visual assessment will include a description of representative views from public vantage points, including public footpaths, residential properties, recreational areas/public open space/open access land and other receptors as appropriate.
- 7.18 The visual assessment will be illustrated by annotated photographs of the existing site and from publicly accessible viewpoints. A limited number of photomontages of the proposed development from two publicly accessible viewpoints would also be included, as shown in Figure 7.2.
- 7.19 Consultation with the Landscape Officer at Cornwall Council and the Area of Outstanding Natural Beauty officer would be undertaken with regard to the potential effects on representative viewpoints for the LVIA.
- 7.20 There is an existing coastal jetty at Dean Quarry and a coastal jetty also exists at the West of England Quarry which lies which lies approximately 1km to the

north at Porthoustock. As existing jetties these form part of the existing baseline scenario for the LVIA. The potential for cumulative landscape and visual effects with other, similar, developments which have planning consent or are the subject of a valid planning application will be considered in the LVIA. The effects of these existing/proposed developments in combination with the proposed loading and breakwater will be considered within the LVIA.

Mitigation & Enhancement and identification of Residual Effects

- 7.21 Where likely significant effects are predicted, consideration will be given to mitigation measures. Residual effects will subsequently be identified.

Terrestrial and Marine Noise & Vibration

Introduction

- 7.22 Dean Quarry occupies a remote and tranquil area of the Lizard Peninsula with landward land uses predominantly consisting of agriculture. Dean Quarry itself benefits from extant planning consent for quarrying, with an expiry of 8 August 2035, although the Quarry itself was last worked some six years ago. The operational West of England Quarry lies approximately 1km to the north at Porthoustock.
- 7.23 Given the remote and tranquil nature of the area onshore noise is likely to be dominated by noise generated by quarrying operations from both Dean Quarry itself, when operational, and the currently operational West of England Quarry.
- 7.24 Offshore waters have a number of varied uses ranging from water based recreational activities, to fishing and commercial sea traffic. In general natural noise sources such as wind and wave activity and birds are expected to characterise the noise environment.
- 7.25 Baseline noise levels will therefore vary depending on quarrying activity, geographical location, day of week, time of day and season. An assessment

of noise from the construction, operation and decommissioning of the proposed development will be undertaken to determine whether it will comply with relevant standards and guidance in respect of the acceptability of noise levels.

- 7.26 Due to the proposed 24/7 operation of barge movements the noise assessment will be required to establish a baseline night time noise level to ensure that the loading of barges will not exceed permitted noise levels.

Law, Policy and Guidance

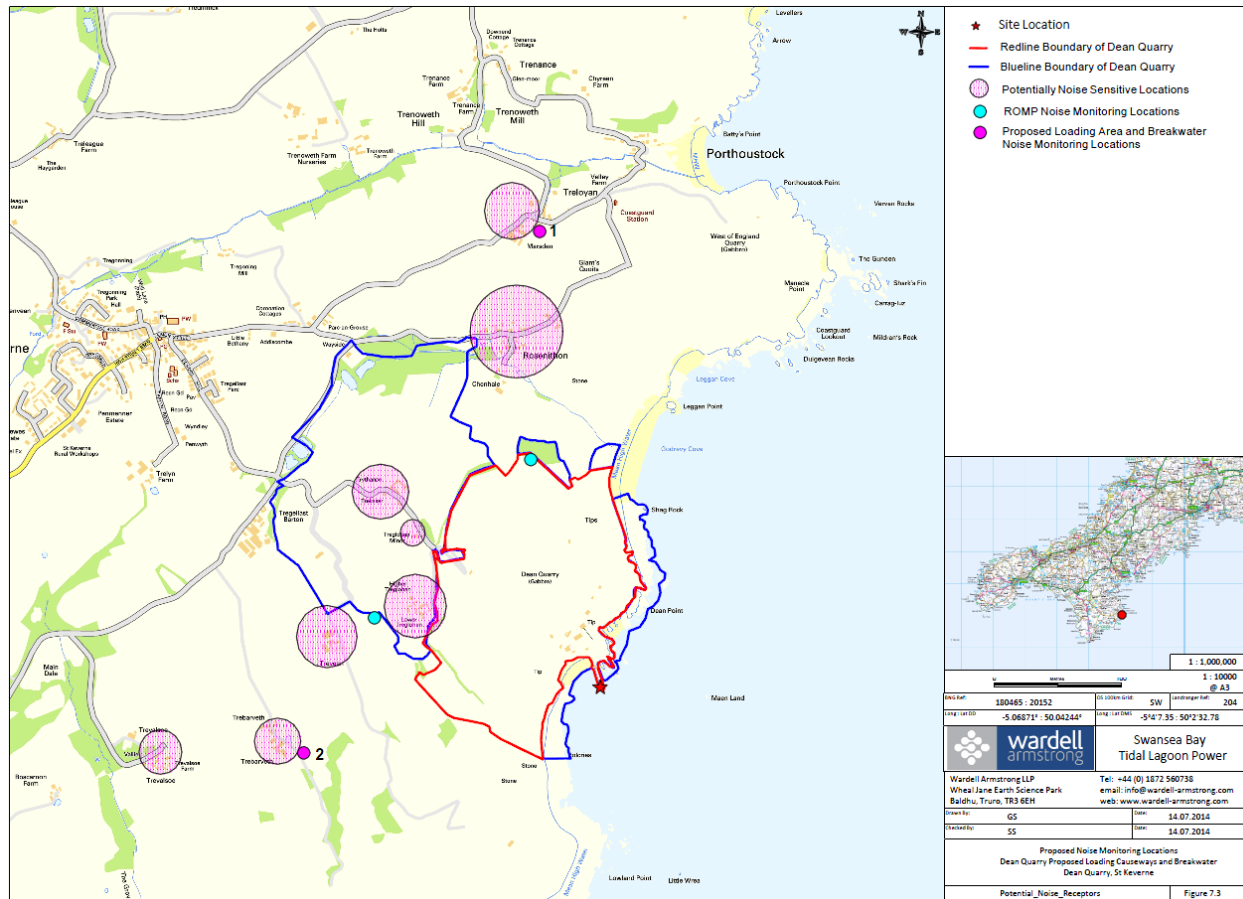
- 7.27 The NPPF outlines general aims for planning policy regarding noise. These include the avoidance of significant impacts and minimising other impacts arising from new development, protecting areas of identified tranquillity and recognising that this should be balanced against the need for business to operate without unreasonable restrictions being imposed. This approach is consistent with general Government policy regarding noise as set out in the Noise Policy Statement for England (NPSE), as well as applicable local policies.
- 7.28 In terms of terrestrial noise limits in the UK, no fixed limits apply to construction site noise. However, advice and guidelines to local planning authorities and developers can be found in British Standard BS 5228(3) and Department of the Environment (DoE) Advisory Leaflet (AL) 72(4). Although AL 72 is out of print it remains as guidance on acceptable levels of noise.

Assessment Methodology

- 7.29 A list of noise sensitive receptors is provided as for agreement with the Environmental Health Officer of Cornwall Council in order to agree the nearest noise sensitive properties and the assessment methodology. These properties have been identified through those covered within the ROMP of Dean Quarry (Trevean, Higher and Lower Treglohan, Treglowen Minor, Roseithon, Trythance and Tresker) and expert judgement of the properties

surrounding the site and are provided as Figure 7.3 and labelled as numbers 1 and 2.

Figure 7.3: Proposed Noise Monitoring Locations



7.30 It is proposed that the assessment methodology will include the following:

- Identification of nearest noise sensitive receptors (see Figure 7.3);
- Survey of background noise levels (locations to be agreed with Environmental Health Officer based on noise sensitive properties shown in Figure 7.3);
- Agreement of noise limits for each property with the Environmental Health Officer;
- Prediction of noise levels received at each receptor;
- Comparison of predicted noise levels with agreed noise limits; and
- Identification of mitigation where necessary.

Baseline Conditions

- 7.31 Existing baseline data will be sought and information on sensitive receptors or historic noise issues would also be requested. In addition to this baseline surveys will also be undertaken during appropriate conditions. These proposed conditions include terrestrial activity in the case of noise measurements on land and sea state, maritime activity and meteorological conditions in respect of underwater noise measurements.
- 7.32 It is noted that the scoping report, which accompanied the ROMP submission for Dean Quarry, contained noise levels measured at nearby residential dwellings in 2009, and that suitable noise limits, attached as planning conditions to the planning permission for quarrying at Dean Quarry, were derived from these measured levels as identified in the 2012 ROMP consent. At this stage it is assumed that the noise monitoring data undertaken in support of the ROMP, and subsequent noise limits, will be appropriate for use when assessing the proposed development.

