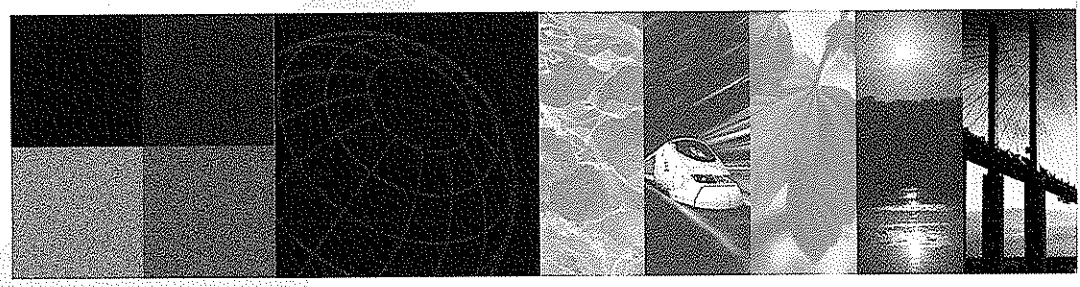
**Halcrow Maritime**

# Poole and Christchurch Bays Shoreline Management Plan

## Volume 3 - Developed and Natural Environment

March 1999



Halcrow

# Halcrow Maritime

## Poole and Christchurch Bays
## Shoreline Management Plan
## Volume 3 - Developed and Natural Environment
## March 1999

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# PREFACE

This is the Consultation Draft of the Poole and Christchurch Bays Shoreline Management Plan. It sets out the strategy for management of coastal defences between Durlston Head in Dorset and Hurst Spit in Hampshire, including Poole and Christchurch Harbours (Subcell 5F). The SMP has been prepared by Halcrow Maritime on behalf of the Poole and Christchurch Bays Coastal Group.

The SMP is divided into the following 4 volumes:

## VOLUME 1 – STRATEGY DOCUMENT

PART A : INTRODUCTION
Sets out the background to, and role of, the SMP, along with its aims and objectives.

PART B : HOW TO USE THE PLAN
Describes the key elements of strategy presentation, in the Process and Management Unit sections.

PART C : PROCESS UNIT DESCRIPTIONS
Present a synopsis of the main characteristics of each Process Unit, summarised from Volumes 2 and 3.

PART D : MANAGEMENT UNIT STATEMENTS
Divided into two sections, Part D1 presents the 'Management Unit Characteristics' and Part D2 the 'Appraisal of Strategic Options' which identifies the preferred option along with implementation and monitoring guidance.

PART E : FUTURE DEVELOPMENT
Describes where/how current understanding needs to be improved and gives a suggested time frame for both the review of the strategies and, further into the future, for a more comprehensive reappraisal of the Plan as a whole.

## VOLUME 2 – PHYSICAL ENVIRONMENT

PART A : GEOLOGY AND GEOMORPHOLOGY
Presents the physical characteristics of the shoreline along with its the formative geomorphological history, and describes the subdivision of the coast into Process Units.

PART B : COASTAL CONDITIONS
Describes the wind, wave, tide and current regimes driving contemporary coastal processes.

PART C : SHORELINE EVOLUTION
Identifies and reviews historical evolution of the shoreline, both 'natural' and due to Mans intervention.

PART D : CONCEPTUAL SEDIMENT PROCESS MODELS
Provides qualitative and quantitative information about sediment processes within Poole and Christchurch Bays, in addition to setting longer term assessments of how the coast is likely to be impacted upon.

ANNEX A : ISSUES ANALYSIS AND STATEMENT OF OBJECTIVES
Presents shoreline management issues and associated objectives, relevant to the Physical Environment of the coast, identified during public consultation on the SMP.

## VOLUME 3 – DEVELOPED AND NATURAL ENVIRONMENT

PART A : COASTAL DEFENCES
Examines the current state of knowledge of coastal defences, and where possible reviews the nature and standard of defence provided, and their suitability to provide the standards required in the future.

PART B : DEVELOPED ENVIRONMENT
Human use of the shoreline is assessed through descriptions of land use, coastal activities, offshore use and archaeological interest, and requirements for coastal defence planning.

PART C : NATURAL ENVIRONMENT
Reviews landscape, habitat and earth science conservation value of the shoreline, and the key issues relating to coastal defence provision.

PART D : PLANNING
Detail present planning procedures and sets out existing policies and objectives, of both statutory and non-statutory plans, of relevance to coastal defence.

PART E : LIST OF RELEVANT DOCUMENTS
A bibliographical listing of those documents/sources used during the production of the SMP.

ANNEX A : ISSUES ANALYSIS AND STATEMENT OF OBJECTIVES
Presents shoreline management issues and associated objectives, relevant to the Developed and Natural Environment of the coast, identified during public consultation on the SMP.

## VOLUME 4 – MAPS AND SUPPORTING INFORMATION

*Maps presented in Parts A to D are at 1:25,000 scale.*

PART A : DEVELOPED ENVIRONMENT MAPS
These base maps illustrate the land use of the area, categorised into ten classifications.

PART B : CONSERVATION MAPS
Includes details of all international, national and local conservation designations, whether statutory or non-statutory. Archaeological and historical features of a terrestrial and maritime nature are also depicted.

PART C : COASTAL DEFENCES
The extent and nature of all forms of coastal defence have been mapped.

PART D : PHOTOGRAPHS
A series of photographs representative of each Process Unit.

A consistent **page numbering** style has been used throughout Volumes 1 to 3, as follows:

**Volume – Part Page**

For example, 1-A4 is Volume 1 Part A Page 4.

# INTRODUCTION TO THIS VOLUME

During their development of SMPs around the country, Halcrow have been able to witness, at first hand, the "evolution" of the SMP process and have subsequently been involved in many useful discussions and exchanges of ideas. One important outcome of this has been the proposal of adopting wider remit "Process Units" which Halcrow advocated and used in 1996 (Suffolk Shoreline Management Plan).

The structure of this Volume has been set out in the same vein, purposely to assist in the preparation of the Volume 1 Strategy Document. Therefore, the following text has been produced to clarify why and how the study area has been divided up the way it has and also to provide an indication of how this breakdown will be used effectively during Phase 2.

## WHY SET UP PROCESS UNITS ?

The key to achieving effective and sustainable management of the shoreline is linked to a sound knowledge of coastal processes and their interaction along the coast. All management decisions ought therefore to be linked primarily to the processes and their implications. Management strategies need to address these implications on a broader scale than land use alone and the defence options for individual management units must be appraised against the overall processes within a larger area. The structure of the management for Poole and Christchurch Bays is therefore one where conformity with the requirements of the Process Unit is paramount. Therefore, it is for these reasons that the Process Unit framework has been set up for this SMP.

The basic building block for the development of policies within an SMP is the "Management Unit". In the MAFF Guidelines (1993), a management unit is defined as "a length of shoreline with coherent characteristics in terms of both natural coastal processes and land use". The Guide goes on to say that "these are likely to constitute discreet benefit areas at the economic appraisal stage". For this SMP, a broader more strategic approach is to be adopted that takes into consideration wider issues and impacts that should, over the long term, provide a more useful framework from which to manage the shoreline.

The groundwork for using this approach has been set within this Volume and, where possible, the final strategy Document (Volume 1) of the SMP will utilise this to its fullest effect.

## HOW ARE PROCESS UNITS IDENTIFIED ?

The sub-cell system derived from the "Mapping of Littoral Cells" report commissioned by MAFF in 1993 (Motyka and Brampton) originally categorised sub-cells on the direction and movement (littoral drift) of sand and gravel along beaches. Two main types of boundary between cells were recognised, firstly at littoral drift divides and secondly at sediment sinks (Motyka and Brampton, 1993). It was stressed in this report that the division into coastal cells is strictly applicable to the purpose of coastal defence management on non-cohesive beaches (such as Poole and Christchurch Bays). The direction and movement of sediment further offshore is unlikely to mirror littoral drift directions and boundary conditions in all cells.

Based upon the Terms of Reference set out for this SMP, the shoreline of the sub-cells shall be divided into discrete "Process" and associated "Management Units". A Process Unit is defined in the Consultants Brief as being "a length of shoreline with coherent characteristics in terms of processes and based upon an understanding of the geology and geomorphology, the prevailing sea conditions

and natural shoreline evolution". This is seen as a necessary development of the present MAFF Guidelines and one that is required to ensure sustainable management techniques are followed on the coast.

An important clarification to make is that the demarcation of these Process Units is not merely made on the geographic limits of certain physical features or landforms. Different coastal characteristics (such as dune, storm ridge or marsh) should not be separately divided based purely on the fact that they are very different in their morphological appearance. On the contrary, their formation is likely to be attributed to linked coastal processes that have occurred over a range of temporal scales. In addition to this, their integrity is dependent upon sedimentary budget regimes that act over a far wider scale than the geographic limits of a certain coastal feature.

With reference to Poole and Christchurch Bays, there is a strong physical relationship between areas of open coast and sediment sink areas (such as Poole and Christchurch Harbours). Consequently, interlinkages will and do occur especially between areas, such as harbour mouths and the open coast. There are also key strategic landforms (terrestrial or subtidal, such as Hook Sand or Double Dykes) where actions in one Process Unit may well be influential on the natural evolution of another. Therefore, the concept of introducing Process Units that emphasise links with adjacent units is ultimately required. This shall be assisted through the use of Process Unit Statements. The wordings used for these shall be presented in more detail during the development of Volume 1 ("The Strategy Document") and shall be subject to review and general acceptance from the Coastal Group.

## HOW ARE PROCESS UNITS DEFINED ?

The following definition has been created to explain a Process Unit. It is described as :

*"an area of coastline reflecting the complexity or simplicity of a particular coastal area, not merely representing lengths of coherent physical characteristics, but considering aspects of related littoral interdependencies that impact upon both ecological and geomorphological evolutionary trends over a range of spatial and temporal scales"*

## WHERE ARE THESE PROCESS UNITS ?

There are seven Process Units established for this SMP, based primarily on the identification of landforms, critical coastal processes (waves, currents), their interlinkages and variability giving special attention to their position and function within the overall sub-cell.

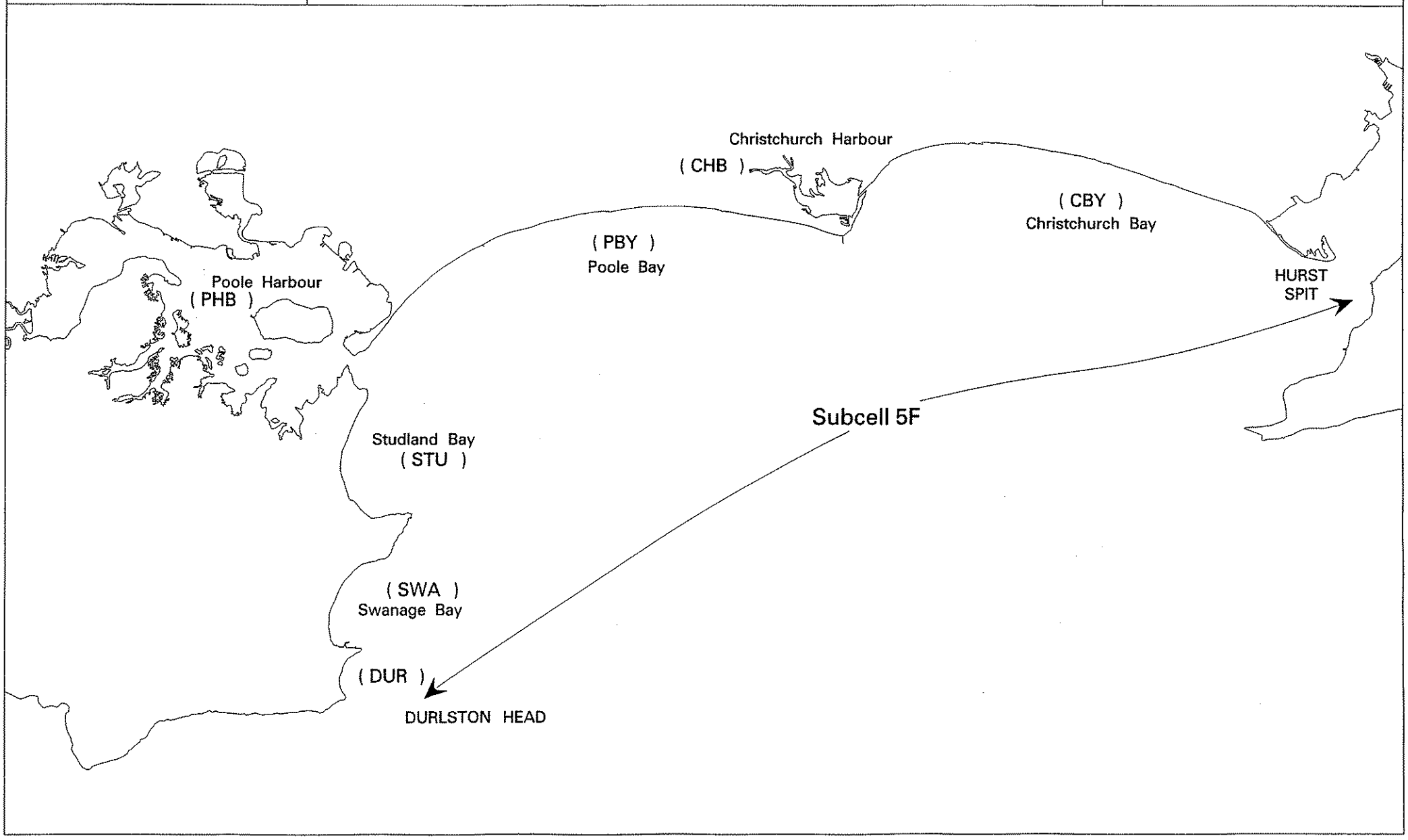
The Process Units, from east to west around the sub-cell (see opposite), are as follows:

| | |
|---|---|
| 5F-1 | Hurst Spit to Hengistbury Head Long Groyne |
| 5F-2 | Christchurch Harbour |
| 5F-3 | Hengistbury Head Long Groyne to Sandbanks Ferry Slipway |
| 5F-4 | Poole Harbour |
| 5F-5 | South Haven Point to Handfast Point |
| 5F-6 | Handfast Point to Peveril Point |
| 5F-7 | Peveril Point to Durlston Head |

Poole and Christchurch Bays Coastal Group

SHORELINE MANAGEMENT PLAN
POOLE AND CHRISTCHURCH BAYS
DURLSTON HEAD TO HURST SPIT (Subcell 5F)
Process Units

Halcrow
1999



## HOW THE PROCESS UNIT FRAMEWORK INTENDS TO OPERATE ?

The Process Unit framework, in very simple terms, has enabled the various topic areas to be conveniently divided up into manageable areas. This has been followed for the contents of Volumes 2 and 3 of the SMP as shown below :

***Volume 2***

- Geology / Geomorphology
- Coastal Conditions
- Shoreline Evolution
- Conceptual Sediment Process Models

***Volume 3***

- Coastal Defences
- Developed Environment
- Natural Environment
- Planning

In addition to this and from a more strategic view, the two tier "Process " and "Management Unit" approach will also prove most useful on two accounts. Firstly, it shall enable long term options (ie: long term sustainability) to be developed that will permit free operation of key process components (ie:geomorphological evolution). Secondly, shorter term measures may be set out for individual shorter management units *so long* as management decisions comply to the longer term objective of an area and thus are not detrimental to processes over a broader timescale.

## WHAT COMES NEXT ?

The results of the Phase 1 studies (Volumes 2,3 and 4) represent a detailed understanding of the processes and issues relating to Poole and Christchurch Bays. At this point, the division into Process Units and Management Units can be confirmed and the detailed objectives for each Unit established. These will be forwarded under separate cover to a draft level.

The next step (Phase 2) will be to determine the appropriate policy for each of these Units taking into account the various pressures and conflicts of interests that exist, and establish the preferred strategic coastal defence options to achieve these policy requirements. This needs to take into account all of the issues and objectives identified. Additional information to be established will be the standards of service required by any future defence policy and the economic justification for providing protection. The MAFF guide to coastal defence authorities on Shoreline Management Plans describes four generic strategic options for defence. The SMP will adopt these as a baseline but not be restricted by them, ie: elaboration on these options will be put forward particularly in terms of time frame strategies (long and short term actions).

Presentation of the strategies will be in the form of individual Management Unit Statements which summarise the main information and issues, and show the rationale behind the strategic decisions that have been proposed. Recommendations will also be made on how the strategic coastal defence options should be implemented, to justify their suitability as a sustainable solution. The Statements will include descriptive maps indicating the key aspects for each unit.

# Part A

# COASTAL DEFENCES

*Volume 1 of the SMP shall identify future strategic coastal defence options. As a precursor to this, there is a need to consider how the shores of Poole and Christchurch Bays have been defended in the past and what exists today. The nature of these defences may be influential upon the evolution of the coast, whilst their condition can provide guidance on the sustainability of particular options. It is also necessary to know the adequacy of these defences to provide the standards of service required to protect the assets that lie behind them.*

*This section determines the current state of knowledge and existence of information relating to defences around the coast. Where adequate information exists, this has been used for assessing the standards of defence provided at present and thus the suitability of such defences to provide the standards required for the future.*

## COASTAL DEFENCES

## CONTENTS

# 1 INTRODUCTION

## 1.1 Format of this Report

This report on coastal defences is divided into 5 sections. Following this introduction, Section 2 describes the general situation with regard to coastal defence administration. Proposed procedures for future co-operation between authorities and other bodies for the undertaking of work are contained within other sections of the report. In Section 3, an overview of existing information sources and the quality/usefulness of details contained therein is provided. Section 4 explains the approaches / methods that have been adopted in developing this Shoreline Management Plan to assess the existing coastal defence situation, whilst Section 5 provides details on the defences themselves.

Section 5 is structured according to the delineation of coastal process units. For each, information is provided on where defences already exist and their general nature, the ownership of defences, and the authorities who have local defence responsibilities or powers.

## 2 COASTAL DEFENCE ADMINISTRATION

The administration of coastal defences falls into two distinct areas: coast protection, the protection of land from erosion or encroachment by the sea, and sea defence (or flood defence) which is the protection of land from inundation by the sea.

The Coast Protection Act 1949 provides maritime district councils with permissive powers to carry out coast protection works. They are also responsible for regulating any works carried out by others (the primary responsibility for protecting land or property lies with the owner).