Identifications, Evaluation & Assessment of Main Effects

- 7.33 Noise prediction modelling will be undertaken to assess the likely noise levels associated with both the construction and operation of the loading area and breakwater, in particular the movement and loading of stone and the projected increase in marine traffic.
- 7.34 The impact of noise on the South West Coast Footpath and nearby residential dwellings will be considered, with regard to overall volume of noise, intermittent peaks of noise, and the timings and durations of these. The results of the terrestrial noise assessment will be used to inform the ecology and ornithology assessment in order that any potential effect could be assessed in relation to sensitive wildlife areas and species.

Mitigation & Enhancement and identification of Residual Effects

- 7.35 Where likely significant effects are predicted, consideration will be given to mitigation measures. Residual effects will subsequently be identified.

Air Quality (Dust)

Introduction

- 7.36 An assessment of Air Quality impacts likely to arise as a result of dust from the proposed development would be undertaken.

Law, Policy and Guidance

- 7.37 The construction phase dust assessment will be undertaken in accordance with the guidance detailed in the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of the Impacts of Construction on Air Quality and the Determination of their Significance' (February 2014). In accordance with the IAQM guidance, the potential risk of dust arising from demolition, earthworks and construction activities on the site (where applicable) will be assessed.

Assessment Methodology

- 7.38 In terms of a dust assessment, it is proposed to undertake the following work:
- Consultation with the appropriate Environmental Health Officer at Cornwall Council; and
 - A qualitative assessment of the potential dust impacts associated with the construction of the loading area and breakwater, undertaken in accordance with IAQM guidance.

Baseline Conditions

- 7.39 As the quarry has been inactive for approximately 6 years, no impacts on air quality as a result of dust currently exist.

Identification, Evaluation and Assessment of Main Effects

- 7.40 It is not proposed to use road transport to export the stone from Dean Quarry so the effects on nearby sensitive receptors will be limited to the construction period when HGVs will be accessing the site bringing any necessary materials (it should be noted that the stone extracted from the quarry will be used to construct the loading areas and breakwater so this will limit the amount and type of material that will be brought to site) and then employees vehicles during operation of the quarry.
- 7.41 In terms of the dust assessment the IAQM assessment methodology includes the consideration of ecological effects. It is recognised that the quarry has been designated a SSSI, however this is for geological reasons, rather than for a specific habitat/species. The dust assessment will therefore consider potential impacts upon the Manacles MCZ.

Mitigation and Enhancement and Identification of Residual Impacts

- 7.42 Where likely significant effects are predicted, consideration will be given to mitigation measures. It is considered that dust is likely to occur only from vehicle movements along the exceptional load access route. As such, it is proposed that wheel wash facilities would be installed to mitigate this, should it be identified as a potential issue. Other residual effects will subsequently be identified.

Coastal Processes, Sediment Transport and Contamination

Introduction

- 7.43 The construction of the loading area and breakwater has the potential to affect coastal processes, with subsequent effects on marine ecology and

other receptors, such as navigation, coastal birds. An assessment of the effects of the proposed development will be undertaken.

Law, Policy and Guidance

- 7.44 The MMO's Strategic Scoping Report for marine planning in England (August 2013) sets out guidance on impacts on coastal processes, which despite being produced with regards to the development of nuclear infrastructure, are felt to be relevant to this proposal. The guidance iterates the importance of assessing the impacts of the development on the seabed along with any implications to existing coastal processes and the marine environment. Any applications for developments should include an ES in order to show what considerations have been taken with regards to coastal impacts. During this process any effects or physical changes to MCZs, Special Areas of Conservation (SACs) or Special Protection Areas (SPAs) should also be identified and any mitigation measures established through an iterative dialogue with the statutory consultees.
- 7.45 The Water Framework Directive (WFD) aims to protect and improve the chemical and ecological status of water bodies including estuarine and coastal waters (out to one nautical mile) across Europe. The Environment Agency monitor progress against WFD objectives, through river basin management plans (RBMP). The Marine Strategy Framework Directive (MSFD) has comparable objectives with the WFD and aims to achieve good environmental status (GES) in the marine environment by 2020. There is an overlap with the WFD in coastal waters with regards to chemical quality, the effects of nutrient enrichment (eutrophication) and some aspects of ecological quality and hydromorphological quality.
- 7.46 The MSFD has a number of descriptors which will determine GES. A number of these relate to water quality – eutrophication, contaminants and marine litter and these are all covered within this section. The UK is currently developing a monitoring programme to be in place by July 2014 alongside a programme of measures (by 2015) that will need to be delivered to achieve or maintain GES. Marine planning will play a role in contributing to the

delivery of the MSFD to ensure the requirements are met. There are a number of additional directives that also aim to protect waters for various activities and purposes and these are:

- The Urban Waste Water Treatment Directive
- The Bathing Waters Directive
- The Shellfish Waters Directive

7.47 JNCC and Natural England's advice on recommended MCZs "Supplementary advice on the Marine Conservation Zones feature of conservation importance subtidal sands and gravels" March 2013 will also be examined in the light of the proposed development.

Baseline conditions

7.48 Dean Quarry is on the east coast of the Lizard Peninsula, Cornwall; a site which is between two headlands which are around 2 km apart; (i) Manacle Point to the north east, and (ii) Lowland Point to the south west.

7.49 An overview of the baseline coastal processes can be provided by existing data and information.

Waves

7.50 The east facing aspect of the site means that it is sheltered from large Atlantic waves, but still remains exposed to long fetches from easterly and south-easterly events.

7.51 Wave predictions for an offshore location south of the Lizard (Van Oord, 2014) suggests a strong westerly component of wind-sea and swell-sea, with a wind-rose that indicates strong easterly winds can also occur albeit less frequently than westerly's. The most common offshore conditions (22% of all waves in the sample) fall between 1 to 1.5 m significant wave height and 7 to 8 second wave period.

7.52 Equivalent predictions for a nearshore location on the east side of the Lizard, and adjacent of Dean Quarry, helps quantify the local sheltering. Typical

wave heights (31%) fall in the range 0 to 0.25 m and 2 to 4 s in period. Larger nearshore waves can reach > 3 m and have wave periods between 10 to 12 s, but these are limited to winter periods and account for less than 1% of all wave conditions in a year.

Tides

- 7.53 The tidal range varies between springs and neaps, with a mean spring tide estimated as 4.7 m and a mean neap at 2.3 m (at Coverack Harbour).
- 7.54 Seaward of The Manacles, charted flows (SN001G 50°02.44'N, 5°02.36'W) are expected to be up to 0.8 m/s on the spring flood tide in a NNE direction and slightly faster on the ebb up to 0.9 m/s a SSW direction. The flood tide also tends to last slightly longer than the ebb, approximately 6½ hours compared to 6 hours. For this location, the tidal excursion on a spring tide is around 15 km to the NNE on the flood and 12km to the SSW on ebb, meaning the residual flow is in favour of the longer flood phase.
- 7.55 Further inshore the flows are likely to slightly reduced, in comparison, and become influenced by shallow submerged rocky outcrops and prominent headlands. A metocean survey is underway to quantify nearshore flows in the vicinity of the loading area and breakwater.

Sediments

- 7.56 The local understanding of seabed sediments has been improved by a recent geophysical survey. An ecological survey is planned to further improve the description local inter-tidal and sub-tidal sediments.
- 7.57 The local flow and wave conditions will determine the distribution of unconsolidated sediments across the inter-tidal and sub-tidal, as well as in the water column (suspended sediments).

Inter-tidal

- 7.58 The inter-tidal is mainly a rocky foreshore with isolated sandy beaches backed by coarser sediments above the high water line. An example of such a beach is located on the west side of the existing jetty. Present understanding is that there is no active pathway between the sands on the beaches and sub-tidal deposits.

Sub-tidal

- 7.59 Regional scale sediment mapping (BGS, 1987) suggests the wider sea bed is covered by coarse grained sands (0.5 to 1 mm mean grain size), noting data coverage does not extend to the nearshore. Recent geophysical surveys (Insight Marine Projects, 2014) have mapped the local area in greater detail, revealing a rocky seabed that extends around 200 m from the coastline and to depths of around 7m Chart Datum. Beyond this rocky area the seabed flattens off to become sandy. Off Lowland Point, the area of rocky seabed extends further offshore and provides a southern boundary to the local area of sand. There are no observed bedforms (e.g. megaripples or sandwaves) on the area of sand.
- 7.60 The rocky divide between the sandy beach and the sub-tidal sand deposits is further evidence of the lack of an active pathway linking these two areas.
- 7.61 In relation to typical tidal flows, peak current speeds of 0.8 m/s to 0.9 m/s are more than sufficient to mobilise coarse sand, and even very coarse sand (1 to 2mm), in shallow water depths. If these peak current speeds persist to the shallow inshore area then this may be part of the explanation for areas of rocky seabed.
- 7.62 In relation to waves, the most common conditions will have little influence on disturbing seabed sediments, however, the larger waves with longer wave periods may lead to wave orbital currents that exceed any tidal effects and with an influence that persists for as long as the storm event.

Water column

7.63 Mobilised sediment may be transported across the seabed as bedload and/or carried in suspension. The mode of transport generally depends on the particle size (mass) and the capacity of the flow to lift material into suspension, with high energy environments interacting with areas of fine sediments likely to create the areas with greatest levels of suspended sediment.

7.64 Locally, existing evidence suggests that concentrations of suspended sediments are generally very low. This evidence includes:

- An area which is popular for recreational diving.
- Seabed habitats that include maerl beds. Maerl forms under specific conditions with a fast tidal flow or sufficient wave action to remove fine sediments, but not strong enough to break the brittle maerl branches.
- Photographic evidence which reveals a visible seabed in shallow areas.
- Interpreted sea surface concentrations (MODIS satellite) which suggest average summer concentrations of 0.05 to 1 mg/l and winter values of 3 to 5 mg/l.

Identification, Evaluation and Assessment of Main Effects

7.65 The area local to the existing jetty is set back between two headlands that protrude further seawards with submerged rocky areas, thus creating a small coastal cell. The quarry itself is a headland (Dean Point) that divides the cell into two parts with small concave beaches (coves) to north and south. Whilst these beaches might contain some coarse sands the immediate shallow sub-tidal area appears rocky.

7.66 Sediment movement into or out of this cell would appear to be limited by the headlands as well as a lack of sustained mechanisms (pathway) or abundant sources. Under certain conditions of strong winds, waves and tides it is feasible for cross-shore sediment transport between the sub-tidal sands further offshore and the local beaches.

- 7.67 The existing jetty does not appear to protrude further seaward than Dean Point and appears 'bedded' into the rocky form of this headland. The existing jetty is therefore unlikely to contribute any additional effect to the local coastal processes.

Proposed Assessment Approach

- 7.68 The proposed assessment approach has been discussed and agreed in principal with MMO and NE at a meeting on the 24 June 2014. It aims to be both proportional and realistic to the type and scale of the proposed development. The approach is based on completing each of the following steps:

- Collating existing data and information to help develop a sufficient baseline understanding, including routine monitoring by Channel Coastal Observatory and new data from the following site specific surveys:
 - Geophysical survey – mapping seabed levels and sediment types (side scan, multi-beam bathymetry, magnetometry and sub-bottom profile data have been gathered during site surveys by Insight Marine Ltd. in May 2014).
 - Ecological survey – mapping biotope coverage (see Marine Ecology, Marine Mammal and Fisheries).
 - Metocean survey – capture local information to quantify nearshore tidal flows. An Acoustic Wave And Current meter (AWAC) was deployed on the 3 July 2014 to record data. It is intended to recover the equipment on the 21 / 22 July 2014. The location is shown on Figure 7.4.
- Use the baseline understanding to identify linkages (pathways) between the physical environment and the nature conservation interests and sensitive features (receptors). The baseline conditions will be described for both the present conditions and over the longer-term.

- Assess how the construction phase introduces short-term pressures on the physical environment and the potential for these pressures to create an environmental impact.
 - Assess how the operational phase introduces long-term pressures on the physical environment and the potential for these pressures to create an environmental impact.
 - Assess how the decommissioning phase introduces additional short-term pressures on the physical environment and the potential for these pressures to create an environmental impact.
 - Consider mitigation options for any significant impacts.
- 7.69 The assessment methodology will be based on expert judgement and draw on available evidence, where possible. In relation to proportionality, simple analytical methods will be used to support the assessment rather than relying on complex modelling tools. Conservative approximations will be used to help manage any uncertainties and remaining design assumptions.
- 7.70 Examples of simple analytical approaches include, amongst others; analysis of tidal asymmetry, tidal excursion, thresholds for sediment mobility, calculation of fall velocities for disturbed sediments; assessment of suspended sediment concentrations and advection paths.

Mitigation & Enhancement and identification of Residual Effects

- 7.71 Where likely significant effects are predicted, consideration will be given to mitigation measures. Residual effects will subsequently be identified.

Marine Ecology, Marine Mammals and Fisheries

Introduction

- 7.72 The loading area and breakwater will be constructed within the intertidal and subtidal environment and therefore the proposed development has the potential to affect marine ecology, marine mammals and fisheries. An assessment of the effects of the proposed development will be undertaken.

In addition, the proposed development lies within the Manacles MCZ and an assessment will be undertaken in line with MMO advice and guidance within 'Marine Conservation Zones and Marine Licencing' (2013) and any other relevant documents.

Law Policy and Guidance

7.73 A range of legislation, policy and guidelines applies to the protection of marine habitats and species, which is of relevance to this topic as the object of such protection includes birds and other species that prey on intertidal and subtidal ecology or whose habitats are dependent upon such receptors. At European Union (EU) and international level the most relevant requirements include the EU Birds Directive (2009/147/EC) and the EU Habitats Directive (92/43/EEC), as well as the 1972 Ramsar Convention on Wetlands of International Importance. These have been transposed into UK legislation through various Acts and Regulations, to protect Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites. "European Marine Site" (EMS) is the collective term for SACs and SPAs that are covered by tidal water (continuously or intermittently). In accordance with Government advice in both England and Wales, Ramsar sites must be given the same consideration as European sites.

7.74 European Protected Species are species of plants and animals (other than birds) protected by law throughout the European Union. They are listed in Annex IV of the European Habitats Directive, and transposed into UK law by the Conservation of Habitats and Species (Amendment) Regulations 2010.

7.75 The proposed development site is within the Manacles MCZ and the legislative and management strategies relevant to this designation will be reviewed.

7.76 Other legislation and guidance that will be reviewed include:

- Water Framework Directive;
- Marine Strategy Framework Directive;

- Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention);
- The Marine and Coastal Access Act 2009;
- Wildlife and Countryside Act 1981;
- UK Marine Policy Statement;
- The Biodiversity Action Plan which has been implemented to protect biodiversity in line with the 1992 Convention on Biological Diversity;
- Conservation of Seals Act 1970;
- Shellfish Waters Directive (79/923/EEC);
- The Natural Environment and Rural Communities Act (NERC Act) 2006;
- Salmon and Freshwater Fisheries Act;
- The Eels (England and Wales) Regulations 2009.

Assessment Methodology

7.77 The guidance provided by Natural England regarding the intertidal surveys for the proposed development (April 2014) is provided as Appendix 1 and specifies that intertidal rock and intertidal sediment habitats need to be surveyed. It is considered the site-specific survey work proposed would be the main source of baseline data to inform the assessment for the benthic ecology features of the site. Available historic marine ecology data will also be collated from other sources including the MCZ report for the area (Finding Sanctuary recommendations report), any relevant published and/or informally published literature and data held by the statutory authorities.

7.78 The assessment methodology detailed below has been discussed and agreed in principal with MMO and NE at a meeting on the 24 June 2014. The intertidal surveys and subtidal surveys were undertaken on the 13 – 15 July 2014.