Both the Maritime District Councils and the Environment Agency have powers to carry out defence works. Under the Water Resources Act 1991, the Environment Agency has a duty to exercise a general supervision for flood defences, which may be their own defences or regulating the defence works of others. Any proposals affecting such defences must have the consent of the Environment Agency. The powers to carry out new works are again, however, permissive. Local authorities also have powers to carry out flood defence works.

Coast protection works and flood protection are promoted by the operating authorities where there is benefit to the community. MAFF are responsible for making available grants towards capital expenditure under both Acts, subject to these being environmentally acceptable, technically sound and economically worthwhile.

Coastal defence has previously been established as relating to areas on the coast and within creeks or estuaries up to certain points. The areas where the term coastal defence no longer applies have previously been determined and are referred to as the Schedule 4 boundaries, as defined by the 1949 Coast Protection Act (including subsequent amendments), which for this region are:

The River Frome, at Turner's Cove

The River Piddle, at Buck's Cove

The River Sherford,

The River Stour and Avon, at Clay Pool

Some of these boundaries have been somewhat arbitrarily determined and bear little relationship to coastal processes. Nevertheless, the existing coastal defences are identified as those which lie seaward of these agreed limits. However, this is an issue as it has implications for the amount of grant aid made available.

# 3 REVIEW OF INFORMATION SOURCES / USEFUL REFERENCES

## 3.1 Introduction

Most information regarding existing defence along this coastline is available from either the local authorities, the Environment Agency or MAFF. The two sources of greatest importance are the Coast Protection Survey of England (CPSE) and the Sea Defence Survey (SDS). These both provide essential information for the Shoreline Management Plan.

## 3.2 Coast Protection Survey of England

The CPSE (1994) was commissioned by MAFF and details all defences which have been constructed to protect against coastal erosion. These defences are often the responsibility of the individual local authority, although a number are maintained by others such as the County Council, harbour authorities and various private owners.

Volumes 5 and 6 of the CPSE contain the details for this region and comprise maps, photographs, outline cross sections and tabulated defence details. The latter includes details on location, structure type and material, condition, residual life and ownership. This is also available in digital database format. The CPSE digital database is updated annually to incorporate more recent changes and/or errors in the original data.

Defence information is divided by defence lengths and defence elements. Changes in defence length occur where there is a significant change in the construction, ie a change in the form of the structure, whilst defence elements are defined as the individual components of the structure. This provides a relatively clear identification of the individual defences and, combined with the sections, photographs and maps, gives very good quality information. Maps illustrating the geographical extent of the defences described are reproduced in Figures 3.1 to 3.8 (see Volume 4).

## 3.3 Sea Defence Survey

The remaining defences along this coastline is included in the SDS (1990/91), which was commissioned by the NRA (now incorporated into the Environment Agency). This details all of the defences which provide flood defence. Whilst the Environment Agency has a general supervisory duty for such flood defence, the majority of the defences within the region covered by this Shoreline Management Plan are owned or maintained by others such as the local authorities or private owners.

This information was recorded in three phases. Phase I contained details of the then NRA-owned defences, whilst phases 2 and 3 comprised those flood defences maintained by the local authorities and private owners. Details are provided in a series of reports with separate volumes for Phase 1 and one volume for each of the local authority districts. These contain cross sections of each defence and tabulated details including location, structure type and material, condition, residual life and ownership. Again, these details are also available in digital database format. Phase 4 of the survey details tidal defences in all ownershps.

Like the CPSE, defence information is divided between defence lengths and defence elements. However, distinction between different structures is more

difficult with elements sometimes denoting a sectional change and for other defences indicating a longitudinal change.

It should be noted that at some locations there is considerable overlap between the CPSE and the SDS. Phases 1-3 of the SDS is reviewed annually by the Environment Agency. The defence numbering system is currently being revised to recognise process and management units.

## 3.4 Other Sources

In 1989, HR Wallingford produced 'A Macro Review of the Coastline of England and Wales' for MAFF. This describes the coastline for the whole region and complements the CPSE and SDS information. The details provided on man-made defences are not extensive. However, information on the natural condition of the coast is combined to give a useful overview and appreciation of the setting for these defences. There are other documents which provide an overview of the coastal defence situation in the region, such as the JNCC reports in their series 'Coasts and Seas of the United Kingdom'. These provide broad information but are generally not sufficiently detailed to provide additional information for the Shoreline Management Plan.

A number of documents provide legislation, policy and guidance on strategic defence. Where relevant these are referred to elsewhere within this Shoreline Management Plan (see report on Planning Issues). The 1993 MAFF publication 'Project Appraisal Guidance Notes' provides indicative standards of protection that should be sought for different situations. Of particular relevance is 'Coastal Defence and the Environment - A guide to good practice' (1993) produced by MAFF which discusses particular techniques and approaches for a range of defence situations. Another document with similar details is the 'Guide to the Selection of Appropriate Coast Protection Works for Geological SSSIs' (1991), by HR Wallingford.

There are a number of other guides which are of use in assessing the standard of service offered by defences and these should be consulted when doing so. The best current practice is well defined by the CIRIA/CUR publication 'Manual on the Use of Rock in Coastal and Shoreline Engineering' (1991) and the CIRIA 'Beach Management Manual' (1996) with their attendant references.

Each of the local authorities and the Environment Agency hold various details of some of their own structures, particularly those built or refurbished during the past 20 years. Much of the detailed information relates to construction, ie drawings, and specifications. There are also a number of structure inspection reports which provide information on the condition of some of the older defences, giving details of their composition. In addition there are Engineers Reports for some schemes, which are also held by MAFF. However, whilst these vary in their extent of information, in general these do not contain much information of further use.

Some of these scheme and construction details will be of use in subsequent stages when it comes to the future implementation of the Shoreline Management Plans, but they are not required for development of the strategy options.

# 4 ASSESSMENT OF COASTAL DEFENCE SITUATION

## 4.1 General

The existing defence situation within each individual stretch of coastline has been assessed and is detailed in Section 5. This is initially based upon the data available from the CPSE, the SDS, and discussions with members of the Coastal Group. This provided good background on the existing situation regarding the defences and any existing coastal erosion and flooding issues. This has been supplemented by the provision of any additional defence details from the authorities.

## 4.2 Information Provided

Section 5 is structured by coastal process unit for convenience of presenting the information. For each process unit, details are given on which authorities/organisations have defence responsibilities or powers.

Within each process unit, further sub-division is made by location for ease of reference. At each location details are provided on the defences, type, length, ownership (although this should not necessarily be regarded as also suggesting a right of responsibility) and any existing reference/codes relating to present record systems. To provide a consistent overview of all of the defences within each area, data from the most recent update of the CPSE and Phases 1, 2 and 3 of the SDS have been combined.

## 4.3 Methods of Assessment

### 4.3.1 General

The Study has assessed the effectiveness of the existing defences. The objective of this exercise is to identify any unsatisfactory links in the line of defence in the study area. This objective has been satisfied by identifying the standard of service provided by the existing defence, whilst at the same time considering the envisaged longevity of the defence inferred by assessments of their condition and residual life.

In their Project Appraisal Guidance Notes (PAGN) (MAFF, 1993), the Ministry of Agriculture, Fisheries and Food (MAFF) define the standard of service as '... the annual probability that a sea wall, flood bank etc will encounter conditions even more severe than those for which it was designed.' In the absence of such design information, overtopping discharge threshold limits (recommended for design where wave overtopping is to be allowed) have been adopted. Indicative standards of protection are set out in PAGN Annex K, with varying levels according to the land use at risk.

The results of the assessment are presented in Tables 4.1 to 4.14 and illustrated graphically on Figs 3.1 to 3.8 (see Volume 4).

### 4.3.2 Outline Approach

The appraisal comprises four components:

(a) overflow
(b) overtopping
(c) residual life
(d) undermining

The standard of service achieved by a typical section under overflow and overtopping conditions is identified. The results are then combined to give an overall standard.

Residual life for the most part matches the CPSE/SDS assessment.

By identifying low lying foreshores that are undergoing erosion, and observing if they occur at locations where the defence structure depends on a high foreshore level, it has also been possible to make preliminary assessments of the likelihood of these structures experiencing some kind of toe failure in the future.

The wave and water level conditions used for the analyses were those presented in Chapter 3 of this document.

All of the analyses were repeated to allow for sea level rise. This was assumed to be 6mm per year, the figure stipulated in PAGN, Annex H.

4.3.3 Methods Applied

***Overflow***

Over flow occurs when the prevailing water level is greater than the crest height of the defence.

The overflow analysis consists of comparing the water levels, established by joint probability analysis for water levels and wave heights for different return periods, against the crest level of the defence. When the crest is exceeded, the defence has failed in overflow. The actual standard of service of the defence in terms of overflow is thus the highest return period for which the defence passed the overflow test.

***Overtopping***

Each type of defence structure has a critical level of wave overtopping that it can withstand before structural damage occurs. This is dependant upon parameters such as whether the defence is an embankment type structure having a back slope which allows overtopping water to run down, or seawall type structures. The type of construction of both these defence types also has a significance as to the overtopping volumes it can withstand, eg grassed embankments being more susceptible to washout than revetted ones, soft cliffs above defences having greater likelihood of erosion than hard cliffs. The following are critical overtopping rates for various structure types, which have been determined from analysis of damage occurrence from actual events (Goda, 1971) and remain in use today as standard criteria (eg CUR/CIRIA, 1991):

| Type of seawall construction | Threshold of critical overtopping litres/sec/m run |
|---|---|
| Seawall with backslope (Embankment) | |
| Crest and backslope unprotected | 5 |
| Crest protected and backslope unprotected | 20 |
| Crest and backslope protected | 50 |
| Seawall without backslope (Revetment) | |
| Apron unpaved | 50 |
| Apron paved | 200 |

The type of defences along this coastline vary from simple beaches to concrete walls which are either vertical or sloping. To analyse these structures correctly it was necessary to use a number of different methods, each one being for a specific structure type. For sloping, simple and bermed, revetments, seawalls and embankments Owen's formulae are used to determine the wave overtopping volumes (HR Wallingford report EX924, "Design of Seawalls allowing for wave overtopping",1990). Where such structures incorporate a crest or wave return wall, the method outlined in the HR Wallingford report SR261 "Effectiveness of recurved wave return walls", Owen and Steel, 1991 was used. Vertical wall structures were analysed using the recently published method by Besley, Stewart and Allsop, (HR Wallingford), "Overtopping of vertical structures: new prediction methods to account for shallow water conditions", proceedings ICE International Conference on Coastlines, Structures and Breakwaters, 1998. Finally, where it has been necessary to analyse natural defences only, the method used was that presented by Van der Meer within "A code for dike height design and examination", also published within the proceedings ICE International Conference on Coastlines, Structures and Breakwaters, 1998.

Overtopping analysis has been performed for two different scenarios as follows:

- present day conditions;
- increase in storm exposure to allow for 50 years of sea level rise;

For each scenario, the overtopping rates associated with the joint occurrence of waves and water levels for return periods of between 1 and 100 years have been calculated. The results of the wave overtopping have been summarised in Tables 4.1 to 4.14. In each case the standard of service of the defence was taken as the highest return period for which it passed the overtopping test.

Assessment of present day conditions considered the existing situation, ie present predictions of waves and water levels, together with the beach profiles.

Allowance for sea level rise used the same information but considered an increase in water levels over 50 years, and the consequent increase in wave exposure that would also occur.

The wave and water level data (including sea level rise predictions) used for the analyses were those derived at representative locations around the coast and within the harbours as presented in the coastal processes section of the report. This established the nearshore conditions, however, wave characteristics will

further alter as they travel through the inshore zone and up the beach. Shallow water wave characteristics have therefore also been studied to determine actual extreme wave conditions for different return periods coincident with each water level of similar return period. Consideration has been given to changes in beach slope, using the survey profiles, adopting the methods of Goda (1985) and ENDEC (presented in CUR/CIRIA 1991).

***Residual Life***

The CPSE and SDS both contain an assessment of the residual life of each of the defence elements which they describe. Both surveys have recently been reviewed and updated by local authorities and the Environment Agency. There being no scope for the detailed field appraisal of all structures, the surveys are considered to provide a sufficiently accurate appraisal of the life expectancy of each element.

The two surveys have different time bands of residual life into which the defences were placed. The CPSE has the following bands:

> 10 years
5 – 10 years
< 5 years

whilst the SDS employs the following classification system:

> 5 years
2 - 5 years
< 2 years

***Undermining***

The methodology adopted for assessing the susceptibility of defences to undermining is described in Section 6.8.

## 4.4 Survey Results

Selected extracts from the updated versions of the CPSE and SDS databases are reproduced in Appendix A at the end of this Chapter. Maps illustrating the geographical extent of the defences described are reproduced on Figures 3.1 to 3.8 (see Volume 4). A separate glossary of terms used in the description of the Defence Lengths and Defence Elements is also provided.

# 5 REVIEW OF COASTAL DEFENCES

The following sections contain the review of coastal defence details for each of the coastal process units as follows:

Area 5F-1 Hurst Spit to Hengistbury Head Long Groyne
Area 5F-2 Christchurch Harbour
Area 5F-3 Hengistbury Head Long Groyne to Sandbanks Ferry Slipway
Area 5F-4 Poole Harbour
Area 5F-5 South Haven Point to Handfast Point
Area 5F-6 Handfast Point to Peveril Point
Area 5F-7 Peveril Point to Durlston Head

For each process unit, the structures within that unit are described in terms of their location, form, nature, condition and ownership and their susceptibility to overflow. Selected typical defences within each unit are assessed to establish their effectiveness, sufficiency and the standard of service provided under extreme wave conditions. Appraisals of areas identified as being at risk from erosion as a result of a low level eroding foreshore and other influences are included.

Defence length numbers from the Coast Protection Survey and Sea Defence Survey are used eg 2757 (CPSE) and 071/1055D (SDS).

## 5.1 Hurst Spit to Hengistbury Head Long Groyne – (5F-1)

The existing defence structures in area 5F-1 are predominantly seawalls and rock armour revetments with timber groynes. The coastline consists of sandy beaches to the east and steeper shingle beaches to the west.

### 5.1.1 Description of Defences

Mudeford Quay is a low-lying former sandbank at the entrance to Christchurch Harbour which is now fronted by sheet piled walls and promenades. Further east, the promenade is fronted by a sand beach and rock groynes. The ground levels behind gradually rise from Friars Cliff where the sand beach widens towards Highcliffe.

From Highcliffe the beaches change to predominantly steep and shingle with lower sand foreshore. The cliffs gradually decrease in height, from 25 m at Naish Farm to below 8 m at Milford-on-Sea. Further east past Milford-on-Sea, the shingle beach continues and widens to form the embankment at Hurst Spit.

Hurst Spit shelters the Western Solent from the more aggressive wave climate in Christchurch Bay. The defences recently reconstructed in the Keyhaven and Pennington areas have been based on the assumption that Hurst Spit will continue to act as a barrier to waves entering the Western Solent. Indeed, the standard of protection afforded by all the defences in the Western Solent would have to be reviewed if Hurst Spit were to breach. Furthermore, there is clear evidence that the saltmarshes in the Lymington and Keyhaven areas will be adversely affected by any depletion of shingle levels on Hurst Spit ("Western Solent Saltmarsh Study", A Bradbury). Thus, Hurst Spit is of great significance to the coastal defences in this region.

Hurst Spit continues eastwards from Saltgrass Lane to its eastern tip over a length of 2.28 km. The shingle on Hurst Spit consists of eroded cliff material transported alongshore from Christchurch Bay. Coast protection measures throughout Christchurch Bay have reduced the supply of sediment. Indeed, the Spit has been

breached on several occasions in its recent history. The first recorded breach was in 1962 (HR Wallingford, EX 1601, 1987). There were further breaches in 1984 and in 1989. The damage due to the storms in December 1989 are described in the "Lymington/Pennington Flood Investigation", (NRA – Southern Region, 1990). Periodic nourishment has been undertaken to build up levels along Hurst Point, starting in 1981/1982. A £5 million coast protection scheme was carried out in 1996 to build up the embankment, as described below.

Responsibility for the defences along the first part of this defence length lies with NFDC.

2757 At Hurst Castle, there is a 100 m length of 3-6 tonne rock revetment. This revetment and the remainder of this length has been covered with excess shingle obtained from excavations. The existing timber groynes and breastwork have also been covered by the rock and shingle material. There is a masonry castle wall, built in the nineteenth century, to the rear of the defence.

A regular programme of re-nourishment will continue to maintain the spit as an effective barrier protecting the western Solent.

071/1055D A 1.54km long shingle embankment along Hurst Spit, which was built up with shingle recharge in 1996, see the notes for defence lengths 2757 and 2758.

2758 Immediately to the south of Saltgrass Lane, is a 6-10 tonne rock armoured breakwater, measuring 90 m in a longshore direction, and 50 m in a crosshore direction. The crest of this breakwater is 2.5m ODN.

Over the 1.87 m length south of Saltgrass Lane, the existing shingle embankment has been built up to a crest level of 7m ODN (sloping to 5.0 m ODN at Hurst Castle), and a crest width of 12 m. The crest width prior to this scheme was 5.20 m ODN. The seaward slope of the embankment was built at 1 in 4, with a 1 in 2.5 landward slope.

2759 Under the above scheme, the 550 m length from the eastern rock groyne at Milford to Saltgrass Lane, the existing rock armour was dismantled and re-constructed as a 3-4 tonne rock revetment. The hinterland to this length is rural.

071/1054D See notes for defence length 2759.

2760 The next 250 m to the east, up to Sturt Pond, consists of a concrete stepwork profile backed by a recurved concrete wave wall. At the bottom of the steps is a sloping apron. The concrete construction appears to be in satisfactory condition. The variable beach level means the structure could be in danger of undermining if beach levels reduce significantly. Further protection to this section is afforded by a number of 20 to 30 m long rock groynes constructed over this section. The year of construction of the defence is believed to be 1964.

071/1053D See notes for defence length 2760.

2761 Over the next stretch of 180 m is a concrete wall and stepped apron slab. The apron slab provides adequate space for beach chalets.

Over the entire length between White House and the end of this concrete wall and apron slab, there are timber groynes in a poor state of repair. The year of construction is estimated as 1960.

071/1052D See notes for defence length 2761.

2762 The next 280 m to the east consists of a stepped stone masonry wall constructed in 1964, backed by a wall constructed of concrete blockwork. This rear wall, estimated to have been constructed in 1960, descends from a level of 5.60 m ODN to 5.00 m ODN at its eastern end. To the rear of the landward wall (the concrete blockwork wall) is a promenade and car park. Between the two walls is a 7 m wide lower level promenade which also contains beach chalets. Both these walls are considered to be in a poor condition, requiring maintenance work.

071/1051D See notes for defence length 2762.

2763 The form of construction changes to the east to a 80m length of concrete sea wall backed by a boundary wall, protected by rock armour placed on the beach. The concrete wall is reported to be in a satisfactory condition, whereas the rock armour requires some maintenance. At its eastern end, this wall rises from a level of 5.00m relative to Ordnance Datum Newlyn (mODN) to 5.60m ODN over 10m. The wall was originally constructed in 1939 and renovated in 1992. The rock revetment was constructed in 1994. Due to the relatively low beach and the dependence of the structure on adequate beach levels for stability, this section appears to be vulnerable to undermining.

2764 The eastern side of Milford-on-Sea (from White House to Sturt Pond) is protected by concrete sea walls of slightly varying forms. There is a 170 m length of masonry wall with concrete coping, reported to be in poor condition. The lower part of this wall has a stepped profile. The estimated construction year is 1960.

2765 At Milford-on-Sea over a length of 0.9 km is the weathered Rook Cliff. The cliff toe is protected by a concrete wall founded on a steel sheet piled toe, estimated to have been constructed in 1970. Due to the wall foundations becoming exposed during storms in 1989, 200 m of 2-4 tonne rock revetment and nourishment using gravel rejects was undertaken by NFDC in 1992 ("Hordle Cliff Emergency Works 1992 – Engineer's Report", 1993). At present both the concrete wall and the steel sheet piling is mostly buried under the beach shingle material. The condition of the wall and piling is considered to be satisfactory (only minor maintenance required). There is further protection in the form of timber groynes which are substantially covered by the beach shingle. The groynes are in a poor condition requiring some maintenance work to return them to a satisfactory state.

2766 Between the Beckton Bunny and Milford-on-Sea is the Hordle Cliff. This consists of 2.5 km of unprotected, eroding cliff face over which many significant slippages have been reported. This stretch fronts an area of mainly agricultural land with some residential properties.

2767 The outfall at Beckton Bunny consists of a 12" cast iron pipe with concrete surround, contained within steel sheet piles, and behaves in a similar manner to a groyne, in terms of its effect on sediment transport. There is some 2-6 tonne rock armour protection mainly to the eastern side of the outfall. There is heavy algal growth on the rocks and a strong odour from the outfall. It is estimated that the rock armour was originally placed in 1980, with more extensive protection works carried out in March 1996. The cliffs at Beckton are unprotected and are reported to be suffering from significant erosion.

2768 Coast protection measures extend over the 1.88 km length of eroding cliffs in front of New Milton and Barton-on-Sea. Protection takes the form of rock groynes between Cliffhouse Hotel and the Golf Course. The groynes are approximately 50 m long and some of which were constructed between 1975 and 1983, using 4 tonne rock armour. This length is also protected by a 3-4 tonne rock armour revetment which was constructed in 1990. The revetment comprises two parts. The lower part is at beach level, and the higher part protects the upper slope. To the rear of the upper slope is a 7 m wide compacted earth access roadway. Both the rock groynes and the rock revetments are in a satisfactory condition.

2769 Chewton Bunny is on the boundary of NFDC. To the east of this point are significantly eroding cliffs. Naish Farm holiday village is reported to have lost several buildings due to cliff erosion. there is a lack of sediment deposited in this area due to coast protection work west of Highcliffe which intercepts the littoral drift. The length of cliff in front of Naish Farm is unprotected. NFDC were planning to implement a scheme in early 1997 which would have involved depositing 450,000$m^3$ of shingle between Chewton Bunny and Barton-on-Sea. For several reasons NFDC were not able to obtain the material whilst available and the scheme did not proceed.

Responsibility for the defences along this length lies with Christchurch Borough Council.

2601 At Chewton Bunny the 70 m long armour rock, shore-linked, shore-parallel breakwater was constructed in 1991 to protect properties above Chewton Bunny. Cliff drainage was installed in 1993 and shingle was placed in the lee of the breakwater. These measures were reasonably effective in preventing further erosion of the cliffs immediately adjacent to Chewton Bunny by wave action.

2602 At Highcliffe, a timber revetment and groyne scheme was constructed in the 1960s to protect the 1.35km frontage from coastal erosion. A programme of cliff stabilisation works was carried out in the 1970s. The timber groynes were replaced with alternating long and short groynes (70m and 25m long respectively) in 1980, 1984 and 1992. CBC's current policy is to re-nourish the beach. 75,000 tonnes of shingle were placed in 1985, 28,000 tonnes in 1992 and CBC currently place 1-2,000$m^3$ of nourishment annually at the western end of Highcliffe.

2603 At Steamer Point, a crude 100m long rock revetment was constructed in 1989 to halt terminal erosion.

2604 Immediately to the west a 310m long apron with a massive re-curve sea wall was constructed in the 1960s. Although the toe piling is currently buried, it is in poor condition and if the beach level falls, the piles will deteriorate rapidly.

2605 A series of six 50m long timber groynes and a concrete revetment with a sheet piled toe were constructed in 1979 to defend 380m length of Friars Cliff. The concrete revetment is deteriorating, with cracks evident and a possible loss of fines immediately behind the sloping upper section of the revetment. The stepped toe of the revetment is currently buried by sand, levels which have increased over the last 10 years.

2606 At Avon Beach, a further five 50m long timber groynes are backed by a concrete wall, a promenade and a 240m long concrete splash wall. The sand beach has increased in size over the last 10 years.

2607 Along a further 210m length of Avon Beach, shingle nourishment and two 60m long groynes, constructed from 1 to 4 tonne rock armour in 1988, provide the main defence. The shingle nourishment has been buried by accreted sand. At the rear of the beach there is a large wave wall with a stepped toe, there is a promenade behind the wave wall.

2608 The primary feature at Gundimore is the 380m long wave wall with a sloping concrete apron and sheet piled toe. Behind the wall a promenade and splash wall provide secondary defences. When the wave wall was constructed in 1978 a large beach accreted and was retained by constructing a series of rubble groynes, using material from the old seawalls. The frontage appears relatively stable.

2609 Concrete piles were installed around Mudeford Quay in 1935. In 1970 and 1976 sheet piles were installed following the collapse of the concrete piles, further sheet piles were installed in 1946, 1950 and 1961. In early 1994 the piles were at the end of their useful life and a new sheet pile wall was constructed 2m seaward of the existing line of piles. The area between was reclaimed to provide a new quay structure.

2610 There are no defences protecting the beach huts on this 270m length on the distal end of the Mudeford Sandbank. Currently the beach is deteriorating and the dunes are being lost. CBC consider that there is a need for formal managed defences along this length. (adjust position of CPSE markers on plan, see CBC plan).

2611 Two 20m long rock groynes and a rock revetment were constructed and shingle re-nourishment was placed on the beach in 1980 to reduce coastal erosion along this 190m length of Mudeford Sandbank. The defences were designed and built to 1970s standards and are now inadequate and need to be upgraded.

2503 A 200m length of the offshore face of Mudeford Sandbank is protected with a rock armour revetment, three 60 m long rock groynes and shingle re-nourishment completed in 1980. The defences were designed and built to 1970s standards and are now inadequate and need to be upgraded.

2504 A further 270m length on the offshore face of Mudeford Sandbank. Timber and concrete groynes and a seawall were installed in the late 1940s and 1950s. The concrete wall and sheet piled toe were constructed in the 1960s to prevent the breakthrough of the Sandbank. Following this a splash wall was installed to prevent overtopping which was undermining the rear of the wall. In 1991 two rock armour groynes, 60 and 66 m long, were constructed and shingle re-nourishment was placed on the beach. Since 1991 the beach along this length has continued to accrete, the original 12m wide berm of shingle re-nourishment is now covered with sand, and the sheet piled toe is currently buried. The defences here are adequate at present, however beaches are being starved due to updrift deficiencies.

At the Southern end or root of the Sandbank.

2505 At the southern end or root of the Sandbank, four 60m long timber and concrete groynes and a seawall were constructed in the late 1940s and 1950s along a 340m length of the coast to the east of the Long Groyne. The wall was strengthened and rebuilt in parts during 1965 and 1972. In 1985 three timber groynes were replaced and in 1990 the northern groyne was lined with rock armour. The defences along this length are in a poor state of repair, the timber groynes are inadequate, the beach level is low and the old timber revetment is exposed. The Mudeford Sandbank Groyne Scheme is due to start on site in winter 1998/1999 and involves increasing the standard of protection with additional rock groynes and beach recharge.

The following coastal defences are maintained by Bournemouth Borough Council.

2506 On Hengistbury Head a 360m length of coast, immediately to the east of the Long Groyne, a rock revetment, five rock groynes (typically 45m long) and gabions, at the foot of the cliffs, were constructed in 1987 to retain the beach and halt erosion of the cliffs. The groynes have subsequently trapped large volumes of sand, however at the same time the middle of Mudeford Sandbank suffered beach lowering. In 1991 a 20m long rock groyne was added at the northern end of the 1987 groyne scheme to overcome terminal erosion and one of the existing timber groynes was lined with rock armour.

5.1.2 Assessment of Defence Standard

Christchurch, Highcliffe, Barton on Sea and Milford on Sea are medium density urban communities which would warrant a standard of protection against the 1 in 100 year storm event. The other lengths of the frontage are protecting agricultural and rural land, or holiday camps, for which a 50 year return period standard of protection would normally be adequate.

Using present day water levels the standard of protection against structural damage was in excess of the 100 year return period event for all structures between Hurst Spit and Christchurch Harbour entrance. Between the Harbour entrance and Hengistbury Head Long Groyne, the standard of protection varies from less than 1 in 1 year to greater than the 1 in 10 year storm event. The agreement with English Nature that enabled the defences to be built in 1985/86 between the Harbour entrance and the Hengistbury Head Long Groyne required a

less than recommended standard of defence to be provided to enable high spring tides to bring sea borne vegetation and seeds to the foot of the cliffs. This was accepted by BBC and the funding authority MAFF.

A similar analysis for the standard after 50 years, allowing for future sea level rise, revealed that the standard of protection against structural damage was in excess of the 100 year return period event for all structures between Hurst Spit and Christchurch Harbour entrance, apart from the tip of Hurst Spit which affords a 20 year return period standard of service. English Heritage are seeking funds to protect Hurst Castle. Between the Harbour entrance and Hengistbury Head Long Groyne, the standard of protection is less than the 1 in1 year event for the entire length.

Christchurch Borough Council (CBC) are in the process of developing a coast protection scheme to improve the standard of defences along Mudeford Sandbank.

Full details of the overtopping and overflow analysis are included in Table 4.1 at the rear of the report.

## 5.2 Christchurch Harbour – (5F-2)

The defence structures in Christchurch Harbour are mainly seawalls. Sandbanks and shingle beaches form the coastline.

### 5.2.1 Description of Defences

081/2080 A 30m length of privately owned concrete wall with a pitched toe has a crest level of +1.92m ODN. The wall is in a poor state of repair and is currently being undermined.

081/2070 A 70m long sheet steel piled wall retains the garden of a residential block built in the early 1990s. The wall is privately owned and is in a poor state of repair.

081/2060 At Mudeford a privately owned 140m long embankment and concrete wall. The wall protects the hotel and its garden and forms a protective face for the embankment.

081/2050 A 200m long privately owned wall constructed from timber sheet piles. The wall is in a poor condition since the fill has been washed out from behind the wall.

081/2040 The foreshore to the west of Mudeford is protected by a 300m long clay embankment which is in a poor state of repair. The embankment is privately owned. The embankment acts as a protection to a small tidal lagoon and protects the adjacent portion of timber wall.

081/2030 This 750m length is defended by a privately owned masonry wall. The condition of the wall is very poor in places. The walls are of varied construction but are generally of a similar height and condition. The shingle beach levels are low and undermine the walls. Some repairs have been carried out at the toe of the walls but erosion is continuing and the stability of the walls is threatened in places.

081/2020 A 80m length of privately owned masonry wall, which is in a fair condition.

081/2010 Clay banks and a masonry wall extend over this 100m length.

2501 A 160m long low level gabion wall protects the inshore face of Hengistbury Head and an exposed length of private road that provides access to Mudeford Sandbank. The gabion wall was constructed in 1987 and is in good condition.

2502 The inshore face of Mudeford Sandbank, beach access road and beach huts are protected by a 380m long sandbank which is reinforced in places with a small rock armour revetment. The 30m wide sandbank is subject to gradual erosion. CBC has carried out coast protection duties on Mudeford Sandbank since 1931, under the terms of the lease of the Sandbank from BBC because of the importance in maintaining the Sandbank, to prevent coastal erosion and flooding in Christchurch Harbour. A constant programme of works has been carried out to prevent a breakthrough of the sea through the split and is only now nearing completion.

Overall the attrition on the inshore face of Mudeford Sandbank is threatening the beach huts and the rear of the seaward defences. A new defence strategy is required along this length.

In addition, there are low masonry walls and slipways between Mudeford Quay and the first private properties, protecting the road, car park and some private properties.

5.2.2 Assessment of Defence Standard

Christchurch Harbour is a medium density urban community and will warrant protection against a 1 in 100 year return period storm event, in line with MAFF recommendations (PAGN, Annex K).

The standard of defences were assessed using extreme wave height and water level data as discussed in the coastal processes section of the report. Hind-casting analysis provided the wave climate within Christchurch Harbour.

Under present day water levels, seawater will overflow the majority of the structures on the north shore of Christchurch Harbour when the water level is greater than the 1 in 10 year event. Taking account of 50 years of sea level rise, water will also overflow these structures on any event more severe than the 1 in 1 year event.

Structural damage due to overtopping will occur as a result of any storm more severe than the 1 in 5 year and the 1 in 1 year events, for existing and 50 year water levels respectively.

Considering the coastal defences on the inner shore of Mudeford Sandbank, under present day water levels, the defences will provide protection against structural damage during 1 and 20 year storm events, dependant upon the particular length. Taking account of 50 years sea level rise, the defences will provide protection against structural damage during the 1 and 2 year storm events. Overflow calculations provided similar results.

CBC are in the process of developing a scheme on Mudeford Sandbank to improve the standard of the defences. Environment Agency have examined the feasibility of improving protection to the north shore of Christchurch Harbour however there was insufficient economic justification.

Full details of the overtopping and overflow analysis are included in Tables 4.3 at the rear of the report.

## 5.3 Hengistbury Head Long Groyne to Sandbanks Ferry Slipway – (5F-3)

Coastal structures in area 5F-3 range from groynes in conjunction with beach replenishment schemes to the east to groynes backed by seawalls to the west. Sand and shingle beaches form the coastline.

### 5.3.1 Description of Defences

2507 The Hengistbury Head Long Groyne was constructed in 1938 to encourage the accumulation of sediment in front of the cliffs, but this resulted in starving the beaches to the north and an increased rate of slippage of the adjacent cliffs. The mass concrete structure was constructed with dry mix concrete placed inside sand bags along its sides, in 1987 a 20m long groyne with the same armour was added, extending from the middle of its eastern side. The Long Groyne was repaired following the Hurricane in 1988 using rock armour. The landward end of the Long Groyne is protected, whilst the middle third and seaward end are vulnerable to wave attack. Maintenance is not urgent at the moment. The Long Groyne is seen to be a key element in BBC's current coastal management strategy.

2508 On Hengistbury Head at the toe of the cliffs there is currently only a 1.5km long eroding shingle bank. BBC plan to build five 50m long rock groynes to reduce erosion of the cliffs, between Double Dykes and the Long Groyne. Work is programmed to start in October 1998 and is due to finish in spring 1999.

2509 To the east of the BBC's groyne field, the cliffs at Double Dykes continued to erode rapidly, threatening to breach the cliff line to the east. This erosion would have created a flood channel into the southern side of Christchurch Harbour and separated Hengistbury Head from the mainland. To prevent this, in 1986 three 50m long rock groynes and a high gabion wall were constructed to extend the groyne field eastwards and to protect the 370m length of coast. At the same time, the northern end of the flood channel on the southern bank of Christchurch Harbour was protected with gabions. In 1988 143,000 tonnes of shingle were placed to recharge the beach between the Long Groyne and Southbourne promenade. The next recharge is planned for 2003.

2510 In 1987 two 70m long timber groynes were constructed along Solent Beach and a short section of gabion wall was constructed to protect the beach access and low lying cliffs. 143,000 tonnes of beach recharge was placed to recharge the beach between the Long Groyne and Southbourne promenade in 1988. The next phase of beach recharge is programmed for 2003. Two 70m long permeable groynes were constructed along this length in 1976 to reduce the effects of terminal erosion at the end BBC's groyne field. BBC are currently investigating whether to replace the permeable groynes with traditional timber or rock groynes since further groynes have been constructed to the east and there is no longer a terminal erosion problem in this area. The permeable groynes are due to be replaced in 1999.

2511 There are 33 timber groynes along the 4.2km long Southbourne frontage, typically 50m long. For the 52 groynes along their frontage BBC have established a phased replacement programme, maintaining groynes as necessary and replacing them at the end of their 20 to 25 year life. Between 1974 and 1986 approximately two groynes were built per year and from 1986 four to five groynes were built per year. Thus in October 1998 three groynes will be replaced, in 1999 the permeable groynes will be replaced (in defence length 2510) and in 2000 four groynes will be replaced. Therefore the age of the groynes vary between 20 years old and new.

658,000 cubic metres of sand recharge was placed to recharge the beach between Bournemouth Pier and the Southbourne end of the promenade in 1975. Approximately 300,000 cubic metres were placed along this defence length in 1989. The next phase of beach recharge has been programmed for 2003.

Coast protection structures were first constructed in western Poole Bay in the 1890s. Further schemes involved the construction of revetments, seawalls and groynes, progressing eastwards, for example 1907-11 (Bournemouth to Boscombe), 1927-35 (Boscombe to Southbourne) and 1955-75 (Southbourne). By 1975 virtually the whole frontage from Poole Head to Solent Road was protected. Thus the masonry revetments were originally constructed along this frontage between 1927 and 1975, although a short length of vertical masonry wall was constructed in the 1930s. A splash wall was constructed along the entire length in the 1930s.