Intertidal Survey

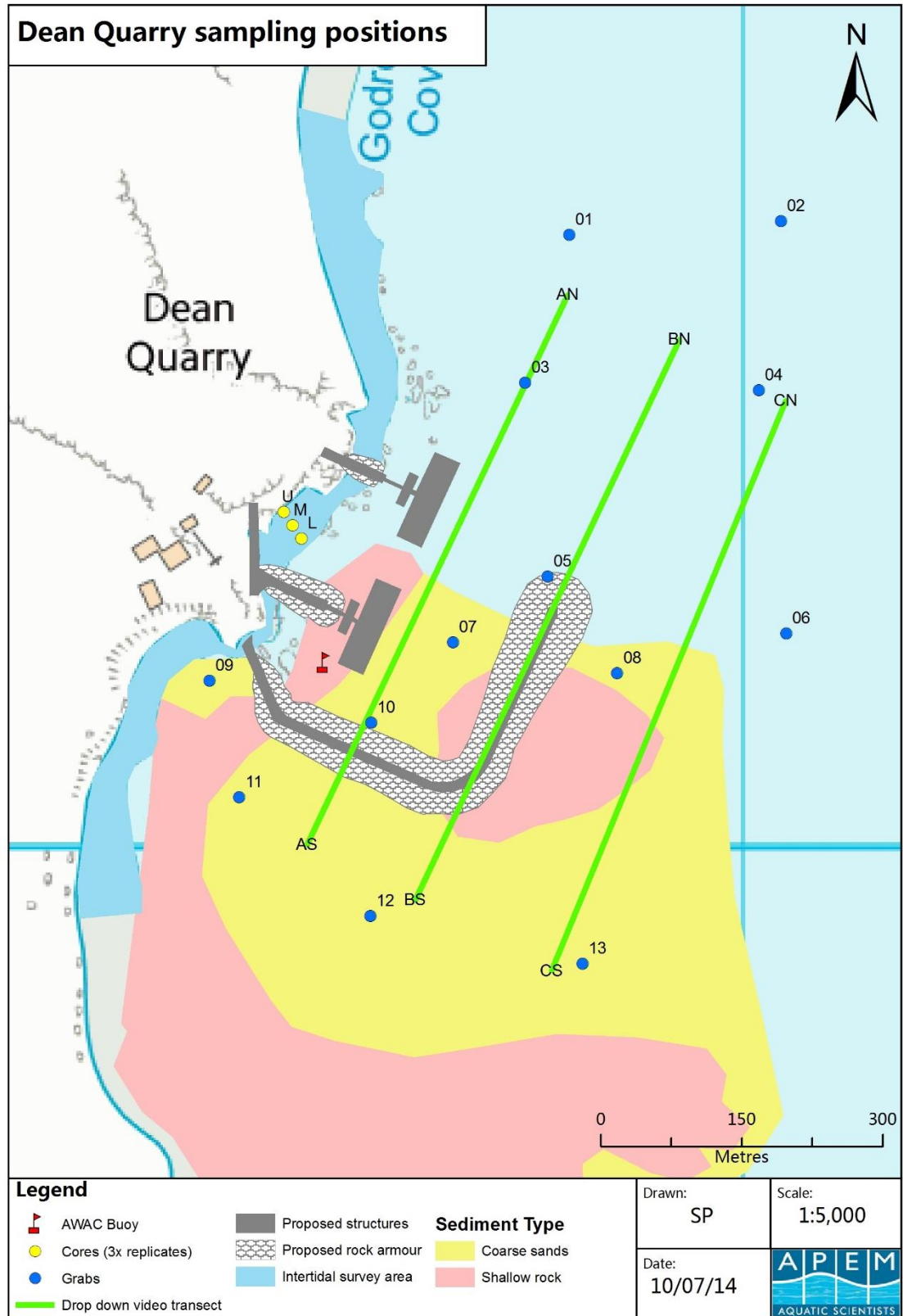
7.79 The Phase I methodology follows best practice guidance including the Countryside Council for Wales (CCW) Handbook for Marine Intertidal Phase I mapping surveys, Marine Monitoring Handbook, and CSM guidance. Biotope mapping would cover both hard and soft substrates as well as under-boulder

biotopes. For phase II, 9 sediment cores (triplicate samples at three stations) would be taken for macrofaunal analysis and particle size analysis (PSA). Quadrat counts will be conducted at 3 stations in each biotope in rocky areas. These would be distributed between lower, mid- and upper shore locations and include under-boulder communities, to provide sufficient coverage of all areas that will potentially be impacted. The proposed location of the intertidal sampling points are shown on the attached Figure 7.4.

Subtidal Survey

- 7.80 It is proposed that subtidal surveys would be conducted using a towed video as the primary survey method. The camera would also be capable of capturing still images where features of interest are noted. It is proposed that three video transects should provide adequate coverage of the area to characterise the subtidal biotopes present.
- 7.81 It is proposed to use a 0.1 m² Day grab to obtain quantitative samples for biological and PSA analysis. Sample numbers proposed reflect the maximum number of sampling stations for the areas. Evidence from the video survey would be used to inform the final placement and number of grab stations (13 grab samples), however, based on the currently available information the subtidal region in the proposed survey area is thought to mainly be comprised of hard substrates and it is likely that few successful grabs will be obtained. Any incidental marine mammal sightings whilst undertaking the survey would also be recorded.
- 7.82 The survey site locations are shown on Figure 7.4. The sites have been positioned to gather information at sites within and external to the area of potential impact and have been reviewed by ABPMer, who are undertaking the coastal processes assessment on behalf of TLSB. It should be noted that the positions may be subject to change when the survey vessel is on site.

Figure 7.4: Subtidal and Intertidal Survey Site Locations (survey 13 – 15 July 2014)



Contaminants

7.83 In their response to an initial meeting to discuss the proposal (DAS/7929/117076, dated April 17 2014) it is stated “Natural England have scoped out the requirement for contaminant levels to be assessed in the subtidal sediments. This is based on the construction works (rock armour placement and the placement of four piles) not being expected to result in significant disturbance to sediments; sediment contaminant levels being expected to be low in the area; and the exposed nature of the work area, which would likely result in any low level contaminants quickly being dissipated.” This view has been confirmed by The Centre for Environment, Fisheries and Aquaculture Science (Cefas) in their response dated 3 July 2014. This is included as Appendix 2. No dredging is proposed for the construction of the loading area and breakwater and as a result no analysis of water or sediment quality is proposed.

Baseline Conditions

7.84 The Manacles MCZ is described as “an inshore site located on the southern coast of Cornwall which covers a total area of approximately 3.5 km². The MCZ extends 2 km from the coastline to encompass a series of large underwater rocky outcrops, known as The Manacles”. The Manacles MCZ is protected for the following features:

- Intertidal coarse sediment
- Subtidal sand
- Subtidal macrophyte dominated sediment
- Moderate energy intertidal rock
- Moderate energy infralittoral rock
- Moderate energy circalittoral rock
- Maerl beds
- Sea-fan anemone (*Amphianthus dohrnii*)
- Spiny lobster (*Palinurus elephas*)
- Staked jellyfish (*Haliclystus auricula*)

- 7.85 Alongside the MCZ designation there are also Annex I features (listed under the EU Habitats Directive (92/43/EEC) mapped in the general area.
- 7.86 North of the jetty the rocky foreshore is identified as an Annex I Reef (Annex I Reefs occur where rocky areas or concretions made by marine animals arise from the surrounding seafloor), and further sites are also identified at the headlands to the north and south, as well as The Manacles platform. Away from the coastline the seabed is mapped as a Potential Annex I Sandbank (Potential area of sloping sandy sediment habitat down to 60 m and connected to sandbank habitat in less than 20 m).

Identification, Evaluation and Assessment of Main Effects

- 7.87 The identification and assessment of potential ecological impacts associated with the loading area and breakwater will be conducted in accordance with the Chartered Institute of Ecology and Environmental Management (IEEM) guidelines for Ecological Impact Assessment in the UK (CIEEM 2006) and the guidelines for Marine and Coastal Ecological Impact Assessment (CIEEM 2010).
- 7.88 There are a number of iterative steps involved in undertaking an EIA. The main steps are described below:
- Definition of baseline environment within the influence of the development and appropriate reference areas;
 - Identification of sensitive ecological receptors;
 - Assessment of the magnitude of impacts;
 - Assessment of the significance of impacts;
 - Proposal of mitigation measures to reduce, prevent or where possible offset any adverse significant impacts;
 - Assessment of the residual impacts after mitigation measures have been considered;
 - Consideration of compensation measures required (where appropriate).

- 7.89 The assessments of impacts will be qualitative, with impacts assessed based on a combination of empirical data, anecdotal information and professional judgement.

Identification of potential interactions

- 7.90 This early stage in the EIA process will enable the scope of the assessment to be identified by illustrating where there may be potential interactions between the project proposals and the environment. Interactions considered to result in a potential significant impact will be taken forward to the impact assessment stage. Some specific potential impacts which will require assessment include:

- Disturbance and loss of intertidal habitat due to extension of the access road, loading areas and hardstanding stockpile platform.
- Permanent loss of subtidal habitat within breakwater footprint.
- Disturbance of subtidal community and fish due and sediment resuspension due to dredging during construction/maintenance.
- Effect of underwater noise and vibration on fish and marine mammals from laying of rock armour and pile driving during construction and from vessel movements during construction/operation.
- Invasive species.

- 7.91 No finfish species are a feature of the MCZ, however, it is proposed that potential impacts of the development on finfish ((in particular those of conservation (e.g. UK BAP) and/or commercial interest) are considered. Finfish present in the area would be determined by a brief baseline data review. The main impacts on finfish that would be considered would be those caused by:

- underwater noise and vibration from pile driving, dredging (if it is required, at this stage it is understood that it would not be required) and rock placement;
- increases in suspended solid concentrations during construction due primarily to dredging (if it is required, at this stage it is understood that it would not be required), however other construction activities could potentially result in sediment disturbance, however, Natural England have stated that they would not

expect pile driving or rock placement to result in significant disturbance to sediments;

- potential benefits of increased subtidal rocky habitat due to extension of the loading area and breakwater.
- Natural England have scoped out the requirement for assessment of contaminant levels therefore changes to water quality would not be assessed for fish.