Boscombe Pier was originally built in 1889 as a 183m long wooden and iron structure. The head was re-built in reinforced concrete in 1927 and the neck in 1960.

2512 Between Boscombe and Bournemouth there are nine timber groynes (typically 50m long), two permeable concrete groynes and one solid concrete groyne (which is an outfall) of varying ages, see note for defence length 2511. The 2.5km masonry revetment was constructed between 1907 and 1911, however only 550m have a steel sheet piled toe. A short length of masonry wall was constructed in the 1930s and a splash wall was constructed in the 1970s, to protect the base of the environmentally sensitive and unstable cliffs.

In 1975 658,000 cubic metres of sand recharge was placed on the beach between Bournemouth Pier and the end of the promenade at Southbourne. The next phase of beach recharge has been programmed for 2003.

A wooden jetty was constructed on the site of Bournemouth Pier in 1861. In 1880 this structure was replaced with a 225m long pier constructed with a lattice girder neck with iron screwpiles. In 1894 and 1909 the pier was extended to 305m. The pier head was rebuilt in 1950, again in 1960 in reinforced concrete and the whole of the promenade deck of the pier was reconstructed in reinforced concrete in 1979/80.

2513 There are ten timber groynes, typically 50m long, of varying age along the 1.9km length of Bournemouth West. The groynes are

maintained and replaced in line with BBC's phased replacement programme. A masonry wall of varying construction extends along the rear of the beach and was constructed between 1909 and 1957. A re-curved wave wall has been built along a short length of revetment to reduce overtopping. To the rear of the promenade a splash wall protects the toe of the cliffs.

As part of the Beach Improvement Scheme Stage 2 carried out in 1974, a dredger dumped 106,260 cubic metres of dredged material between Bournemouth Pier and Durley Chine in the offshore zone where field studies, conducted in conjunction with HR Wallingford, demonstrated that dumped material would be transported onshore due to wave and current action.

Some 300,000 cubic metres of sand recharge was placed on the beach in 1989.

The defences along the following length are maintained by Borough of Poole, unless otherwise stated.

2401 At Branksome twelve groynes, typically 30m long, defend this 1.3km length of coast. the groynes were constructed in 1980 generally using steel piles and timber planking and are in good condition. The structure at Branksome Chine is a concrete and steel piled outfall. The groynes along this length are not as effective in maintaining the beach since they are short, 30m long, compared to the 50m long groynes along Bournemouth's frontage. At the root of the groynes, the promenade is protected by a stepped concrete wall. Although a short length of seawall was constructed recently, (1985), the majority of the wall was constructed in the 1960s and requires maintenance.

2402 Along the toe of Canford Cliffs a 130m long near vertical concrete wall was constructed in the 1970s, the crest of which is above promenade level, to protect the cliffs. One 30m long timber groyne was constructed in 1980.

2403 Along a further 440m length of Canford Cliffs four 30m long timber groynes were constructed in 1980. One or more of these groynes are likely to require major repair within 5 years. At the toe of the cliffs a 440m long concrete wall, with a re-curved crest wall, protects the promenade and cliff toe.

2404 Further west along Canford Cliffs, one 30m long timber groyne was constructed in the 1970s whilst the remainder of the Groynes were constructed in 1980 whilst the toe of the cliffs and promenade are protected by a 180m long concrete wall with re-curved crest wall and a masonry splash wall.

2405 The last 450m length of Canford Cliffs are defended by four 30m long timber groynes which were constructed in 1980 and are in good condition. Once again the promenade is protected by a concrete wall. The concrete wall is stepped and was constructed in the 1960s.

2406 Along this 630m length of Poole Sandbanks, various private properties are protected by a concrete revetment. There are also two low timber groynes. The condition of the revetment varies along its length.

2407 Along this section of Poole Sandbanks the form of the defences vary with a short length of masonry revetment (100m), near vertical concrete wall (200m) and near vertical concrete wall with wave return wall (160m). The condition of these defences is generally good. The beach is eroding and the remains of a number of rubble groynes constructed in 1898 but removed in the 1990's are being exposed. Borough of Poole are considering how to secure the beach in this area.

2408 At Poole Sandbanks a 150m length of timber breastwork provides the defence for a further short length (150m) of private properties.

2409 There are private properties along this 100m length of Poole Sandbanks. "Rock groynes built in 1995/6 have increased beach levels".

2410 A vertical steel sheet piled wall surmounted by an armour-flex slope was built along this 150m length of Poole Sandbanks to protect the private properties following damage in the 1989/90 storms.

"Rock groynes built in 1995/6 have increased beach levels".

2411 A one to seven tonne rock armour groyne and concrete wall were built in 1990 along this 100m length of Poole Sandbanks to replace damaged groynes.

"Rock groynes built in 1995/6 have increased beach levels".

2412 Vertical sheet steel piles with a concrete capping beam and porous concrete wall were constructed in the 1960s to protect the 200m length of private properties along Poole Sandbanks. The steel piles are in need of replacement. A further length of wall was constructed from masonry in the 1970s during which rock armour was placed at the toe, presumably to prevent undermining. A concrete crest wall was added in 1980 and the beach was re-nourished with 40,000m3 of fine sand in 1992 with material dredged by Poole Harbour Commissioners.

"Rock groynes built in 1995/6 have increased beach levels".

2413 The defences along this 210m length of Poole Sandbanks were improved in 1990 to defend the Haven Hotel and comprise; a rock revetment, sheet steel toe piling, promenade, concrete re-curved wave wall and a series of steel groynes.

2414 A 40m long stepped concrete wall was constructed on Poole Sandbanks with sheet steel toe piling to protect the car park adjacent to the ferry crossing and is in good condition.

5.3.2 Assessment of Defence Standard

The standard of defences were assessed using extreme height and water level data as detailed in the coastal processes section of the report.

Bournemouth and Poole are medium density urban communities which warrant a 100 year return period standard of protection in line with the Ministry of Agriculture Fisheries and Food (MAFF) Project Appraisal Guidance Notes (PAGN), Annex K.

Hengistbury Head Long Groyne and Double Dykes also warrant a 100 year standard of protection because of their strategic importance in the defence of the coast and protection of properties within Christchurch Harbour.

Using present day water levels the standard of protection against structural damage is in excess of the 100 year return period event for all of the structures in this coastal process unit. Allowing for 50 years of sea level rise, the standard of protection against structural damage is also in excess of the 100 year return period.

Bournemouth Borough Council (BBC) intend to continue monitoring the beach, refurbishing their existing groynes on a rolling programme (which assumes a groyne design life of some 25 years) and predict that the next beach replenishment scheme will be carried out in 2003. The only remaining undefended section of coast along this coastal process unit is between Double Dykes and the Hengistbury Head Long Groyne. BBC are in the process of developing a scheme along this frontage which may involve a series of short armour rock groynes and possibly beach recharge. Borough of Poole are reviewing their defences particularly at the middle section of Poole Sandbanks and are in the process of testing a number of innovative coast defence solutions.

Full details of the overtopping and overflow analysis are included in Table 4.5 at the rear of the report.

## 5.4 Poole Harbour - (5F-4)

5.4.1 Description of Defences

The coastal structures in Poole Harbour are predominantly seawalls. Revetments and breakwaters exist at a few locations in the area.

The coastline mainly consists of sandy beaches but mud flats are found within the harbour.

2415 There are various private masonry and concrete walls along this 1.42km length on the inshore face of Poole Sandbanks, whose age and condition varies. The walls have been undermined in places.

The first length is a 300m long privately owned concrete wall on the inshore tip of Poole Sandbanks. The foreshore is littered with the remains of previous walls constructed to prevent the erosion of the high sandbank on which high value property is built and each one is different in height and texture. The quality of the materials used is good, but the design of some of the walls is poor. Generally the walls are in a poor state of repair and BoP plan to provide a rock toe to counteract undermining.

2416 Along a further 900m length on the inshore face of Poole Sandbanks, a concrete wall was built to protect Sandbanks Road in 1982. There are some signs of undermining. BoP are responsible for the maintenance of this structure.

2417 At Shore Road a 1.25km concrete wall with bull-nose was constructed in the 1950s, the wall shows signs of significant damage, undermining and cracking. BoP are responsible for the maintenance of this structure. Maintenance work was undertaken in 1995 in order

to prevent collapse. In front of the wall a series of shore/low concrete groynes were constructed in the 1950s.

2418 A 320m length of footpath at Evening Hill is protected by gabions installed in 1975. A number of the gabions have broken and are in need of repair. BOP are progressing a scheme to build a rock revetment along this frontage.

2419 Various masonry and concrete walls defend private properties at Lilliput. There are also some outfalls and jetties along this length. There is a large cast iron outfall pipe running along the back of the foreshore over the last 200m length, and the defences rely heavily on it to prevent undermining. Generally the wall is in poor condition.

2420/2644 Two breakwaters, constructed from tubular steel raking piles and vertical sheet steel piles in 1972/73 provide a sheltered area for the private marina at Lilliput. In addition a 100m long rock revetment constructed at the same time protects the flats built within the marina area.

At Salterns Marina, there is a 410m long privately owned breakwater constructed from vertical steel sheet piles and raking tubular steel piles.

2421 A 280m long concrete wall built in the 1930s protects Blue Lagoon. The lagoon is fronted by private properties and a boatyard/pool. Although there are various walls within the lagoon, the PHC wall provides the first line of defence.

2422 A 880m long masonry wall constructed in the 1960s to protect the private properties at Parkstone. This length also includes a marina and boatyards. A new marina breakwater has recently been completed.

2423 A concrete faced masonry revetment and 270m long vertical wall were constructed in the 1930s as reclamation for open space.

2424 A small rock revetment constructed in the 1970s protects a 1.2km length of footpath along the edge of Parkstone Bay. The condition of the revetment is generally good although there is some overtopping damage near the slipway. Part of the formerly undefended length between 2424 and 2425 is now protected by a concrete wall (1994).

2425 Another 160m long small rock revetment constructed in the 1980s defends the coastline at Baiter. The defences along this length will require maintenance.

2426 Immediately to the west a 130m long armour-flex revetment (EA) protects a further length of the coast at Baiter.

2427 The 110m long rubble breakwater at Fishermans Dock protects the coast to the north and provides sheltered moorings for small vessels. It is proposed to replace the existing breakwater with a 500m long rubble-mound breakwater as part of the proposed boat haven development.

2428 A short length (150m) of masonry wall constructed in the early 1900's protects the RNLI lifeboat station and car park in Fisherman's Dock.

2429 At Poole Quay the construction of the seawall varies along its length. There is a 570m length of near vertical stone faced concrete wall, constructed in the 1890s. In the 1980s a steel sheet piled wall was installed in front of a 190m length of the older wall. Both walls are protected with timber fenders. PHC maintain these structures.

2430 At Poole Quay a further 190m length of quay wall constructed from concrete. The wall is in a poor state of repair and the remains of timber piles/fenders are visible in front of the wall. PHC maintain these structures.

2431 At West Quay there is a 750m length of sheet steel piled and concrete walls in various states of repair. Private Ownership.

2432 There is a 450m long privately owned small rock revetment on the edge of Holes Bay that protects a number of facilities. The revetment was constructed in the 1980s.

2433 A 50m long concrete wall constructed in the 1990s protects the A350 along the shore of Holes Bay. PBC are responsible for maintaining this structure.

2434 Adjacent to the concrete wall a 2.1km long rock revetment on the east shore of Holes Bay protects the A350 bypass. The level and form of the foreshore varies between saltings and mud/silt. PBC are responsible for maintaining this structure.

2435 A clay embankment was constructed across the middle of Holes Bay in the 1900s. A concrete revetment was added in the 1970s and repairs were carried out in 1993. The structure is owned and maintained by Railtrack and supports the main railway line.

Between defence length 2435 and 2436, there are a variety of quay walls and slipways at Cobbs Quay marina, in fair condition generally. The marina has extensive pontoons but no breakwaters, being in a sheltered part of Holes Bay.

2436 At Hamworthy there are 500m of privately owned defences. These generally include concrete walls but also piling towards Poole Bridge. The northern edge of the former power station site has a bituminous revetment.

2437 Sheet steel piling has been installed at New Quay along various lengths between 1924 and 1988. PHC own and maintain the wall and report that it is currently in a variable condition along its length.

Poole Harbour Commissioners (PHC) operate the port, which comprises a variety of quay walls (both concrete and steel) of varying ages and one short length of rock revetment. These are maintained regularly by PHC.

2438 A 410m long breakwater and rock revetment in Lower Hamworthy protect the yacht club. Both structures were constructed in 1983, PHC maintain these structures.

2439 At Hamworthy a low eroding bank is the only defence to the railway. There is one outfall structure on the beach.

2440 At Hamworthy Park the defences along the 660m length comprise five 30m long timber groynes and a vertical concrete wall. Parts of the wall have been buttressed and repaired since it was first constructed, probably in the 1920s. However at the eastern end of the wall has been undermined and is in need of repair over a 100m length. BOP recognise that the defences are in need of upgrading, unfortunately the benefit cost ratio is insufficient to justify capital works along this defence length. EA may provide some form of flood protection scheme in future.

2441 At Lake a 1.03km length of various masonry and concrete walls defend a number of private properties. This also includes the marines base and a small marina boatyard.

2442 A short length (90m) of gabion wall, constructed in the 1980s, protects the car park at Lake Pier, to the east of Ham Common. BOP are responsible for the maintenance of this defence length. There is an undefended length in front of Ham common to the east, which is eroding.

2443 At Rockley Sands, to the west of Ham Common, a 150m length of gabion wall was constructed in the 1980s to protect the caravan park. The majority of the wall is in need of repair.

081/1140 No data available.

081/2090 A 60m long privately owned concrete wall on the eastern shore of Brownsea Island. The wall is in poor condition and is at risk of failure due to undermining.

081/2100 A 60m long privately owned wall. Sheet piling encloses the original stone pier, and the whole structure has been capped with a slab which is in good condition. Erosion is a serious problem and rock armour has been placed at the toe of steel sheet piles.

081/2110 A 100m long privately owned masonry wall on the eastern shore of Brownsea Island. The wall is in fair condition, the stonework needs attention, and a rock armour toe has been added recently.

081/2120 A 20m long stone wall which is in good condition, responsibility for maintenance lies with the private owners.

081/2130 The shoreline is protected by a 60m length of sandbank and two masonry walls. These defences are in fair condition and are maintained by private owners.

081/2140 Along this 240m length on the coast of Brownsea Island there are a series of concrete and timber groynes. The concrete groynes are in a fair condition and perform well whilst the timber groynes are dilapidated and are of little value.

A wall protects the foot of hill. The wall clearly demonstrates its function in protecting the sandhill of Brownsea Island from erosion. From the end of the wall westwards the coastline is a scene of

devastation caused by erosion – fallen trees and unstable cliffs as far as the eye can see.

5.4.2 Assessment of Defence Standard

Poole is a medium density urban community which warrants a 100 year return period standard of protection in line with the Ministry of Agriculture Fisheries and Food (MAFF) Project Appraisal Guidance Notes (PAGN), Annex K.

The standard of defences were assessed using extreme wave height and water level data as discussed in the coastal processes section of the report. Hind-casting analysis provided the wave climate within Poole Harbour.

Using present day water levels the standard of protection against structural damage varies along the shore of the Harbour. The standard of protection is greater than 1 in 100 years; on the inshore face of Poole Sandbanks, Parkstone, Poole Quay, Holes Bay, Hamworthy, Lower Hamworthy, Hamworthy Park and Lake Pier. In other areas the standard of protection was much lower, between 1 and 20 years; Sandbanks Road, Blue Lagoon, Parkstone Bay, Baiter, Fisherman's Dock and Holes Bay.

A similar analysis for the standard after 50 years, allowing for future sea level rise, the only areas with a 100 year standard of protection against structural damage were Holes Bay, Hamworthy and Lower Hamworthy. In other areas the standard of protection was lower, in general between 1 and 20 years.

Full details of the overtopping and overflow analysis are included in Table 4.7 at the rear of the report.

## 5.5 South Haven Point to Handfast Point – (5F-5)

The coastal defences in Area 5F-5 are a combination of gabions, sand dunes and clay embankments.

5.5.1 Description of Defences

The defences within this coastal process unit are owned and maintained by the National Trust, although the majority of the defences at the southern end of Studland Bay are privately owned.

081/2770 The dunes along this 4.3km length of coast have a typical crest height of +5.0m ODN but do not provide a continuous defence. Gaps between individual dunes occur frequently therefore providing little or defence against flooding. A 160m length of gabions have been placed at the southern end of the dunes.

There is a substantial concrete slipway for the ferry at South Haven Point which acts as groyne.

A major feature and influence is the 19$^{th}$ century, training wall which helps to stabilise the northern half of Studland.

081/2780 Immediately to the south of the dunes a 80m long vertical timber seawall with a crest height of +5.4m ODN protects a few timber buildings and a wooded cliff face.

081/2790 There are a mixture of defences along this 100m length, including armour and gabions on the foreshore with clay banks inshore of these defences.

081/2800 A privately owned 300m length of clay bank on the sand beach foreshore provides a degree of defence, although the 13m high clay and rock cliff face to the rear provides the main coastal defence along this length.

081/2810 A 100m long 1.0m high privately owned gabion wall provides the only defence to a series of beach huts. Inshore of the beach huts there is a steep wooded cliff face up to +13.0m ODN.

081/2820 Clay banks on the foreshore provide the only protection over a 260m length to a further set of beach huts. Inshore of the huts is a steep wooded cliff face.

5.5.2 Assessment of Defence Standard

There are a series of dunes along the majority of Shell and Studland Bays, although these dunes have a typical crest level of +5.0mODN they do not provide defence against flooding of the heath behind since gaps occur frequently in the dunes. At the southern end of Studland Bay the land rises to cliffs with a typical level of +13mODN. The village of Studland is on this higher ground. Therefore the only structures at risk are temporary timber buildings and beach huts inshore of the beach. This area therefore only warrants defence against a 5 year return period storm event, since there are very few properties at risk from coastal erosion or flooding.

In many areas the toe of the cliffs will still be subject to erosion during extreme storm events, however this would not cause any direct flood damage to any permanent structures. At the southern end of the bay the gabion wall is in a poor state of repair and the beach huts in this area have been moved inland to prevent storm damage.

Full details of the overflow analysis are included in Table 4.9 at the rear of the report.

## 5.6 Handfast Point to Peveril Point – (5F-6)

A combination of seawalls and groynes form the coastal defences in Area 5F-6. The foreshore consists of sandy beaches and bedrock.

5.6.1 Description of Defences

2301 Along the 30m inshore face of South Haven Point a rubble revetment and masonry wall protect the privately owned Shell Bay boatyard, cafe and the nearby road to the ferry.

2302 In North Swanage, four timber groynes, typically 30m long, were constructed along this 240m length in 1962 in an effort to maintain the beach in order to prevent further erosion of the cliffs. The timber groynes appear to be in a reasonable state of repair, although some of the highest planking is missing. The seaward end of the groynes are in the poorest condition. A lot of the sheet piled ends of the groynes have rusted through. The cliffs continue to erode, recently at

Sheps Hollow a section of the cliff slipped destroying the landward end of the most northern groyne.

2303 In North Swanage a number of beach huts and shops on the promenade are protected by a 600m long series of small seawalls, built in the 1920s, of differing construction which follow an erratic line along the toe of the cliffs. The cliffs in this area are unstable and material falls annually onto the promenade. Several attempts have been made to protect the cliffs but groundwater levels and drainage pose a particular problem. In the 1960s the seawall was refurbished, a new concrete and sheet piled toe detail were added and some sections of seawall were rebuilt. Generally, the seawall appears to be in a reasonable state of repair.

A further ten timber groynes, typically 30m long, were constructed in 1962 and appear to be in a reasonable state of repair, although some of the highest planking is missing. The seaward end of the groynes are in the poorest condition and many of the sheet piles have rusted through.

2304 In Swanage the 500m length of coast is defended by a seawall and seven timber groynes, typically 30m long. Generally the seawall is in a good state of repair. Shore Road is immediately behind the seawall and although debris has been thrown up on the road during storms over the last four years, there have been no reports of damage or flooding in this area. The groynes were refurbished in 1985 and a section of seawall toe was rebuilt in recent years. The timber groynes appear to be in a reasonable state of repair, except some of the highest planking is missing and the sheet piled ends of the groynes have rusted through. In 1993 the Outfall Jetty was constructed, seaward of Victoria Avenue, as part of the Swanage Flood Alleviation Scheme.

081/1130 The 1.2km stone wall at the rear of the beach and the timber groynes, see defence codes 2404 and 2405, are in fair condition. Maintenance is the responsibility of PDC.

2305 To the south of Swanage, along this 170m defence length, a foul sewage outfall pipe runs along the foreshore in this area and discharges at Peverill Point. The outfall is owned and maintained by Wessex Water and has a concrete surround which although undermined in places has not degraded since 1993 (when the Coast Protection Survey of England was carried out). A private housing development has been built on a masonry wall which extends along the rear of the foreshore along this defence length. It should be noted that the wall is a boundary wall and not a seawall.

2306 Further east in Swanage Bay, a small 200m long concrete wall protects the houses on a grass bank above. There are two slipways along this defence length and the outfall pipe with concrete surround runs along the foreshore.

5.6.2 Assessment of Defence Standard

Swanage Town is a medium density urban community and warrants a 100 year return period standard of protection in line with the Ministry of Agriculture Fisheries and Food (MAFF) Project Appraisal Guidance Notes (PAGN), Annex K.

Using present day water levels, the standard of protection against structural damage along the main section of Swanage Bay is greater that the 100 year event except in the following areas; along the southern half of the seawall between the Mowlem and the Outfall Jetty; the northern half of the seawall between the Ulwell Stream Outfall and the Pines Hotel and north of the Pines Hotel, where the toe of the cliffs are not protected by a seawall.

A similar analysis to assess the standard of defence following 50 years sea level rise revealed that the standard of protection against structural damage was greater than the 5 year event along the main section of Swanage Bay. In addition it was identified that the structures would overflow at the northern and southern ends of the seawall during the 1 in 100 year storm event.

Full details of the overtopping and overflow analysis are included in Table 4.11 at the rear of the report.

## 5.7 Peveril Point to Durlston Head – (5F-7)

5.7.1 Assessment of Defences

2307 In Durlston Bay a cliff stabilisation scheme was carried out in 1989 which involved a 7.0m high 60m long armour rock revetment at the cliff toe, facing the 50m high cliffs with rockfill and cliff drainage measures. Cliff erosion was threatening the stability of a block of flats at the top of the cliffs. Erosion was caused by three factors, weathering, groundwater flow and wave action at the toe. The cliff has now been stabilised.

5.7.2 Assessment of Defence Standard

The cliff stabilisation scheme, constructed in 1989, will continue to protect this section of the cliffs from erosion. However, the majority of the cliffs along this coastal process unit will be allowed to erode in order to expose the unique geological formations. This length of coast is likely to be designated as a World Heritage Site in the near future, which will protect the geological exposures for future generations.

Full details of the overflow analysis are included in Table 4.13 at the rear of the report.

## 5.8 Assessment of Condition of Foreshore on Defence Structure

Using a combination of three sources of information an attempt has been made to identify those structures which may experience some kind of toe failure as a result of an eroding foreshore.

For each defence length the CPSE (and SDS) data assesses the type of structure and the degree to which the integrity of the structure is dependant upon a high foreshore level. It also makes subjective assessments of the foreshore level as compared with the toe of the structure which it fronts, as well as a judgement of how the foreshore immediately in front of the defence element is changing with

time. When those structures which have a high dependency coincide with a low and/or eroding foreshore, it has been assumed that the structure may experience some kind of toe failure in the future unless some kind of preventative action takes place.

In conjunction with such anecdotal reporting. Halcrow's monitoring software SANDS has been used to establish trends in beach levels.

Detailed analysis was not possible because of the obvious deficiencies in the time series data that is available. A review of SANDS output, some of which is reproduced in Appendix B, highlights obvious often substantial anomalies, such as the elevation and position of permanent features, particularly defence structures, being shown to vary with time. Levels are also frequently inconsistent with those presented under CPSE. Any such observations are commented upon in Tables 4.1 to 4.4. It has had to be assumed for the appraisal that inferred vertical and horizontal control differences at such crests are typical for each profile as a whole. The observations that result from this approach tend to coincide with evidence from the CPSE data assessments though clearly for any detailed appraisal the original data, and any adjustments that might be considered thereto, must be considered with extreme caution.

The locations where the susceptibility of a structure to undermining was appraised were determined by:

(a) where CPSE (and SDS) identified structures as having a high dependency on beach level for its stability; and/or

(b) where a typical length of defence had been analysed for overtopping.

The results of the appraisals are given in Tables 4.1 to 4.4 where an undermining risk has been identified or requires future consideration. This is commented upon in the sub-sections below.

5.8.1 Hurst Spit to Hengistbury Head Long Groyne – (5F-1)

Hurst Castle at the end of Hurst Spit has been identified as at risk. Milford-on-sea and Barton-on-sea seawalls and revetments rely on sufficient beach levels and sediment supply to avoid undermining whilst at Highcliffe, nourishment will need to continue to avoid undermining the timber revetment.

5.8.2 Christchurch Harbour – (5F-2)

The foundation levels of some private walls may cause some risk whilst the low level of the gabions on the inside of Hengistbury Head is also unknown.

5.8.3 Hengistbury Head Long Groyne to Sandbanks Fery Slipway – (5F-3)

The Poole and Bournemouth promenades/seawalls rely on beach levels being maintained by large scale nourishment by BBC.

5.8.4 Poole Harbour – (5F-4)

The toe level of some private seawalls is unknown and therefore a risk. Undermining near Sandbanks Ferry is a known existing problem which BOP are considering a scheme for.

5.8.5 South Haven Point to Handfast Point – (5F-5)

The crude National Trust defences in this area are at risk of undermining due to coastal recession.

5.8.6 Handfast Point to Peveril Point – (5F-6)

The promenade/seawall in front of New Swanage cliffs regularly has its toe piles exposed and therefore undermining is a risk.

5.8.7 Peveril Point to Durlston Head – (5F-7)

No undermining problem is known in this short length.

## GLOSSARY OF TERMS

The following terms have been used to describe:

### Asset Type

seawall - a shoreline structure whose primary purpose is either to protect against erosion, or alleviate flooding, or a combination of both, and in which wave action is the dominant design consideration. Quay walls and other vertical walls which have limited exposure to wave action have also been included within this category.

quaywall - structure with toe below low water, to provide berthing/unloading facilities for vessels.

embankment - an artificial bank for the most part used in conjunction with areas of reclamation.

revetment - indicates that the defence consists of or incorporates a facing treatment involving armour, aprons, pitching or other forms of revetment treatment.

groynes - groynes or breastwork.

gabions - indicates that rock filled mesh baskets (gabions or mattresses) have been used to form the defence or prevent scour.

shore - a natural eroding length of coast with features.

other - any other asset type not otherwise described above, including breakwaters.

### Structure

The type of component part of a structure is selected from:

armour - random rock or concrete units placed in front of walls or other man made or natural feature. Type of armour to be recorded in the database supplementary report.

apron - a layer of rubble stone or concrete slab with or without toe piles to protect the toe of the sea wall against scour.

bastion - a projecting section of sea wall.

bank - a naturally occurring feature.

breakwater - a rock or concrete armour faced structure which may be aligned normal or parallel to the coastline. This structure type rather than groyne was to be used when structure extended significantly seaward to low water. Type of structure and materials of construction to be confirmed in the database supplementary report.

breastwork - vertical or raking timber or steel piled structures supporting horizontal planking and often with rock infill.

| | |
|---|---|
| cliff/scarp - | a natural eroding length of coast. For the purposes of the survey, only lengths of coast which were identified as being significantly eroding were to be recorded as part of the database. |
| beach ridge - | as for cliff/scarp. Used to describe shingle ridges. |
| marsh fringe - | as for cliff/scarp. Used to describe the eroding seaward limit of marshes. |
| embankment - | an artificial bank which was likely to incorporate separate revetment protection on its seaward face. |
| gabions - | mesh baskets with rock filling. Type of mesh material etc to be recorded within the database supplementary report. |
| groynes - | structures in rock and timber generally perpendicular to the shoreline used to control beach material movement. Description relates to series of groynes which together form the groyne field. Mapping reflects this as a continuous linear feature rather than a series of unconnected features perpendicular to the coast. |
| piling - | steel, concrete or timber sheet piles (and steel H piles with concrete planks) which form a vertical exposed face. Not used when describing sheet piling to toe of wall or revetment. |
| toe piling - | as for piling above but relating to sheet piles where used to support the toe of the defence and protect against undermining. |
| pitching - | a specific form of revetment treatment to the sloping seaward face of a defence or at its toe in which the material described (stone or block) was set in pitch. |
| recharge - | protection is effected by importation of shingle or sand. Description relates to the lengths of beach which are actively managed using nourishment as recycling of beach material. |
| revetment - | a cladding of stone, concrete or other material to stabilise and protect shorelines, embankments or shore structures against erosion by wave action or currents. Type of block or concrete unit used to be described in the database supplementary report. |
| wall - | vertical or battered free standing structure (but not sheet piling) in mass concrete, reinforced concrete, masonry or brickwork. |
| recurved wall - | as for wall but structure incorporates a substantial recurve feature. A recurve feature is where the top portion of the wall overhangs the main body of the wall, in order to deflect wave energy seaward. |
| splash wall - | an upstand wall generally set back from the main crest which is used to intercept overtopping water. |

**Material**

This is the material which best describes the materials of construction of each Defence Element. Where more than one material is present, the major constituent material was used in the database, with the other materials being covered in the supplementary report. Selection was made from the following.

bag - a flexible container made of textiles, plastic or cloth containing sand, rubble or cemented materials as described in the database supplementary report.

block - special regular block units in pre-cast concrete. Examples of such flexible units include "Essex blocks". The upper surface may have been recessed or indented to help dissipate wave energy.

boulder - a worn well rounded rock (diameter generally exceeding 250mm).

clay - natural, fine grained materials, (usually finer than 3mm). Commonly used in the past to describe materials from which embankments have been constructed.

cobble - a rounded stone (diameter generally 60-250mm).

concrete - used to describe in-situ and large precast structures and smaller scale in-situ revetment treatments.

masonry - a structure using stone or brick materials. Also seawall structures constructed from massive pre-cast concrete blockwork.

mastic - a mixture of finely powered rock and asphaltic material.

rock - uniform lithological composition – more massive than stone.

rubble - rough waste stone, brick or concrete used as wave energy dissipater.

sand - natural beach deposits (0.5 – 4mm in size).

shingle - natural beach deposits usually between 0.7mm and 75mm.

steel - where the main component is made of steel (such as sheet piling).

stone - small fragments or rock. (<600mm in all directions).

timber - where the main component is wood.

## REFERENCES

Ministry of Agriculture, Fisheries and Food, (1994). 'Coast Protection Survey of England. Survey Report – Volumes 5.1 to 5.5, Tunbridge Wells Area', Halcrow.

Ministry of Agriculture, Fisheries and Food, (1994), 'Coast Protection Survey of England. Survey Report – Volumes 6.1 to 6.5, Taunton Area', Halcrow.

National Rivers Authority, (1990), 'Sea Defence Survey'.

Hydraulics Research, (1980), 'Design of Seawalls Allowing for Wave Overtopping', Report EX924.

Hydraulics Research, (1993), 'Wave Overtopping of Vertical Walls', Report SR316.

Ministry of Agriculture Fisheries and Food, (1993), 'Project Appraisal Guidance Notes'.

CUR/CIRIA, (1991), 'Manual on the Use of Rock in Coastal and Shoreline Engineering'.

# TABLES

| STANDARD OF DEFENCE TABLE - PRESENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 1 | 571/2757 | > 100 | N/A | > 1 | > 100 | > 100 | 100 | Hurst Castle | |
| | 071/1055 | > 100 | - | - | - | - | 100 | - | |
| | 571/2758 | > 100 | N/A | > 1 | > 100 | > 100 | 100 | Hurst Spit | |
| | 571/2759 | > 100 | N/A | > 1 | > 100 | > 100 | 50 | Hurst Point | |
| | 071/1054 | > 100 | - | - | - | - | 50 | - | |
| | 571/2760 | > 100 | - | - | - | - | 100 | Milford Beach | |
| | 071/1053 | > 100 | - | - | - | - | 100 | - | |
| | 571/2761 | > 100 | - | - | - | - | 100 | Milford Beach | |
| | 071/1052 | > 100 | - | - | - | - | 100 | - | |
| | 571/2762 | > 100 | - | - | - | - | 100 | Milford White House | |
| | 071/1051 | > 100 | - | - | - | - | 100 | - | |
| | 571/2763 | > 100 | - | - | - | - | 100 | Milford White House | |
| | 571/2764 | > 100 | N/A | > 100 | > 100 | > 100 | 100 | Milford White House | |
| | 571/2765 | > 100 | N/A | > 100 | > 100 | > 100 | 100 | Milford Rook Cliff | |
| | 571/2766 | > 100 | - | - | - | - | 50 | Hordle Cliff | |
| | 571/2767 | > 100 | - | - | - | - | 50 | Beckton | |
| | 571/2768 | > 100 | - | - | - | - | 100 | Barton On Sea | |
| | 571/2769 | > 100 | - | - | - | - | 100 | Naish | |
| | 681/2601 | > 100 | N/A | > 100 | > 100 | > 100 | 100 | Chewton Bunny | |
| | 681/2602 | > 100 | N/A | > 5 | > 100 | > 100 | 100 | Highcliffe | |
| | 681/2603 | > 100 | N/A | > 50 | > 100 | > 100 | 50 | Steamer Point | |
| | 681/2604 | > 100 | N/A | > 10 | > 100 | > 100 | 100 | Steamer Point | |
| | 681/2605 | > 100 | N/A | > 5 | > 100 | > 100 | 100 | Friars Cliff | |
| | 681/2606 | > 100 | > 100 | N/A | > 100 | > 100 | 100 | Avon Beach | |
| | 681/2607 | > 100 | > 10 | N/A | > 100 | > 100 | 100 | Avon Beach | |
| | 681/2608 | > 100 | - | - | - | - | 100 | Gundimore | |
| | 681/2609 | <1 | <1 | N/A | <1 | <1 | 100 | Mudeford Quay | |
| | 681/2610 | > 100 | N/A | <1 | >2 | >2 | 20 | Christchurch Harbour | |
| | 681/2611 | > 100 | N/A | <1 | <1 | <1 | 100 | Mudeford Sandbank | |
| | 681/2503 | > 100 | N/A | <1 | > 1 | > 1 | 100 | Mudeford Sandbank | |
| | 681/2504 | > 100 | N/A | <1 | > 50 | > 50 | 100 | Mudeford Sandbank | |
| | 681/2505 | > 5 | N/A | <1 | > 1 | > 1 | 100 | Mudeford Sandbank | |
| | 681/2506 | > 10 | N/A | <1 | > 5 | > 5 | 50 | Hengistbury Head | |