7.92 The findings of the coastal processes chapter will be assessed within the marine ecology chapter as appropriate.

MCZ Assessment

7.93 Further consultation with the MMO and NE will be undertaken once the findings of the intertidal and subtidal surveys (undertaken on the 13th, 14th and 15th July 2014) are available. An assessment of the potential effects of the proposed development on the protected features of the MCZ will be undertaken in line with MMO advice and guidance (MMO, 2013).

Mitigation & Enhancement and identification of Residual Effects

7.94 Where likely significant effects are predicted, consideration will be given to mitigation measures where feasible. Residual effects will subsequently be identified.

Terrestrial Ecology

Introduction

7.95 The loading area and breakwater will be constructed within the intertidal and subtidal environment; however, the road accessing the loading area will be within the confines of the quarry. The proposed development has the potential to affect terrestrial ecology along the coastal strip and within the quarry. A terrestrial ecology Phase 1 survey has been completed for the quarry and the findings will be incorporated into the ES for the proposed

development. An assessment of the effects of the proposed development will be undertaken.

- 7.96 In addition, the proposed development lies in proximity to the potential Falmouth Bay to St Austell Bay Special Protection Area (pSPA) and the Lizard SAC. The assessment will therefore consider the potential effects of the proposed development on these internationally protected sites. Further information about the need for a Habitats Regulation Assessment under the Conservation of Habitats and Species (Amendment) Regulations 2010 is given in Section 8 of this document.

Law Policy and Guidance

- 7.97 The main legislative considerations are those contained within the Wildlife and Countryside Act 1981, The Conservation of Habitats & Species (Amendment) Regulations 2010, the Countryside and Rights of Way Act 2000, the Natural Environment and Rural Communities (NERC) Act 2006 and the Protection of Badgers Act 1992. In addition, Local Plan policies relevant to conservation and biodiversity will be reviewed and any Local Biodiversity Action Plan habitats or species relevant to terrestrial ecology.

Assessment Methodology

- 7.98 An extended Phase 1 walkover survey was undertaken in May 2014. The Preliminary Ecological Appraisal Report (Wardell Armstrong, June 2014) produced followed guidelines for preliminary ecological appraisal (Chartered Institute of Ecology and Environmental Management (CIEEM, 2012) and British Standard BS 42020:2013 Biodiversity: Code of Practice for planning and development (BSI, 2013). This report will be presented as a Technical Appendix to the ES and its findings incorporated into the ES for the proposed development.
- 7.99 As part of this survey a desk-based study was undertaken, which involved contacting the Environmental Records Centre for Cornwall and the Isles of Scilly (ERCCIS), to collate existing environmental data within 2km of the site.

In addition to this data search, bat roost records within 10km of the site will be requested from ERCCIS, and the MAGIC website (www.magic.defra.gov.uk) and the National Biodiversity Network website (www.nbn.org.uk) will also be consulted to obtain records which will be used to inform the assessment.

Baseline Conditions

Statutory and non-statutory designated sites

7.100 The Preliminary Ecological Appraisal Report identified the following statutory and non-statutory designated sites within 5km of the site, plus the Falmouth Bay to St Austell Bay potential SPA:

Table 7.1 Statutory and non-statutory sites

Site name	Designation	Approximate distance from site
The Lizard	SAC	adjacent to the south-west boundary of the site
Fal and Helford	SAC	1.2km south-west
Falmouth Bay to St Austell Bay	potential SPA (pSPA)	7km north
Coverack to Porthoustock	SSSI	within the site
Meneage Coastal Section	SSSI	194m north
East Lizard Heathlands	SSSI	1.1km east
Kennack to Coverack	SSSI	4.5km north-east
The Lizard	National Nature Reserve (NNR)	1.1km south-west
Lowland Point to Trevalsoe Point	County Geology Site (CGS)	1km south
Maindale	CGS	1.5km east

Habitats

7.101 A range of habitats were identified as being present on the site, including scrub, unimproved acid grassland, semi-improved neutral grassland, tall ruderals, disturbed ground, broadleaved woodland and standing water. These are illustrated in Appendix 3.

Species

7.102 The Preliminary Ecological Appraisal Report identified habitat suitable to support the following protected or BAP priority species on-site:

- Bats
- Badger
- Brown hare
- Hedgehog
- Dormouse
- Common toad
- Reptiles
- Nesting birds

7.103 Previous surveys undertaken by Cornwall Environmental Consultants (CEC) in 2009 confirmed that common pipistrelle (*Pipistrellus pipistrellus*) and lesser horseshoe (*Rhinolophus hipposideros*) bats were using two buildings on the site as a night roost. The current assessment identified that one of these buildings has been demolished and the other is outside the application area. A daytime inspection was undertaken of the remaining buildings within the site and several were identified as potentially suitable to support roosting bats. Emergence surveys to confirm the presence/absence of bats in these buildings have been recommended and will be undertaken in line with recommended guidelines in order to inform any assessment or licencing requirement.

7.104 Further surveys for reptiles, badgers and a check for nesting chough (*Pyrrhocorax pyrrhocorax*) and peregrine falcon (*Falco peregrinus*) to confirm their continued absence from the site will also be carried out to inform the assessment and any mitigation requirement where required.

Identification, Evaluation and Assessment of Main Effects

7.105 The identification and assessment of potential terrestrial ecological impacts associated with the re-activation of the quarry and associated access routes will be conducted in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines for Ecological Impact Assessment in the UK (CIEEM

2006) and the guidelines for Marine and Coastal Ecological Impact Assessment (CIEEM 2010).

7.106 Following the CIEEM 2006 guidelines, the focus of the impact assessment is directed at activities with the potential to cause significant ecological effects on "Key Ecological Receptors" rather than attempting a detailed investigation of all potential ecological issues relating to a project.

7.107 Ecological receptors associated with the Project are assigned a value based on the following geographic frames of reference:

Table 7.2 Potential value of ecological receptors (adapted from CIEEM, 2006)

Level of value	Example
International (very high)	SAC, SPA, Ramsar, habitats listed on Annex I of the Habitats Directive, regularly occurring, globally threatened species (i.e. IUCN Red Listed).
National (high)	SSSI, MCZ, NNR, UKBAP habitats and species
Regional/County (medium)	Viable areas of key habitat identified in the Regional/County BAP or smaller areas of such habitat which are essential to maintain the viability of a larger whole, any regularly occurring significant population listed in the Local Red Data Book
District/Borough (low)	Areas of habitat identified in a sub-county (Local) BAP, District sites that the designating authority has determined meet the published ecological selection criteria for designation, including Local Nature Reserves (LNR)
Parish/Local (negligible)	Common and widespread species, areas of habitat considered to enrich the habitat resource within the context of the Parish e.g. species-rich hedgerows

7.108 Only ecological receptors assigned to the District geographical frame of reference/level of value (as shown in the table above) or higher are considered Key Ecological Receptors. However, any protected species or habitats considered important under planning policies will be subject to specific mitigation measures.

7.109 In order to assess the effects of the Project, potential direct and indirect impacts will be identified and characterised for construction, operation and decommissioning phases. An assessment will also be made of the potential impacts during construction,

operation and decommissioning on designated sites, which will be linked to the zone of influence of the proposed works. Information regarding the detailed construction methodology, timing and phasing of works and any restoration proposals will also be required in order to assess the potential impacts of the Project.

7.110 Potential significant impacts that have been identified at this early stage to be taken forward to impact assessment stage include (but are not limited to) the following:

- Direct loss of habitat (acid grassland, scrub, woodland) due to extension of the access road, stockpiling and blasting of the quarry;
- Degradation of habitat due to dust emissions, increase in air pollution (particularly The Lizard SAC);
- Loss of habitat which supports protected or notable species such as badgers, bats, reptiles, nesting birds, invertebrates;
- Disturbance effects of noise, vibration, increased light and air pollution on protected and notable species;
- Potential loss of bat roosts (should any building demolitions be proposed).

7.111 The assessment will be based on the findings of the desk study, the Preliminary Ecological Appraisal Report and the results of any further surveys.

Mitigation & Enhancement and identification of Residual Effects

7.112 Where likely significant effects are predicted, consideration will be given to mitigation measures in order to avoid the impact or reduce its significance. In addition, where protected species and/or valuable habitats are present but not expected to suffer any significant effects as a result of the Project, mitigation is nonetheless recommended to ensure compliance with legislation or planning policies. This approach is considered to represent best practice and provides a way of positively contributing to the overall reduction of impact on features of nature conservation value. Any residual effects will subsequently also be identified.