Table 4.1a Standard of Defence Table for Process Unit 5F-1

| STANDARD OF DEFENCE TABLE - FUTURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 1 | 571/2757 | > 100 | N/A | < 1 | > 100 | > 20 | 100 | Hurst Castle | |
| | 071/1055 | > 100 | - | - | - | - | 100 | - | |
| | 571/2758 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Hurst Spit | |
| | 571/2759 | > 100 | N/A | < 1 | > 100 | > 100 | 50 | Hurst Point | |
| | 071/1054 | > 100 | - | - | - | - | 50 | - | |
| | 571/2760 | > 100 | - | - | - | - | 100 | Milford Beach | |
| | 071/1053 | > 100 | - | - | - | - | 100 | | |
| | 571/2761 | > 100 | - | - | - | - | 100 | Milford Beach | |
| | 071/1052 | > 100 | - | - | - | - | 100 | - | |
| | 571/2762 | > 100 | - | - | - | - | 100 | Milford White House | |
| | 071/1051 | > 100 | - | - | - | - | 100 | - | |
| | 571/2763 | > 100 | - | - | - | - | 100 | Milford White House | |
| | 571/2764 | > 100 | N/A | > 100 | > 100 | > 100 | 100 | Milford White House | |
| | 571/2765 | > 100 | N/A | > 100 | > 100 | > 100 | 100 | Milford Rook Cliff | |
| | 571/2766 | > 100 | - | - | - | - | 50 | Hordle Cliff | |
| | 571/2767 | > 100 | - | - | - | - | 50 | Beckton | |
| | 571/2768 | > 100 | - | - | - | - | 100 | Barton On Sea | |
| | 571/2769 | > 100 | - | - | - | - | 100 | Naish | |
| | 681/2601 | > 100 | N/A | > 100 | > 100 | > 100 | 100 | Chewton Bunny | |
| | 681/2602 | > 100 | N/A | > 1 | > 10 | > 100 | 100 | Highcliffe | |
| | 681/2603 | > 100 | N/A | > 5 | > 100 | > 100 | 50 | Steamer Point | |
| | 681/2604 | > 100 | N/A | > 1 | > 100 | > 100 | 100 | Steamer Point | |
| | 681/2605 | > 100 | N/A | > 1 | > 100 | > 100 | 100 | Friars Cliff | |
| | 681/2606 | > 100 | > 10 | N/A | > 100 | > 100 | 100 | Avon Beach | |
| | 681/2607 | > 100 | > 5 | N/A | > 100 | > 100 | 100 | Avon Beach | |
| | 681/2608 | > 100 | - | - | - | - | 100 | Gundimore | |
| | 681/2609 | <1 | <1 | N/A | <1 | < 1 | 100 | Mudeford Quay | |
| | 681/2610 | > 100 | N/A | <1 | <1 | < 1 | 20 | Christchurch Harbour | |
| | 681/2611 | > 10 | N/A | <1 | <1 | < 1 | 100 | Mudeford Sandbank | |
| | 681/2503 | > 10 | N/A | <1 | <1 | < 1 | 100 | Mudeford Sandbank | |
| | 681/2504 | > 10 | N/A | <1 | > 10 | > 10 | 100 | Mudeford Sandbank | |
| | 681/2505 | < 1 | N/A | <1 | <1 | < 1 | 100 | Mudeford Sandbank | |
| | 681/2506 | > 2 | N/A | <1 | > 1 | > 1 | 50 | Hengistbury Head | |

Table 4.1b Standard of Defence Table for Process Unit 5F-1

| UNDERMINING ASSESSMENT TABLE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Sub Code | CPSE/SDSU Foreshore Assessment | | | NRA Photogrammetry Analysis | | | Comments |
| | | | Dependency | Level | Condition | Typical Profile Ref. | Lower Foreshore Condition | Upper Foreshore Condition | |
| 5F - 1 | 571/2757 | 1 | High | Variable | Volatile | | | | |
| | 571/2757 | 2 | High | Variable | Volatile | | | | |
| | 571/2757 | 3 | High | Variable | Volatile | | | | |
| | 571/2757 | 4 | High | Variable | Volatile | | | | |
| | 571/2757 | 5 | High | Variable | Volatile | | | | |
| | 571/2757 | 6 | High | Variable | Volatile | | | | |
| | 571/2757 | 7 | High | Variable | Volatile | | | | |
| | 071/1055 | 1 | High | Low | Eroding | | | | |
| | 571/2758 | 1 | High | Variable | Volatile | | | | |
| | 571/2758 | 2 | High | Variable | Volatile | | | | |
| | 571/2759 | 1 | Medium | Low | Stable | | | | |
| | 571/2759 | 2 | Medium | High | Stable | | | | |
| | 071/1054 | 1 | High | Low | Eroding | | | | |
| | 071/1054 | 2 | High | Low | Eroding | | | | |
| | 571/2760 | 1 | Medium | Low | Volatile | | | | |
| | 571/2760 | 2 | High | Low | Volatile | | | | |
| | 571/2760 | 3 | Medium | Low | Volatile | | | | |
| | 071/1053 | 1 | High | Low | Eroding | | | | |
| | 071/1053 | 2 | High | Low | Eroding | | | | |
| | 071/1053 | 3 | High | Low | Eroding | | | | |
| | 071/1053 | 4 | High | Low | Eroding | | | | |
| | 071/1053 | 5 | - | - | - | | | | |
| | 071/1053 | 6 | - | - | - | | | | |
| | 571/2761 | 1 | Medium | Low | Eroding | | | | |
| | 571/2761 | 2 | Medium | Low | Eroding | | | | |
| | 571/2761 | 3 | High | Low | Eroding | | | | |
| | 071/1052 | 1 | High | High | Eroding | | | | |
| | 071/1052 | 2 | High | High | Eroding | | | | |
| | 071/1052 | 3 | High | High | Eroding | | | | |
| | 071/1052 | 4 | - | - | - | | | | |
| | 071/1052 | 5 | High | High | - | | | | |
| | 571/2762 | 1 | Medium | Low | Eroding | | | | |
| | 571/2762 | 2 | High | Low | Eroding | | | | |
| | 571/2762 | 3 | High | Low | Eroding | | | | |
| | 071/1051 | 1 | High | Low | Eroding | | | | |
| | 071/1051 | 2 | High | Low | Eroding | | | | |
| | 071/1051 | 3 | - | - | - | | | | |
| | 071/1051 | 4 | High | High | - | | | | |
| | 571/2763 | 1 | High | Variable | Stable | | | | |
| | 571/2763 | 2 | High | Variable | Stable | | | | |
| | 571/2763 | 3 | High | Variable | Volatile | | | | |
| | 571/2764 | 1 | High | Low | Volatile | | | | |
| | 571/2764 | 2 | High | Low | Volatile | | | | |
| | 571/2765 | 1 | Low | Variable | Volatile | | | | |
| | 571/2765 | 2 | Low | Variable | Volatile | | | | |
| | 571/2765 | 3 | Low | Variable | Volatile | | | | |
| | 571/2765 | 4 | High | Variable | Volatile | | | | |
| | 571/2765 | 5 | Medium | Variable | Volatile | | | | |
| | 571/2765 | 6 | Medium | Variable | Volatile | | | | |
| | 571/2765 | 7 | Medium | Variable | Volatile | | | | |
| | 571/2766 | 1 | High | Variable | Volatile | | | | |
| | 571/2767 | 1 | High | Variable | Volatile | | | | |
| | 571/2767 | 2 | High | Variable | Volatile | | | | |
| | 571/2768 | 1 | High | Variable | Volatile | | | | |
| | 571/2768 | 2 | High | Variable | Volatile | | | | |
| | 571/2768 | 3 | High | Variable | Volatile | | | | |
| | 571/2769 | 1 | High | Variable | Volatile | | | | |
| | 681/2601 | 1 | Medium | Variable | Stable | | | | |
| | 681/2601 | 2 | Medium | High | Stable | | | | |
| | 681/2602 | 1 | High | Variable | Stable | | | | |
| | 681/2602 | 2 | High | Variable | Stable | | | | |
| | 681/2602 | 3 | Medium | Variable | Stable | | | | |
| | 681/2602 | 4 | Medium | Variable | Stable | | | | |
| | 681/2602 | 5 | Medium | Variable | Stable | | | | |
| | 681/2603 | 1 | Medium | Variable | Volatile | | | | |
| | 681/2603 | 2 | High | Variable | Volatile | | | | |
| | 681/2604 | 1 | High | Variable | Volatile | | | | |
| | 681/2604 | 2 | High | Variable | Volatile | | | | |
| | 681/2604 | 3 | High | Variable | Volatile | | | | |
| | 681/2605 | 1 | High | High | Stable | | | | |
| | 681/2605 | 2 | Medium | High | Stable | | | | |
| | 681/2605 | 3 | High | High | Stable | | | | |
| | 681/2605 | 4 | High | High | Stable | | | | |
| | 681/2606 | 1 | High | High | Stable | | | | |
| | 681/2606 | 2 | Medium | High | Stable | | | | |
| | 681/2606 | 3 | Medium | High | Stable | | | | |
| | 681/2606 | 4 | Medium | High | Stable | | | | |
| | 681/2607 | 1 | High | High | Stable | | | | |
| | 681/2607 | 2 | Medium | High | Stable | | | | |
| | 681/2607 | 3 | Low | High | Stable | | | | |
| | 681/2608 | 1 | High | High | Stable | | | | |
| | 681/2608 | 2 | High | High | Stable | | | | |
| | 681/2608 | 3 | Medium | High | Stable | | | | |
| | 681/2608 | 4 | Low | High | Stable | | | | |
| | 681/2608 | 5 | Low | High | Stable | | | | |
| | 681/2609 | 1 | High | Low | Stable | | | | |
| | 681/2609 | 2 | High | Low | Stable | | | | |
| | 681/2609 | 3 | High | Low | Stable | | | | |
| | 681/2609 | 4 | High | Low | Stable | | | | |
| | 681/2609 | 5 | High | Low | Stable | | | | |
| | 681/2609 | 6 | Medium | Low | Stable | | | | |
| | 681/2609 | 7 | Medium | Low | Stable | | | | |
| | 681/2610 | 1 | Medium | Variable | Eroding | | | | |
| | 681/2611 | 1 | Medium | Variable | Volatile | | | | |
| | 681/2611 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2503 | 1 | Medium | Variable | Volatile | | | | |
| | 681/2503 | 2 | Low | Variable | Volatile | | | | |
| | 681/2504 | 1 | High | High | Accreting | | | | |
| | 681/2504 | 2 | High | High | Accreting | | | | |
| | 681/2504 | 3 | High | High | Accreting | | | | |
| | 681/2504 | 4 | Medium | High | Accreting | | | | |
| | 681/2504 | 5 | Low | High | Stable | | | | |
| | 681/2505 | 1 | High | Variable | Volatile | | | | |
| | 681/2505 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2505 | 3 | Low | Variable | Volatile | | | | |
| | 681/2506 | 1 | Low | High | Stable | | | | |
| | 681/2506 | 2 | Low | High | Stable | | | | |
| | 681/2506 | 3 | Medium | High | Stable | | | | |
| | 681/2506 | 4 | Medium | High | Stable | | | | |
| | 681/2506 | 5 | Low | High | Stable | | | | |
| | 681/2506 | 6 | High | High | Stable | | | | |

Table 4.2 Undermining Assessment Table for Process Unit 5F-1

| STANDARD OF DEFENCE TABLE - PRESENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 2 | 081/2080 | - | - | - | - | - | 100 | - | |
| | 081/2070 | - | - | - | - | - | 100 | - | |
| | 081/2060 | - | - | - | - | - | 100 | - | |
| | 081/2050 | - | - | - | - | - | 100 | - | |
| | 081/2040 | - | - | - | - | - | 100 | - | |
| | 081/2030 | - | - | - | - | - | 100 | - | |
| | 081/2020 | - | - | - | - | - | 100 | - | |
| | 081/2010 | - | - | - | - | - | 100 | - | |
| | 681/2501 | > 5 | <1 | N/A | > 1 | > 1 | 100 | Christchurch Harbour | |
| | 681/2502 | > 10 | <1 | N/A | >20 | > 10 | 100 | Christchurch Harbour | |

| STANDARD OF DEFENCE TABLE - FUTURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 2 | 081/2080 | - | - | - | - | - | 100 | - | |
| | 081/2070 | - | - | - | - | - | 100 | - | |
| | 081/2060 | - | - | - | - | - | 100 | - | |
| | 081/2050 | - | - | - | - | - | 100 | - | |
| | 081/2040 | - | - | - | - | - | 100 | - | |
| | 081/2030 | - | - | - | - | - | 100 | - | |
| | 081/2020 | - | - | - | - | - | 100 | - | |
| | 081/2010 | - | - | - | - | - | 100 | - | |
| | 681/2501 | < 1 | <1 | N/A | <1 | < 1 | 100 | Christchurch Harbour | |
| | 681/2502 | > 2 | <1 | N/A | > 5 | > 2 | 100 | Christchurch Harbour | |

Table 4.3 Standard of Defence Table for Process Unit 5F-2

| UNDERMINING ASSESSMENT TABLE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Sub Code | CPSE/SDSU Foreshore Assessment | | | NRA Photogrammetry Analysis | | | Comments |
| | | | Dependency | Level | Condition | Typical Profile Ref | Lower Foreshore Condition | Upper Foreshore Condition | |
| 5F - 2 | 081/2080 | 329 | High | Low | Eroding | | | | |
| | 081/2070 | 328 | Medium | Low | Eroding | | | | |
| | 081/2060 | 327 | High | Low | Eroding | | | | |
| | 081/2060 | 326 | High | Low | Eroding | | | | |
| | 081/2050 | 325 | High | High | Accreting | | | | |
| | 081/2040 | 324 | High | High | Stable | | | | |
| | 081/2030 | 323 | High | High | Eroding | | | | |
| | 081/2020 | 322 | High | Low | Eroding | | | | |
| | 081/2010 | 321 | High | Low | Stable | | | | |
| | 081/2010 | 320 | High | Low | Stable | | | | |
| | 681/2501 | 1 | High | Low | Stable | | | | |
| | 681/2502 | 1 | Medium | Variable | Volatile | | | | |
| | 681/2502 | 2 | High | Variable | Eroding | | | | |

Table 4.4 Undermining Assessment Table for Process Unit 5F-2

| STANDARD OF DEFENCE TABLE - PRESENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 3 | 681/2507 | > 50 | - | - | - | - | 100 | Long Groyne H.Head | |
| | 681/2508 | > 100 | - | - | - | - | 50 | Hengistbury Head | |
| | 681/2509 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Double Dykes | |
| | 681/2510 | > 100 | N/A | > 100 | > 100 | > 100 | 50 | Solent Beach | |
| | 681/2511 | > 100 | > 1 | N/A | > 100 | > 100 | 100 | Southbourne | |
| | 681/2512 | > 100 | < 1 | N/A | > 100 | > 100 | 100 | Boscome to Bournemouth | |
| | 681/2513 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Bournemouth West | |
| | 681/2401 | > 100 | - | - | - | - | 100 | Branksome | |
| | 681/2402 | > 100 | N/A | > 10 | > 100 | > 100 | 100 | Canford Cliffs | |
| | 681/2403 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Canford Cliffs | |
| | 681/2404 | > 100 | - | - | - | - | 100 | Canford Cliffs | |
| | 681/2405 | > 100 | - | - | - | - | 100 | Canford Cliffs | |
| | 681/2406 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2407 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Poole Sandbanks | |
| | 681/2408 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2409 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2410 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Poole Sandbanks | |
| | 681/2411 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2412 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2413 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2414 | > 100 | < 1 | N/A | > 100 | > 100 | 100 | Poole Sandbanks | |

| STANDARD OF DEFENCE TABLE - FUTURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 3 | 681/2507 | < 1 | - | - | - | - | 100 | Long Groyne H.Head | |
| | 681/2508 | > 100 | - | - | - | - | 50 | Hengistbury Head | |
| | 681/2509 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Double Dykes | |
| | 681/2510 | > 100 | N/A | > 100 | > 100 | > 100 | 50 | Solent Beach | |
| | 681/2511 | > 100 | < 1 | N/A | > 100 | > 100 | 100 | Southbourne | |
| | 681/2512 | > 100 | < 1 | N/A | > 100 | > 100 | 100 | Boscome to Bournemouth | |
| | 681/2513 | > 100 | N/A | < 1 | > 50 | > 50 | 100 | Bournemouth West | |
| | 681/2401 | > 100 | - | - | - | - | 100 | Branksome | |
| | 681/2402 | > 100 | N/A | < 10 | > 100 | > 100 | 100 | Canford Cliffs | |
| | 681/2403 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Canford Cliffs | |
| | 681/2404 | > 100 | - | - | - | - | 100 | Canford Cliffs | |
| | 681/2405 | > 100 | - | - | - | - | 100 | Canford Cliffs | |
| | 681/2406 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2407 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Poole Sandbanks | |
| | 681/2408 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2409 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2410 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Poole Sandbanks | |
| | 681/2411 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2412 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2413 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 681/2414 | > 100 | < 1 | N/A | > 100 | > 100 | 100 | Poole Sandbanks | |

**Table 4.5 Standard of Defence Table for Process Unit 5F-3**

| UNDERMINING ASSESSMENT TABLE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Sub Code | CPSE Foreshore Assessment | | | NRA Photogrammetry Analysis | | | Comments |
| | | | Dependency | Level | Condition | Typical Profile Ref | Lower Foreshore Condition | Upper Foreshore Condition | |
| 5F - 3 | 681/2507 | 1 | Medium | Variable | Volatile | | | | |
| | 681/2507 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2508 | 1 | High | Variable | Eroding | | | | |
| | 681/2508 | 2 | High | Variable | Eroding | | | | |
| | 681/2509 | 1 | Low | Variable | Volatile | | | | |
| | 681/2509 | 2 | High | Variable | Volatile | | | | |
| | 681/2509 | 3 | Medium | Variable | Volatile | | | | |
| | 681/2510 | 1 | Medium | Variable | Volatile | | | | |
| | 681/2510 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2510 | 3 | Medium | Variable | Volatile | | | | |
| | 681/2510 | 4 | High | Variable | Volatile | | | | |
| | 681/2511 | 1 | High | Variable | Volatile | | | | |
| | 681/2511 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2511 | 3 | Medium | Variable | Volatile | | | | |
| | 681/2511 | 4 | High | Variable | Volatile | | | | |
| | 681/2511 | 5 | High | Variable | Volatile | | | | |
| | 681/2511 | 6 | High | Variable | Volatile | | | | |
| | 681/2511 | 7 | Medium | Variable | Volatile | | | | |
| | 681/2511 | 8 | Medium | Variable | Volatile | | | | |
| | 681/2511 | 9 | Medium | Variable | Volatile | | | | |
| | 681/2511 | 10 | Medium | Variable | Volatile | | | | |
| | 681/2511 | 11 | Medium | Variable | Volatile | | | | |
| | 681/2512 | 1 | High | Variable | Volatile | | | | |
| | 681/2512 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2512 | 3 | Medium | Variable | Volatile | | | | |
| | 681/2512 | 4 | Medium | Variable | Volatile | | | | |
| | 681/2512 | 5 | Medium | Variable | Volatile | | | | |
| | 681/2512 | 6 | Medium | Variable | Volatile | | | | |
| | 681/2512 | 7 | Medium | Variable | Volatile | | | | |
| | 681/2512 | 8 | Medium | Variable | Volatile | | | | |
| | 681/2512 | 9 | Medium | Variable | Volatile | | | | |
| | 681/2513 | 1 | High | Variable | Volatile | | | | |
| | 681/2513 | 2 | High | Variable | Volatile | | | | |
| | 681/2513 | 3 | High | Variable | Volatile | | | | |
| | 681/2513 | 4 | High | Variable | Volatile | | | | |
| | 681/2513 | 5 | Medium | Variable | Volatile | | | | |
| | 681/2513 | 6 | Medium | Variable | Volatile | | | | |
| | 681/2513 | 7 | Medium | Variable | Volatile | | | | |
| | 681/2513 | 8 | Medium | Variable | Volatile | | | | |
| | 681/2513 | 9 | Medium | Variable | Volatile | | | | |
| | 681/2401 | 1 | High | Low | Eroding | | | | |
| | 681/2401 | 2 | High | Low | Eroding | | | | |
| | 681/2401 | 3 | High | Variable | Volatile | | | | |
| | 681/2401 | 4 | Medium | Low | Eroding | | | | |
| | 681/2402 | 1 | High | Variable | Volatile | | | | |
| | 681/2402 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2403 | 1 | Medium | Variable | Eroding | | | | |
| | 681/2403 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2404 | 1 | High | Variable | Eroding | | | | |
| | 681/2404 | 2 | High | Variable | Volatile | | | | |
| | 681/2404 | 3 | High | Variable | Volatile | | | | |
| | 681/2405 | 1 | High | High | Stable | | | | |
| | 681/2405 | 2 | Medium | High | Stable | | | | |
| | 681/2406 | 1 | High | Variable | Volatile | | | | |
| | 681/2407 | 1 | High | Variable | Eroding | | | | |
| | 681/2407 | 2 | High | Variable | Eroding | | | | |
| | 681/2407 | 3 | High | Variable | Eroding | | | | |
| | 681/2408 | 1 | High | High | Stable | | | | |
| | 681/2408 | 2 | High | High | Stable | | | | |
| | 681/2408 | 3 | High | High | Stable | | | | |
| | 681/2409 | 2 | High | High | Stable | | | | |
| | 681/2409 | 3 | High | High | Stable | | | | |
| | 681/2410 | 1 | High | High | Stable | | | | |
| | 681/2410 | 3 | High | High | Stable | | | | |
| | 681/2410 | 4 | High | High | Stable | | | | |
| | 681/2411 | 1 | Medium | Variable | Stable | | | | |
| | 681/2411 | 3 | High | Variable | Stable | | | | |
| | 681/2411 | 4 | High | Variable | Stable | | | | |
| | 681/2412 | 1 | High | High | Stable | | | | |
| | 681/2412 | 2 | High | Low | Eroding | | | | |
| | 681/2412 | 3 | High | Low | Eroding | | | | |
| | 681/2412 | 4 | High | Low | Eroding | | | | |
| | 681/2412 | 5 | High | Low | Eroding | | | | |
| | 681/2412 | 6 | Low | Variable | Stable | | | | |
| | 681/2412 | 7 | Medium | Variable | Volatile | | | | |
| | 681/2412 | 8 | High | Low | Eroding | | | | |
| | 681/2412 | 9 | High | Variable | Stable | | | | |
| | 681/2412 | 10 | High | High | Stable | | | | |
| | 681/2413 | 1 | Low | Variable | Stable | | | | |
| | 681/2413 | 2 | Medium | Variable | Stable | | | | |
| | 681/2413 | 3 | High | Variable | Stable | | | | |
| | 681/2413 | 4 | High | Variable | Stable | | | | |
| | 681/2414 | 1 | Medium | Low | Eroding | | | | |
| | 681/2414 | 2 | High | Low | Eroding | | | | |

Table 4.6 Undermining Assessment Table for Process Unit 5F-3

| STANDARD OF DEFENCE TABLE - PRESENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 4 | 681/2415 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 081/2150 | > 100 | - | - | - | - | 100 | - | |
| | 081/1120 | - | - | - | - | - | 100 | - | |
| | 681/2416 | > 5 | N/A | < 1 | > 5 | > 5 | 100 | Sandbanks Road | |
| | 681/2417 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Shore Road | |
| | 081/2180 | > 100 | - | - | - | - | 100 | - | |
| | 081/2170 | > 100 | - | - | - | - | 100 | - | |
| | 081/2160 | > 100 | - | - | - | - | 100 | - | |
| | 681/2418 | > 2 | - | - | - | - | 100 | Evening Hill | |
| | 081/1080 | > 2 | - | - | - | - | 100 | - | |
| | 681/2419 | > 100 | - | - | - | - | 100 | Lilliput | |
| | 081/2210 | > 100 | - | - | - | - | 100 | - | |
| | 081/2200 | > 100 | - | - | - | - | 100 | - | |
| | 081/2331 | - | - | - | - | - | 100 | - | |
| | 081/2270 | > 100 | - | - | - | - | 100 | - | |
| | 081/2280 | - | - | - | - | - | 100 | - | |
| | 681/2420 | > 100 | - | - | - | - | 100 | Lilliput | |
| | 681/2444 | > 100 | - | - | - | - | 100 | Lilliput | |
| | 081/2300 | - | - | - | - | - | 100 | - | |
| | 081/2260 | - | - | - | - | - | 100 | - | |
| | 081/2250 | - | - | - | - | - | 100 | - | |
| | 081/2240 | - | - | - | - | - | 100 | - | |
| | 681/2421 | > 2 | N/A | < 1 | > 2 | > 2 | 100 | Blue Lagoon | |
| | 081/2230 | - | - | - | - | - | 100 | - | |
| | 081/2220 | - | - | - | - | - | 100 | - | |
| | 081/2330 | - | - | - | - | - | 100 | - | |
| | 081/2320 | - | - | - | - | - | 100 | - | |
| | 681/2422 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Parkstone | |
| | 681/2423 | > 100 | - | - | - | - | 5 | Parkstone Bay | |
| | 081/1070 | - | - | - | - | - | 5 | - | |
| | 081/1060 | - | - | - | - | - | 100 | - | |
| | 681/2424 | > 100 | N/A | < 1 | > 20 | > 20 | 5 | Parkstone Bay | |
| | 681/2425 | < 1 | N/A | < 1 | < 1 | < 1 | 50 | Baiter | |
| | 681/2426 | < 1 | - | - | - | - | 100 | Baiter | |
| | 681/2427 | < 1 | - | - | - | - | 100 | Fishermans Dock | |
| | 081/2430 | - | - | - | - | - | 100 | - | |
| | 081/2420 | - | - | - | - | - | 100 | - | |
| | 081/2410 | - | - | - | - | - | 100 | - | |
| | 081/2400 | - | - | - | - | - | 100 | - | |
| | 081/2390 | - | - | - | - | - | 100 | - | |
| | 081/2380 | - | - | - | - | - | 100 | - | |
| | 681/2428 | > 1 | N/A | < 1 | > 1 | > 1 | 100 | Fishermans Dock | |
| | 681/2429 | > 100 | - | - | - | - | 100 | Poole Quay | |
| | 681/2430 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Poole Quay | |
| | 081/2370 | - | - | - | - | - | 100 | - | |
| | 081/2360 | - | - | - | - | - | 100 | - | |
| | 081/2350 | - | - | - | - | - | 100 | - | |
| | 681/2431 | > 2 | - | - | - | - | 100 | West Quay | |
| | 081/2340 | - | - | - | - | - | 100 | - | |
| | 081/2530 | - | - | - | - | - | 100 | - | |
| | 081/2520 | - | - | - | - | - | 100 | - | |
| | 081/2510 | - | - | - | - | - | 100 | - | |
| | 081/2500 | - | - | - | - | - | 100 | - | |
| | 081/2490 | - | - | - | - | - | 100 | - | |
| | 081/2480 | - | - | - | - | - | 100 | - | |
| | 081/2470 | - | - | - | - | - | 100 | - | |
| | 681/2432 | > 20 | - | - | - | - | 100 | Holes Bay | |
| | 081/2460 | - | - | - | - | - | 100 | - | |
| | 081/2450 | - | - | - | - | - | 100 | - | |
| | 081/2440 | - | - | - | - | - | 5 | - | |
| | 681/2433 | > 2 | < 1 | N/A | > 1 | > 1 | 5 | Holes Bay | |
| | 681/2434 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Holes Bay | |
| | 081/1050 | - | - | - | - | - | 5 | - | |
| | 681/2435 | > 100 | < 1 | N/A | > 100 | > 100 | 100 | Holes Bay | |
| | 681/2436 | > 100 | N/A | > 5 | > 100 | > 100 | 100 | Hamworthy | |
| | 681/2437 | > 100 | - | - | - | - | 100 | New Quay | |
| | 681/2438 | > 100 | N/A | > 20 | > 100 | > 100 | 100 | Lower Hamworthy | |
| | 681/2440 | > 100 | N/A | < 1 | > 100 | > 100 | 5 | Hamworthy Park | |
| | 681/2441 | > 100 | - | - | - | - | 100 | Lake | |
| | 681/2442 | > 100 | N/A | > 1 | > 100 | > 100 | 5 | Lake Pier | |
| | 681/2443 | > 1 | - | - | - | - | 100 | Rockley Sands | |
| | 081/1140 | - | - | - | - | - | 5 | - | |
| | 081/2090 | - | - | - | - | - | 100 | - | |
| | 081/2110 | - | - | - | - | - | 100 | - | |
| | 081/2120 | - | - | - | - | - | 100 | - | |
| | 081/2130 | - | - | - | - | - | 100 | - | |
| | 081/2140 | - | - | - | - | - | 50 | - | |

Table 4.7a Standard of DefenceTable for Process Unit 5F-4

| STANDARD OF DEFENCE TABLE - FUTURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 4 | 681/2415 | > 100 | - | - | - | - | 100 | Poole Sandbanks | |
| | 081/2150 | - | - | - | - | - | 100 | - | |
| | 081/1120 | - | - | - | - | - | 100 | - | |
| | 681/2416 | < 1 | N/A | < 1 | < 5 | < 5 | 100 | Sandbanks Road | |
| | 681/2417 | > 20 | N/A | < 1 | > 10 | > 10 | 100 | Shore Road | |
| | 081/2180 | - | - | - | - | - | 100 | - | |
| | 081/2170 | - | - | - | - | - | 100 | - | |
| | 081/2160 | - | - | - | - | - | 100 | - | |
| | 681/2418 | < 1 | - | - | - | - | 100 | Evening Hill | |
| | 081/1080 | - | - | - | - | - | 100 | - | |
| | 681/2419 | > 100 | - | - | - | - | 100 | Lilliput | |
| | 081/2210 | - | - | - | - | - | 100 | - | |
| | 081/2200 | - | - | - | - | - | 100 | - | |
| | 081/2331 | - | - | - | - | - | 100 | - | |
| | 081/2270 | - | - | - | - | - | 100 | - | |
| | 081/2280 | - | - | - | - | - | 100 | - | |
| | 681/2420 | > 100 | - | - | - | - | 100 | Lilliput | |
| | 681/2444 | > 100 | - | - | - | - | 100 | Lilliput | |
| | 081/2300 | - | - | - | - | - | 100 | - | |
| | 081/2260 | - | - | - | - | - | 100 | - | |
| | 081/2250 | - | - | - | - | - | 100 | - | |
| | 081/2240 | - | - | - | - | - | 100 | - | |
| | 681/2421 | < 1 | N/A | < 1 | < 1 | < 1 | 100 | Blue Lagoon | |
| | 081/2230 | - | - | - | - | - | 100 | - | |
| | 081/2220 | - | - | - | - | - | 100 | - | |
| | 081/2330 | - | - | - | - | - | 100 | - | |
| | 081/2320 | - | - | - | - | - | 100 | - | |
| | 681/2422 | > 20 | N/A | < 1 | > 10 | > 10 | 100 | Parkstone | |
| | 681/2423 | > 100 | - | - | - | - | 5 | Parkstone Bay | |
| | 081/1070 | - | - | - | - | - | 5 | - | |
| | 081/1060 | - | - | - | - | - | 100 | - | |
| | 681/2424 | > 20 | N/A | < 1 | > 5 | > 5 | 5 | Parkstone Bay | |
| | 681/2425 | < 1 | N/A | < 1 | < 1 | < 1 | 50 | Baiter | |
| | 681/2426 | < 1 | - | - | - | - | 100 | Baiter | |
| | 681/2427 | < 1 | - | - | - | - | 100 | Fishermans Dock | |
| | 081/2430 | - | - | - | - | - | 100 | - | |
| | 081/2420 | - | - | - | - | - | 100 | - | |
| | 081/2410 | - | - | - | - | - | 100 | - | |
| | 081/2400 | - | - | - | - | - | 100 | - | |
| | 081/2390 | - | - | - | - | - | 100 | - | |
| | 081/2380 | - | - | - | - | - | 100 | - | |
| | 681/2428 | < 1 | N/A | < 1 | < 1 | < 1 | 100 | Fishermans Dock | |
| | 681/2429 | > 5 | - | - | - | - | 100 | Poole Quay | |
| | 681/2430 | > 5 | N/A | < 1 | > 5 | > 5 | 100 | Poole Quay | |
| | 081/2370 | - | - | - | - | - | 100 | - | |
| | 081/2360 | - | - | - | - | - | 100 | - | |
| | 081/2350 | - | - | - | - | - | 100 | - | |
| | 681/2431 | < 1 | - | - | - | - | 100 | West Quay | |
| | 081/2340 | - | - | - | - | - | 100 | - | |
| | 081/2530 | - | - | - | - | - | 100 | - | |
| | 081/2520 | - | - | - | - | - | 100 | - | |
| | 081/2510 | - | - | - | - | - | 100 | - | |
| | 081/2500 | - | - | - | - | - | 100 | - | |
| | 081/2490 | - | - | - | - | - | 100 | - | |
| | 081/2480 | - | - | - | - | - | 100 | - | |
| | 081/2470 | - | - | - | - | - | 100 | - | |
| | 681/2432 | > 1 | - | - | - | - | 100 | Holes Bay | |
| | 081/2460 | - | - | - | - | - | 100 | - | |
| | 081/2450 | - | - | - | - | - | 100 | - | |
| | 081/2440 | - | - | - | - | - | 5 | - | |
| | 681/2433 | < 1 | N/A | < 1 | < 1 | < 1 | 5 | Holes Bay | |
| | 681/2434 | > 20 | N/A | < 1 | > 20 | > 20 | 100 | Holes Bay | |
| | 081/1050 | - | - | - | - | - | 5 | - | |
| | 681/2435 | > 100 | < 1 | N/A | > 100 | > 100 | 100 | Holes Bay | |
| | 681/2436 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Hamworthy | |
| | 681/2437 | > 100 | - | - | - | - | 100 | New Quay | |
| | 681/2438 | > 100 | N/A | > 2 | > 100 | > 100 | 100 | Lower Hamworthy | |
| | 681/2440 | > 20 | N/A | < 1 | > 20 | > 20 | 5 | Hamworthy Park | |
| | 681/2441 | > 100 | - | - | - | - | 100 | Lake | |
| | 681/2442 | > 50 | < 1 | N/A | > 50 | > 50 | 5 | Lake Pier | |
| | 681/2443 | < 1 | - | - | - | - | 100 | Rockley Sands | |
| | 081/1140 | - | - | - | - | - | 5 | - | |
| | 081/2090 | - | - | - | - | - | 100 | - | |
| | 081/2110 | - | - | - | - | - | 100 | - | |
| | 081/2120 | - | - | - | - | - | 100 | - | |
| | 081/2130 | - | - | - | - | - | 100 | - | |
| | 081/2140 | - | - | - | - | - | 50 | - | |

Table 4.7b Standard of DefenceTable for Process Unit 5F-4

| UNDERMINING ASSESSMENT TABLE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Sub Code | CPSE/SDSU Foreshore Assessment | | | NRA Photogrammetry Analysis | | | Comments |
| | | | Dependency | Level | Condition | Typical Profile Ref | Lower Foreshore Condition | Upper Foreshore Condition | |
| 5F- 4 | 681/2415 | 1 | High | Low | Eroding | | | | |
| | 081/2150 | 339 | High | Low | Eroding | | | | |
| | 081/1120 | 218 | Low | Low | Stable | | | | |
| | 081/1120 | 219 | Low | Low | Stable | | | | |
| | 681/2416 | 1 | High | Variable | Volatile | | | | |
| | 681/2417 | 1 | High | Variable | Volatile | | | | |
| | 681/2417 | 2 | Medium | Low | Volatile | | | | |
| | 081/2180 | 344 | High | High | Stable | | | | |
| | 081/2180 | 343 | High | Low | Stable | | | | |
| | 081/2170 | 342 | High | Low | Stable | | | | |
| | 081/2170 | 341 | High | Low | Stable | | | | |
| | 081/2160 | 340 | High | Low | Stable | | | | |
| | 681/2418 | 1 | High | Variable | Volatile | | | | |
| | 081/1080 | 215 | Medium | High | Stable | | | | |
| | 681/2419 | 1 | High | Variable | Volatile | | | | |
| | 081/2210 | 347 | High | Low | Stable | | | | |
| | 081/2200 | 346 | High | Low | Stable | | | | |
| | 081/2331 | - | - | - | - | | | | |
| | 081/2270 | 357 | Low | Low | Stable | | | | |
| | 081/2270 | 358 | Low | Low | Stable | | | | |
| | 081/2280 | 359 | Low | Low | Stable | | | | |
| | 681/2420 | 1 | High | Low | Volatile | | | | |
| | 681/2420 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2444 | 1 | High | Low | Volatile | | | | |
| | 081/2300 | 361 | Low | Low | Stable | | | | |
| | 081/2300 | 362 | High | Low | Stable | | | | |
| | 081/2300 | 363 | High | Low | Stable | | | | |
| | 081/2260 | 356 | Low | Low | Stable | | | | |
| | 081/2250 | 355 | Low | Low | Stable | | | | |
| | 081/2250 | 354 | Low | Low | Stable | | | | |
| | 081/2240 | 353 | High | Low | Stable | | | | |
| | 081/2240 | 352 | High | Low | Stable | | | | |
| | 681/2421 | 1 | High | Variable | Volatile | | | | |
| | 081/2230 | 351 | High | High | Stable | | | | |
| | 081/2230 | 350 | High | High | Stable | | | | |
| | 081/2220 | 349 | High | High | Stable | | | | |
| | 081/2220 | 348 | High | High | Stable | | | | |
| | 081/2330 | 366 | High | Low | Stable | | | | |
| | 081/2320 | 365 | High | Low | Stable | | | | |
| | 681/2422 | 1 | High | Variable | Volatile | | | | |
| | 681/2422 | 2 | Low | Low | Stable | | | | |
| | 681/2423 | 1 | Medium | Low | Stable | | | | |
| | 681/2423 | 2 | Medium | Low | Stable | | | | |
| | 081/1070 | 213 | Medium | High | Stable | | | | |
| | 081/1070 | 214 | Low | High | Stable | | | | |
| | 081/1060 | 207 | Low | Low | Stable | | | | |
| | 081/1060 | 208 | Low | High | Stable | | | | |
| | 081/1060 | 209 | Medium | High | Stable | | | | |
| | 081/1060 | 210 | Medium | High | Stable | | | | |
| | 081/1060 | 211 | Medium | High | Stable | | | | |
| | 081/1060 | 212 | Medium | High | Stable | | | | |
| | 081/1060 | 443 | - | - | - | | | | |
| | 681/2424 | 1 | High | Variable | Volatile | | | | |
| | 681/2425 | 1 | Low | Variable | Volatile | | | | |
| | 681/2426 | 1 | High | High | Stable | | | | |
| | 681/2427 | 1 | High | Low | Volatile | | | | |
| | 081/2430 | 379 | High | Low | Stable | | | | |
| | 081/2430 | 378 | Low | Low | Stable | | | | |