Hydrology, Groundwater, Flood Risk, Land Quality and Geology

Introduction

7.113 The hydrology, groundwater, flood risk, land quality and geology research for this proposal would be undertaken. The research will provide a detailed insight of each topic and allow for appropriate mitigation strategies to be implemented where it is considered they are required.

Law, Policy and Guidance

7.114 Planning policy for hydrology and flood risk is set out in the National Planning Policy Framework (NPPF) technical guidance, published in March 2012. The policy document sets out key planning objectives in relation to land usage and flood risk management. The development proposals will be designed to be compliant with the requirements of the National Planning Policy Framework. Pre-planning application consultation and negotiations have been undertaken with the Environment Agency (EA) to agree a scheme of development that is acceptable in terms of flood risk.

Assessment Methodology

7.115 A desktop assessment will be carried out to clarify whether there is any likely potential impact on local hydrology, groundwater, flood risk, land quality and geology. All discussions to date with regard flood risk and have not highlighted any potential significant impacts, as the development itself is unlikely to have any impact on hydrology. However, further desk and site based assessments will be undertaken to ensure that any potential impacts are identified.

Baseline Conditions

7.116 During pre-planning application consultations with the EA the issue of potential impact of hydrology and ground water has not arisen. The

development will not cause impact on ground water once the material has been excavated from site.

Identification, Evaluation and Assessment of Main Effects

7.117 As identified in the baseline conditions, the proposed development would not cause significant impact on hydrology and groundwater. However, these topics would still be included within desk-based research to ensure that any potential impacts are identified.

7.118 A detailed flood risk mitigating assessment will be submitted with the application setting out how the design of the scheme accords onwards with EA requirements.

Mitigation & Enhancement and identification of Residual Effects

7.119 Where likely significant effects are predicted, consideration will be given to mitigation measures. Residual effects will subsequently be identified.

Terrestrial and Marine Archaeology and Heritage

Introduction

7.120 An assessment of the potential effects of the proposed development on archaeology and heritage will be included within the ES. The assessment will include identification of both physical effects upon below-ground archaeological remains and non-physical effects upon heritage assets through any alteration to their setting.

7.121 Consultation will be carried out with the Historic Environment Service of Cornwall Council.

Law, Policy and Guidance

7.122 The production of an Archaeological Desk-Based Assessment would be carried out in accordance with the National Planning Policy Framework. The Institute of Field Archaeologists (IFA) standards and guidance would be followed. In particular a desk based assessment, as set out by the Institute for Archaeologists (2012), would be undertaken.

Assessment Methodology

7.123 The assessment would:

- provide an historic overview of the site through research undertaken at appropriate Archives;
- establish the presence of designated and non-designated heritage assets within the site and within its vicinity through consultation with the Cornish and Scilly Isles and Monuments Record;
- verify the presence of any known heritage assets and assess the potential for unknown heritage assets within the site through a site walkover survey;
- analyse the potential impact of the proposed development on known and potential buried archaeological remains; and
- assess the impacts of the proposed development on offshore heritage assets or submerged landscapes through the use of Historic Seascape Characterisation.

7.124 The assessment would be fully illustrated and would include a statement on the requirement for further work (archaeological fieldwork).

Baseline conditions

7.125 No heritage assets are recorded within the site area. The Department for Culture, Media & Sport released guidance on Strategic Monuments in October 2013 and sets out current Government policy on the identification, protection, conservation and investigation of nationally important ancient monuments for the benefit of current and future generations – including

Scheduled Monuments. Together with the domestic legal framework that underpins them, this policy helps to fulfil our obligations under the terms of the 1992 European Convention on the Protection of the Archaeological Heritage and the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage. The United Kingdom has had legislation in place to help safeguard the future of its cultural heritage since the passing of the Ancient Monuments Protection Act 1882. In England the current legislation is the Ancient Monuments and Archaeological Areas Act 1979. Under the terms of the 1979 Act the Secretary of State has a duty to compile and maintain a schedule of ancient monuments of national importance, the purpose being to help preserve them, so far as possible, in the state in which they have come down to us today. The Act creates criminal offences in respect of unauthorised works to, or the destruction or damage of, Scheduled Monuments.

Identification, Evaluation & Assessment of Main Effects

7.126 Potential development effects upon the setting of all designated heritage assets within 1km of the site would be assessed. The assessment will consider the implications of the proposed development upon the significance of designated heritage assets through the alteration of their setting in accordance with the approach outlined in 'The Setting of Heritage Assets' (EH 2011). Identified heritage assets will also be subject to a field inspection, with relevant information recorded on pro-forma visual impact assessment record sheets and associated digital photographic records. There will be liaison with the landscape team in order to provide an integrated and cross-referenced assessment of non-physical impacts. This will make reference to available photomontages, wireframe views and Zones of Theoretical Visibility.

Mitigation & Enhancement and identification of Residual Effects

7.127 Where likely significant effects are predicted, consideration will be given to mitigation measures. Residual effects will subsequently be identified.

On-Shore Transport and Access

Introduction

7.128 The purpose of the proposed loading area and breakwater is to facilitate the coastal transportation of stone quarried from Dean Quarry, thereby minimising the use of the highway network to transport stone. The proposed development would be assessed in terms of the transport and access impact of its construction, operation and decommissioning on the highway network.

Law, Policy and Guidance

7.129 The 'Guidelines for the Environmental Assessment of Road Traffic' (IEMA 1993) would be referred to as appropriate throughout the assessment of the potential traffic and transport issues. Consultation would be undertaken with the local highway authority, Cornwall Council. Planning policies relevant to traffic and transportation would be considered within the ES. Consideration would also be given to the Cornwall Local Transport Plan – Connecting Cornwall: 2030 which sets out goals, objectives and policies for transport. The methodology used for the Transport Statement would take into account 'Guidance on Transport Assessment' (GTA) issued by the Department for Transport (DfT) and Department for Communities and Local Government (DCLG) in March 2007.

Baseline Conditions

7.130 Vehicular access to the loading area and breakwater, is currently provided via a private quarry haul road through Dean Quarry. Vehicular access to Dean Quarry itself can be gained via the B3293, taking the B3294 and an unnamed road towards Rosenithon before entering the Quarry and the private haul road. An 'exceptional load route' across adjoining farmland is available when necessary in order to allow such loads to avoid the narrow, undulating lane which provides vehicular access to the Quarry for standard road vehicles. This exceptional load route is shown on Figure 2.1.

Assessment Methodology

7.131 The proposed assessment will:

- Identify access routes to Dean Quarry and present the baseline situation with respect to the surrounding roads.
- Determine the potential impact of the increased traffic associated with the Proposed Development and proposed mitigation where necessary.

Baseline conditions

7.132 Existing baseline traffic data for the B3293 and the B3294 will be sought from the Highways Authority. Where possible data will also be obtained in respect of the vehicle/vessel type and numbers which visited the Quarry when it was previously operational. The majority of construction traffic is normal construction plant which would arrive on low loader transporters. Where necessary the 'exceptional load route' across adjoining farmland would be utilised in order to allow such loads to avoid the narrow, undulating lane which provides vehicular access to the Quarry for standard road vehicles. This exceptional load route is shown on Figure 2.1.

Identification, Evaluation & Assessment of Main Effects

7.133 The main potential impacts are considered to be:

- Increase in HGV traffic during construction and decommissioning and associated abnormal road wear and tear.

Mitigation & Enhancement and identification of Residual Effects

7.134 Where likely significant effects are predicted, consideration will be given to mitigation measures. Residual effects will subsequently be identified.

Navigation and Marine Transport Assessment

Introduction

7.135 The proposed development would extend into the Manacles MCZ, which is an area popular with local fishing and diving organisations. Small recreational craft also use the area. The impact of the construction of the loading area and the breakwater, and its subsequent use by transporting stone by sea from the Quarry, would need to be carefully assessed.

Law, Policy and Guidance

7.136 The proposed development falls within the description of "Marine Works" (previously known as "Harbour Works") and will be subject to the requirements of the Marine and Coastal Access Act 2009 and the Coastal Protection Act 1949 (Sections 34 and 35). In early communication with the MMO, it is expected that the proposal should be assessed in the context of the Port Marine Safety Code. As such, the Department for Transport have prepared "A guide to good practice on port marine operations" (July 2013) as a supplement to the Port Marine Safety Code, and contains detailed guidance on issues relevant to harbour authorities. This guidance will provide a basis on which to undertake the assessment.

Assessment Methodology

7.137 The study would be undertaken through first assessing the baseline conditions of the area. From this, it is possible to calculate the likely increase in marine transport and subsequent navigation issues resulting from the proposed development.

7.138 Consultation will be carried out with relevant authorities including the Maritime and Coastguard Agency, Trinity House, Falmouth Harbour Commissioners, the Royal Yachting Association and other users of the area.

Baseline conditions

7.139 The proposed development lies within The Manacles MCZ. It is an area popular with local fishing and diving organisations. Small recreational craft also use the area. Preliminary examination of the site has shown that the proposed development will be located in water at a depth ranging from approximately 5mCD-15mCD (Chart Datum).

Identifications, Evaluation & Assessment of Main Effects

7.140 It is anticipated that the main effects on navigation and marine transport will result from the number of barge movements and the construction and positioning of the proposed breakwater. It is likely that up to 4 x 10,000T barges, each measuring a maximum of 106m in length and 30m wide with a draft of 5.5 metres will be utilised as a result of the development. The barges are unlikely to be self-propelled and would therefore be towed by tugs for mooring purposes. It is proposed that the coastal movement of barge traffic would take place on a 24/7 basis as tide and weather conditions permit. The assessment will consider the potential effects of these movements and the development of the breakwater and loading causeways on commercial and recreational vessels. Although the loading area will be lit at night, the requirements for navigational lighting and marking the new structures will be considered.

Mitigation, Enhancement and Identification of Residual Effects

7.141 Where likely significant effects are predicted, consideration will be given to mitigation measures. Residual effects will subsequently be identified.

Economy, Tourism and Recreation (Including Public Rights of Way)

Introduction

7.142 The purpose of this chapter is to describe and analyse the impact of the proposed development on the economy, tourism, recreation and the Public

Right Of Way (PROW) network in the area and, if appropriate, address those impacts through mitigation and enhancement.

Economy

Introduction

7.143 The economic benefits of the proposed development will be considered in this chapter.

Law Policy and Guidance

7.144 The Cornwall Local Plan Proposed Submission Document (March 2014) relates to the economy in Policy 5 - Jobs and skills and will be used to guide the assessment of the impacts of the development on the economy.

Assessment Methodology

7.145 The assessment will be undertaken through identifying the number of jobs that are likely to be provided as a result of the proposed development throughout the construction phase, operational phase, and subsequent decommissioning. This will be compared to the baseline employment activity for the area based on the 2011 Census data.

Baseline Conditions

7.146 Employment data for the area from the 2011 Census will be used to provide a baseline figure for the Economy section of the ES. As of 2011, the electoral division of St Keverne and Meneage had a lower number of unemployed people of working age than the county average (2.2 as oppose to 3.3) <http://www.cornwall.gov.uk/council-and-democracy/data-and-research/data-by-area/electoral-division-data/> .

Identification, Evaluation and Assessment of Main Effects

7.147 It is expected that the proposed development will bring a large number of jobs to the area throughout the life of the project, through the provision of employment relating to construction, HGV driving, barge piloting and quarrying. This will represent a positive impact through introducing much needed improvements to the local economy.

Tourism

Introduction

7.148 The purpose of this section of the report is to discuss the potential effect of the proposed development in relation to tourism and related businesses within the local community. This section considers the types of tourism available in the locality of the site and draws conclusions on whether any of those tourism-related businesses are likely to experience an effect from the development.

Law Policy and Guidance

7.149 There are no recognised standards, guidelines or methodologies for assessing the likely future effects of the Proposal on the behaviour and habits of tourists visiting the Lizard or the surrounding locality.

Assessment Methodology

7.150 In line with current best practice, a desk review will be conducted of existing tourism assets in the vicinity of the proposed development. This will enable some general conclusions to be drawn on the potential impact on local tourism of the development in this part of Cornwall.

Baseline Conditions

- 7.151 The proposed development lies within the Lizard AONB, a popular area for tourism in Cornwall. It also lies within The Manacles MCZ which is a renowned diving area, and the National Trust owned Lowland Point lies within 2km of the site.
- 7.152 Figure 7.3 shows the locations of sensitive receptors within a 2.5km and 5km radius of the site. This includes tourism related receptors such as the AONB and PRowS
- 7.153 The South West Coastal Footpath crosses the site to the north west. However, the effects on this from the development and the proposed bridging of the footpath will be considered in the Recreation section of this report.

Identification, Evaluation and Assessment of Main Effects

- 7.154 Areas from which tourists may be able to view the proposed development are shown on the ZTV in Figure 7.1.
- 7.155 Tourist attractions in the vicinity of the site will be identified from various sources including the Visit Cornwall website and Tourist Information services. This may not necessarily represent an exhaustive list of tourist attractions in the area but should identify the main attractions. Further local knowledge and web-based research will be undertaken to identify any significant omissions.

Recreation (Including PROW)

Introduction

7.156 The site is located in an area popular for recreational activities. This chapter will consider the potential impacts on these activities along with a proposed new permissive PROW route to the north west of the site.

Law Policy and Guidance

7.157 Recreation and PROWs are considered within the Cornwall Local Plan Proposed Submission Document (March 2014) in Policy 3- Role and function of places; Policy 17 Health and wellbeing; Policy 23 Natural environment and Policy 27 Transport and accessibility. A selection of guidance is also available on recreational activities and development. This chapter will also be guided by the Sport, Recreation and Open Space Issues Paper by Cornwall Council (2012) which sets out the evidence base and the policy context for sport, recreation and open space to be taken forward into the Core Strategy. Also of use is the Surfers Against Sewage “Guidance on environmental impact assessment of offshore renewable energy development on surfing resources and recreation” document (2009) which although being produced for offshore renewables projects, still provides detailed guidance on how recreational water users can be affected by coastal developments such as the proposed loading area and breakwater.

Assessment Methodology

7.158 The assessment will be undertaken through the consultation with various recreational organisations and bodies to identify the current level of recreational activity within the area and how the proposed development may impact on such activities. Consultation will be undertaken with (but not limited to) the following:

- Royal Yachting Association (RYA)
- British Sub Aqua Club (BSAC)
- Ramblers Association
- British Canoe Union (BCU)

- Surfers Against Sewage (SAS)

Baseline Conditions

7.159 The site is located in an area popular for recreational activities, including, but not limited to, walking, diving, sailing, kayaking and recreational fishing. The site lies within The Manacles MCZ, a site renowned for its quality as a diving destination. The South West Coastal Footpath PROW lies within the Quarry and is identified on Figure 4.2.

Identification, Evaluation and Assessment of Main Effects

7.160 A bridging of the route of the South West Coastal Footpath PROW is proposed to allow for quarrying work to resume within Dean Quarry. This bridging is also shown on Figure 4.2. It is not expected that the development will have a detrimental effect on the PROW as it will be improved through the re-routing works and increase the safety of walkers as it will be located to avoid the movements of quarry vehicles and activities.

7.161 The development of the breakwater has the potential to affect divers, sailors and kayakers due to the increase in shipping activity. The Navigation and Marine Transport chapter will consider the impacts of increased movements, and early consultation with the relevant organisations will allow potential negative impacts to be identified at an early stage of development.

Mitigation & Enhancement and identification of Residual Effects for Economy, Tourism and Recreation

7.162 Where likely significant effects are predicted, consideration will be given to mitigation measures. Residual effects will subsequently be identified.

Cumulative Effects and Inter-relationships

Introduction

7.163 In accordance with the EIA Regulations the cumulative effects and inter-relationships of the Dean Quarry development will be considered.

7.164 The EIA Regulations include the requirement to identify the full range of environmental effects that are likely to result from a development. This includes not only the project's direct effects, but also a range of secondary effects including cumulative, synergistic and inter-relationship effects. This wider range of effects is often simply grouped together under the term "cumulative environmental effects". EIA practice recognises two major sources of cumulative effects: intra-project effects and inter-project effects.

Law Policy and Guidance

7.165 Schedule 3, 3, 2 (c) of the EIA Regulations requires an assessment of cumulative effects.

Assessment Methodology

7.166 The cumulative/in-combination assessment needs to take account of the total effects of all pressures acting upon all relevant receptors in seeking to assess the overall cumulative/in-combination significance. Consideration is given to activities and plans or projects that exist, that are approved but uncompleted, or the applications for which are under consideration, where spatial/physical overlaps of the impacts are likely to occur. Additionally, consideration is given to any other activities and plans or projects, including any impacts that do not directly overlap spatially, but may indirectly result in a cumulative/in-combination impact. An initial review of the Cornwall Council planning database has not indicated any activities, plans or projects that would be relevant for consideration and as part of this Scoping Request,

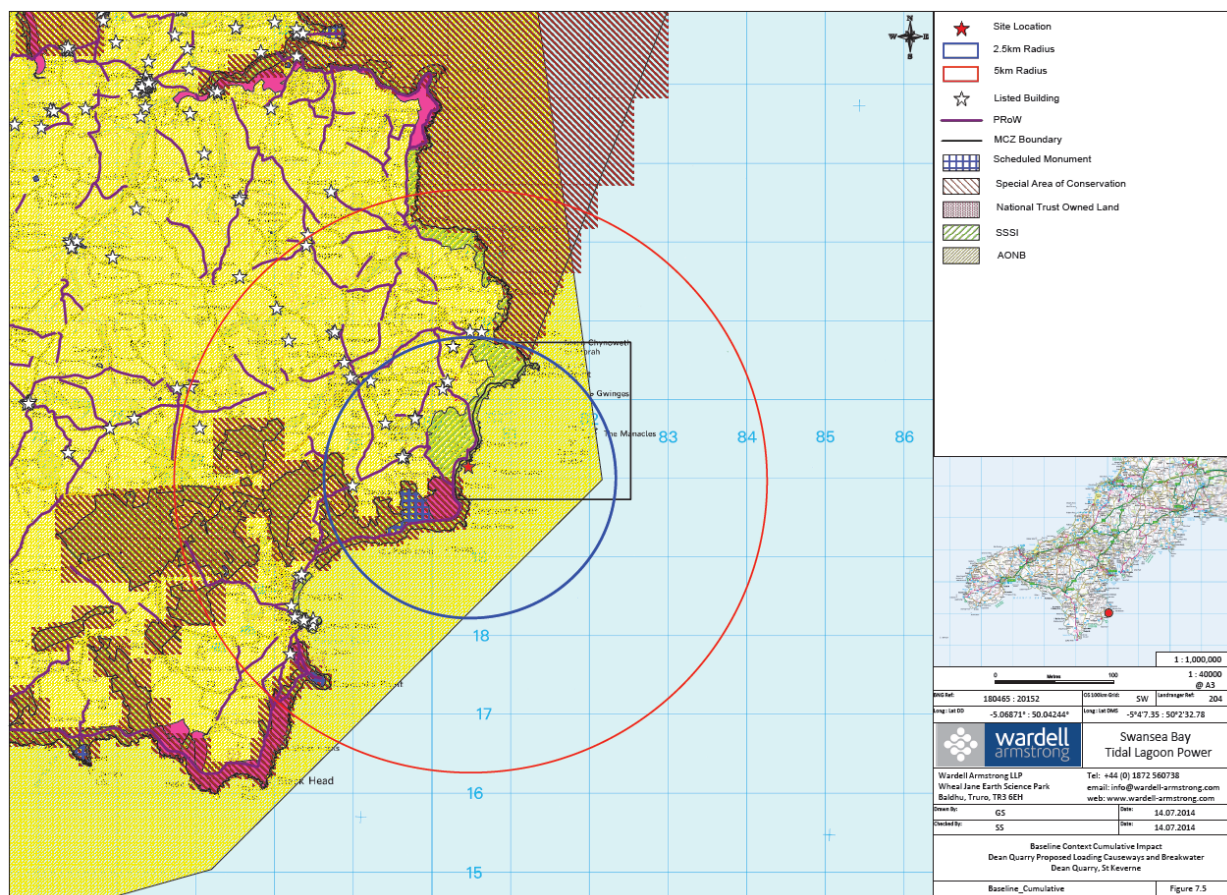
the Applicant wishes to seek the views of statutory consultees as to any relevant plans, policies or activities that they consider would be relevant.

7.167 Following the completion of the prior chapters set out within this report, it will be possible to ascertain the potential impacts that could arise as a result of a combination of factors.

Baseline Conditions

7.168 Baseline conditions would be obtained from previous chapters of the ES to identify the existing conditions and the likely conditions that would arise as a result of the development. Figure 7.5 provides a baseline context for assessment of cumulative effects on sensitive receptors within the vicinity of the Project.

Figure 7.5: Baseline Context for the Assessment of Cumulative Effects



Identification, Evaluation and Assessment of Main Effects

- 7.169 Cumulative effects are those that result from changes caused by past, present or known future actions together with those from the proposal and occur where the study area has potential for combined effects. The cumulative assessment coincides the combined effects of several issues that may be insignificant on a single basis but cumulatively have a more significant effect.

Mitigation & Enhancement and identification of Residual Effects

- 7.170 Where likely significant effects are predicted, consideration will be given to mitigation measures for the proposed development that would minimise cumulative effects. Residual effects will subsequently be identified.

8 HABITATS REGULATION ASSESSMENT

- 8.1 Under Article 6 of the Habitats Directive an assessment is required where a plan or project may give rise to significant effects upon a Natura 2000 site. European sites include SACs, designated under the Habitats Directive, and SPAs, designated under the Conservation of Wild Birds Directive (Council Directive 2009/147/EC (which codifies Directive 79/409/EEC)) for rare, vulnerable and regularly occurring migratory bird species and internationally important wetlands.
- 8.2 The requirements of the Habitats Directive are transposed into UK law through the Conservation of Habitats and Species (Amendment) Regulations 2010. In addition, it is a matter of UK Government policy (ODPM Circular 06/2005) that sites designated under the 1971 Ramsar Convention for their internationally important wetlands ("Ramsar sites") are also considered in this process, along with potential SPAs ("pSPAs"), or (in England) candidate SACs ("cSACs").
- 8.3 A project of this nature has the potential to impact upon internationally designated habitats and/or species. Preliminary discussions with NE identified that there may be a potential effect of the Project on the potential

Falmouth Bay to St. Austell Bay Special Protection Area (pSPA). The pSPA provides important overwintering habitat for three waterbird species (black throated diver (*Gavia arctica*), great northern diver (*Gavia immer*) and the Slavonian grebe (*Podiceps auritus*)). It is considered to be the most important site in the UK for overwintering black throated diver and the most important site in England for overwintering great northern diver.

- 8.4 As it is proposed to carry out construction of the loading area and breakwater outside of the wintering bird season and vessels transporting the material will not pass through the boundary of the pSPA, preliminary discussions with NE have indicated that a Habitats Regulations Assessment (HRA) under the Conservation of Habitats and Species (Amendment) Regulations 2010 for this site will not be required. Information supporting this conclusion will be presented in the relevant chapter of the ES.
- 8.5 The site is also adjacent to The Lizard SAC, designated for a range of Annex I habitats as follows:
- Vegetated sea cliffs of the Atlantic and Baltic Coasts
 - Hard oligo-mesotrophic waters with benthic vegetation of *Chara spp.*
 - Mediterranean temporary ponds
 - Northern Atlantic wet heaths with *Erica tetralix*
 - European dry heaths
 - Dry Atlantic coastal heaths with *Erica vagans*
- 8.6 Consultation with NE will take place in order to determine whether a HRA will be required for any likely significant effects on The Lizard SAC as a result of the development.

9 CONCLUSION

- 9.1 This report has considered the Screening and Scoping processes as set out in the EIA Regulations. In terms of Screening, this Screening Request seeks a formal Screening Opinion from the MMO as lead authority under the coastal concordat in order to determine whether the proposed development constitutes EIA development. The Applicant considers that the proposal is

likely to be screened as an EIA development, and as such, a Scoping Report has been prepared as part of this document.

- 9.2 In addition, this document constitutes a formal request for a Scoping Opinion to be provided by the MMO, pursuant to Part 3 (13) and Schedule 4 of the EIA Regulations. The main function of scoping, as noted in the DETR 1995 document 'Preparation of Environmental Statements for Planning Projects that require Environmental Assessment: A Good Practice Guide' is to *"...confirm the nature of the development, the breadth of the EA, the range of key issues and the extent to which each environmental topic area needs to be investigated."* This Scoping Report has been prepared in order to assist the MMO in identifying the issues which should be addressed by considering what effects the proposal could have on the environment and which are likely to be significant.
- 9.3 The MMO's Scoping Opinion represents its formal opinion on the information that needs to be presented in the ES that will accompany the marine licence application and planning application for EIA development.
- 9.4 The document suggests a comprehensive approach to assessment based on previous experience of the assembled team of specialists. The MMO and consultees are invited to consider and comment accordingly within the five-week period as set out in the EIA Regulations.

10 REFERENCES

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Department for Transport (2013) A Guide to Good Practice on Port Marine Operations

Insight Marine Projects (2014) Dean Quarry Geophysical Survey. REP-0201/J64566. For Shire Oak Quarries Ltd.

JNCC and Natural England (2013) Supplementary advice on the Marine Conservation Zones feature of conservation importance subtidal sands and gravels

MMO (2013) Marine Conservation Zones and Marine Licencing

Surfers Against Sewage (2009) Guidance on environmental impact assessment of offshore renewable energy development on surfing resources and recreation

Van Oord, 2014. Waveclimate UK, Falmouth.

11 APPENDICES

Appendix 1: Natural England Guidance on Intertidal Surveys

Appendix 2: CEFAS Response Letter

Appendix 3: Phase 1 Ecological Survey Map

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