Table 4.8a Undermining Assessment Table for Processing Unit 5F-4

| UNDERMINING ASSESSMENT TABLE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Sub Code | CPSE/SDSU Foreshore Assessment | | | NRA Photogrammetry Analysis | | | Comments |
| | | | Dependency | Level | Condition | Typical Profile Ref | Lower Foreshore Condition | Upper Foreshore Condition | |
| | 081/2410 | 375 | Low | Low | Stable | | | | |
| | 081/2410 | 374 | Low | Low | Stable | | | | |
| | 081/2400 | 373 | Low | Low | Stable | | | | |
| | 081/2390 | 372 | Low | Low | Stable | | | | |
| | 081/2380 | 371 | Low | Low | - | | | | |
| | 681/2428 | 1 | High | Low | Stable | | | | |
| | 681/2429 | 1 | High | Low | Stable | | | | |
| | 681/2429 | 2 | High | Low | Stable | | | | |
| | 681/2430 | 1 | High | Low | Stable | | | | |
| | 081/2370 | 370 | Low | Low | - | | | | |
| | 081/2360 | 369 | Low | Low | - | | | | |
| | 081/2350 | 368 | Low | Low | - | | | | |
| | 681/2431 | 1 | High | Low | Stable | | | | |
| | 081/2340 | 367 | Low | Low | - | | | | |
| | 081/2530 | 390 | High | Low | Stable | | | | |
| | 081/2520 | 389 | Low | Low | Stable | | | | |
| | 081/2510 | 388 | High | Low | Stable | | | | |
| | 081/2500 | 387 | Low | Low | Stable | | | | |
| | 081/2490 | 386 | High | Low | Stable | | | | |
| | 081/2480 | 385 | Low | Low | Stable | | | | |
| | 081/2470 | 384 | High | Low | Stable | | | | |
| | 681/2432 | 1 | Low | High | Stable | | | | |
| | 081/2460 | 383 | Low | Low | Stable | | | | |
| | 081/2450 | 382 | High | Low | Stable | | | | |
| | 081/2450 | 381 | Low | Low | Stable | | | | |
| | 081/2440 | - | - | - | - | | | | |
| | 681/2433 | 1 | High | Low | Stable | | | | |
| | 681/2434 | 1 | Low | Variable | Stable | | | | |
| | 081/1050 | 206 | Low | High | Stable | | | | |
| | 681/2435 | 1 | High | Variable | Stable | | | | |
| | 681/2435 | 2 | High | Variable | Stable | | | | |
| | 681/2436 | 1 | High | Low | Stable | | | | |
| | 681/2437 | 1 | High | Low | Stable | | | | |
| | 681/2437 | 2 | High | Low | Stable | | | | |
| | 681/2437 | 3 | High | Low | Stable | | | | |
| | 681/2437 | 4 | High | Low | Stable | | | | |
| | 681/2437 | 5 | High | Low | Stable | | | | |
| | 681/2438 | 1 | Medium | Low | Stable | | | | |
| | 681/2438 | 2 | Medium | Low | Stable | | | | |
| | 681/2439 | 1 | High | Variable | Eroding | | | | |
| | 681/2440 | 1 | High | Low | Volatile | | | | |
| | 681/2440 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2441 | 1 | High | Variable | Volatile | | | | |
| | 681/2442 | 1 | High | Variable | Volatile | | | | |
| | 681/2443 | 1 | High | Variable | Volatile | | | | |
| | 681/2443 | 2 | High | Variable | Volatile | | | | |
| | 081/1140 | 222 | High | High | Eroding | | | | |
| | 081/2090 | 330 | High | Low | Eroding | | | | |
| | 081/2110 | 332 | Low | Low | Stable | | | | |
| | 081/2120 | 333 | Low | Low | Stable | | | | |
| | 081/2130 | 334 | High | Low | Stable | | | | |
| | 081/2130 | 335 | High | High | Stable | | | | |
| | 081/2140 | 336 | High | Low | Stable | | | | |
| | 081/2140 | 337 | High | Low | Stable | | | | |
| | 081/2140 | 338 | High | Low | Stable | | | | |

Table 4.8b Undermining Assessment Table for Processing Unit 5F-4

| STANDARD OF DEFENCE TABLE - PRESENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F-5 | 081/2770 | < 1 | - | - | - | - | 5 | - | |
| | 081/2780 | > 100 | - | - | - | - | 20 | - | |
| | 081/2790 | - | - | - | - | - | 20 | - | |
| | 081/2800 | > 100 | - | - | - | - | 50 | - | |
| | 081/2810 | > 100 | - | - | - | - | 50 | - | |
| | 081/2820 | - | - | - | - | - | 50 | - | |

| STANDARD OF DEFENCE TABLE - FUTURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F-5 | 081/2770 | < 1 | - | - | - | - | 5 | - | |
| | 081/2780 | > 100 | - | - | - | - | 20 | - | |
| | 081/2790 | - | - | - | - | - | 20 | - | |
| | 081/2800 | > 100 | - | - | - | - | 50 | - | |
| | 081/2810 | > 100 | - | - | - | - | 50 | - | |
| | 081/2820 | - | - | - | - | - | 50 | - | |

**Table 4.9 Standard of Defence Table for Process Unit 5F-5**

| UNDERMINING ASSESSMENT TABLE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Uni | Defence Code | Sub Code | SDSU Foreshore Assessment | | | NRA Photogrammetry Analysis | | | Comments |
| | | | Dependency | Level | Condition | Typical Profile Ref | Lower Foreshore Condition | Upper Foreshore Condition | |
| 5F-5 | 081/2770 | 423 | High | High | Stable | | | | |
| | 081/2770 | 424 | High | High | Stable | | | | |
| | 081/2780 | 425 | High | High | Stable | | | | |
| | 081/2790 | 426 | Low | High | Stable | | | | |
| | 081/2790 | 427 | Low | High | Stable | | | | |
| | 081/2790 | 428 | Low | High | Stable | | | | |
| | 081/2800 | - | - | - | - | | | | |
| | 081/2810 | - | - | - | - | | | | |
| | 081/2820 | - | - | - | - | | | | |

Table 4.10 Undermining Assessment Table for Processing Unit 5F-5

| STANDARD OF DEFENCE TABLE - PRESENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 6 | 681/2301 | > 100 | - | - | - | - | 50 | Studland | |
| | 681/2302 | > 100 | - | - | - | - | 100 | N. Swanage | |
| | 681/2303 | > 100 | N/A | < 1 | > 10 | > 10 | 100 | N. Swanage | |
| | 681/2304 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Swanage | |
| | 081/1130 | > 100 | - | - | - | - | 100 | - | |
| | 681/2305 | > 100 | - | - | - | - | 100 | Swanage | |
| | 681/2306 | > 100 | - | - | - | - | 100 | Swanage | |

| STANDARD OF DEFENCE TABLE - FUTURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 6 | 681/2301 | > 100 | - | - | - | - | 50 | Studland | |
| | 681/2302 | > 100 | - | - | - | - | 100 | N. Swanage | |
| | 681/2303 | > 100 | N/A | < 1 | > 5 | > 5 | 100 | N. Swanage | |
| | 681/2304 | > 100 | N/A | < 1 | > 100 | > 100 | 100 | Swanage | |
| | 081/1130 | > 100 | - | - | - | - | 100 | - | |
| | 681/2305 | > 100 | - | - | - | - | 100 | Swanage | |
| | 681/2306 | > 100 | - | - | - | - | 100 | Swanage | |

**Table 4.11 Standard of Defence Table for Process Unit 5F-6**

| UNDERMINING ASSESSMENT TABLE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Sub Code | CPSE/SDSU Foreshore Assessment | | | NRA Photogrammetry Analysis | | | Comments |
| | | | Dependency | Level | Condition | Typical Profile Ref | Lower Foreshore Condition | Upper Foreshore Condition | |
| 5F-6 | 681/2301 | 3 | High | Variable | Volatile | | | | |
| | 681/2302 | 1 | High | Low | Eroding | | | | |
| | 681/2302 | 2 | Medium | Low | Eroding | | | | |
| | 681/2303 | 1 | High | Variable | Volatile | | | | |
| | 681/2303 | 2 | Medium | Variable | Volatile | | | | |
| | 681/2303 | 3 | Medium | Variable | Volatile | | | | |
| | 681/2303 | 4 | Medium | Variable | Volatile | | | | |
| | 681/2304 | 1 | High | Variable | Volatile | | | | |
| | 681/2304 | 2 | Medium | Variable | Volatile | | | | |
| | 081/1130 | 220 | High | High | Stable | | | | |
| | 081/1130 | 221 | High | High | Stable | | | | |
| | 681/2305 | 1 | Low | High | Stable | | | | |
| | 681/2305 | 2 | High | High | Stable | | | | |
| | 681/2306 | 1 | Low | High | Stable | | | | |

Table 4.12 Undermining Assessment Table for Processing Unit 5F-6

| STANDARD OF DEFENCE TABLE - PRESENT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 7 | 681/2307 | > 100 | - | - | - | - | 100 | Durlston Cliffs | |

| STANDARD OF DEFENCE TABLE - FUTURE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Overflow | Overtopping | | | Overall Standard | PAGN Indicative Service Level | Location | Comments |
| | | | Vehicles | Pedestrians | Structural Damage | | | | |
| 5F - 7 | 681/2307 | > 100 | - | - | - | - | 100 | Durlston Cliffs | |

**Table 4.13 Standard of Defence Table for Process Unit 5F-7**

| UNDERMINING ASSESSMENT TABLE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Process Unit | Defence Code | Sub Code | CPSE Foreshore Assessment | | | NRA Photogrammetry Analysis | | | Comments |
| | | | Dependency | Level | Condition | Typical Profile Ref | Lower Foreshore Condition | Upper Foreshore Condition | |
| 5F - 7 | 681/2307 | 1 | Medium | Low | Stable | | | | |
| | 681/2307 | 2 | High | High | Stable | | | | |

Table 4.14 Undermining Assessment Table for Processing Unit 5F-7

# Appendix A

**Table A.1: Coastal Defences**

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 071/1050D | 1 | NEWFORESTDC | SZ28769139 | SZ28829137 | 0.07 | Armour | Fr | > 5 | |
| 071/1050D | 3 | New Forest DC | SZ28769139 | SZ28829137 | 0.07 | Recharge | Gd | | |
| 071/1050D | 4 | New Forest DC | SZ28769139 | SZ28829137 | 0.07 | Groynes | Gd | > 5 | |
| 071/1051D | 1 | NEWFORESTDC | SZ28829137 | SZ29099128 | 0.28 | Groynes | Fr | > 5 | |
| 071/1051D | 2 | NEWFORESTDC | SZ28829137 | SZ29099128 | 0.28 | Wall | Gd | > 5 | |
| 071/1051D | 3 | New Forest DC | SZ28829137 | SZ29099128 | 0.28 | Recharge | Gd | | |
| 071/1051D | 4 | New Forest DC | SZ28829137 | SZ29099128 | 0.28 | Groynes | Gd | > 5 | |
| 071/1052D | 1 | NEWFORESTDC | SZ29099128 | SZ29279120 | 0.18 | Groynes | Fr | > 5 | |
| 071/1052D | 2 | NEWFORESTDC | SZ29099128 | SZ29279120 | 0.18 | Apron | Fr | > 5 | |
| 071/1052D | 3 | NEWFORESTDC | SZ29099128 | SZ29279120 | 0.18 | Wall | Gd | > 5 | |
| 071/1052D | 4 | New Forest DC | SZ29099128 | SZ29279120 | 0.18 | Recharge | Gd | | |
| 071/1052D | 5 | New Forest DC | SZ29099128 | SZ29279120 | 0.18 | Groynes | Gd | > 5 | |
| 071/1053D | 1 | NEWFORESTDC | SZ29279120 | SZ29489114 | 0.23 | Bastion | Fr | > 5 | |
| 071/1053D | 2 | NEWFORESTDC | SZ29279120 | SZ29489114 | 0.23 | Groynes | Gd | > 5 | |
| 071/1053D | 3 | NEWFORESTD.C. | SZ29279120 | SZ29489114 | 0.23 | Apron | Fr | > 5 | |
| 071/1053D | 4 | NEWFORESTD.C. | SZ29279120 | SZ29489114 | 0.23 | WRtn | Gd | > 5 | |
| 071/1053D | 5 | New Forest DC | SZ29279120 | SZ29489114 | 0.23 | Recharge | Gd | | |
| 071/1053D | 6 | New Forest DC | SZ29279120 | SZ29489114 | 0.23 | Groynes | Gd | > 5 | |
| 071/1054D | 1 | NEWFORESTD.C. | SZ29489114 | SZ29959090 | 0.63 | Pitching | Gd | > 5 | 1991 |
| 071/1054D | 2 | NEWFORESTD.C. | SZ29489114 | SZ29959090 | 0.63 | Embkmt | Gd | > 5 | 1991 |
| 071/1055D | 1 | NEWFORESTD.C. | SZ29959090 | SZ31028984 | 1.54 | Embkmt | Gd | > 5 | 1991 |
| 081/1010 | 200 | CHRISTCHURCH | SZ17979098 | SZ18299152 | 0.89 | Banks | Pr | > 5 | |
| 081/1020 | 201 | CHRISTCHURCH | SZ18289158 | SZ18339198 | 0.80 | Banks | Fr | > 5 | 1960 |
| 081/1030 | 202 | CHRISTCHURCH | SZ17299238 | SZ16559184 | 3.30 | Banks | Pr | > 5 | |
| 081/1040 | 203 | POOLEBC | SY99359008 | SY99939012 | 0.80 | Wall | Gd | > 5 | |
| 081/1040 | 204 | POOLEBC | SY99359008 | SY99819002 | 0.69 | Groynes | Gd | > 5 | |
| 081/1040 | 205 | POOLEBC | SY99939012 | SZ00139013 | 0.10 | Banks | Pr | > 5 | |
| 081/1050 | 206 | POOLE BC | SY99269212 | SZ00319288 | 1.40 | Embkmt | Gd | > 5 | |
| 081/1060 | 207 | PHC (private) o | SZ01399025 | SZ01699022 | 0.30 | Embkmt | Gd | > 5 | 1990 |
| 081/1060 | 208 | POOLEBC | SZ01379021 | SZ01589017 | 0.20 | Bkwtrs | Gd | > 5 | |

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 081/1060 | 209 | POOLEBC | SZ01399025 | SZ01699022 | 0.30 | Revet | Gd | > 5 | 1990 |
| 081/1060 | 210 | POOLEBC | SZ01699022 | SZ01869018 | 0.30 | Pitching | Gd | > 5 | |
| 081/1060 | 211 | POOLEBC | SZ01869018 | SZ02109012 | 0.16 | Banks | Gd | > 5 | |
| 081/1060 | 212 | POOLEBC | SZ02109018 | SZ02479064 | 0.60 | Pitching | Fr | > 5 | |
| 081/1060 | 443 | EA | SZ01509030 | SZ01709030 | 0.20 | Wall | Fr | 2 to 5 | |
| 081/1070 | 213 | POOLEBC | SZ02479064 | SZ03059066 | 0.60 | Pitching | Pr | > 5 | |
| 081/1070 | 214 | POOLEBC | SZ03059066 | SZ03189048 | 0.20 | Wall | Pr | > 5 | |
| 081/1080 | 215 | POOLEBC | SZ04088929 | SZ04288905 | 0.30 | Gabions | Bd | < 2 | |
| 081/1090 | 216 | POOLE BC | SZ02049066 | SZ02099087 | 0.20 | Wall | Gd | > 5 | |
| 081/1110 | 217 | POOLE BC | SZ02539094 | SZ02629076 | 0.30 | Wall | Fr | > 5 | |
| 081/1120 | 218 | PBC&HARBOUR COMMISSIONERS | SZ04298905 | SZ04908854 | 1.00 | Wall | Gd | > 5 | |
| 081/1120 | 219 | PBC&HARBOUR COMMISSIONERS | SZ04908854 | SZ04308769 | 1.20 | SpWl | Gd | > 5 | |
| 081/1130 | 220 | PURBECKDC | SZ03107950 | SZ03507870 | 1.20 | Groynes | Bd | 2 to 5 | |
| 081/1130 | 221 | PURBECKDC | SZ03107950 | SZ03507870 | 1.20 | Wall | Fr | > 5 | 1938 |
| 081/1140 | 222 | PURBECKDC | SZ02608840 | SZ03158772 | 1.25 | Armour | Gd | > 5 | 1989 |
| 081/2010 | 320 | PRIVATE VARIOUS | SZ17249238 | SZ17289230 | 0.10 | Banks | Pr | > 5 | |
| 081/2010 | 321 | PRIVATE VARIOUS | SZ17249238 | SZ17289230 | 0.10 | Wall | Pr | > 5 | |
| 081/2020 | 322 | PRIVATE VARIOUS | SZ17289230 | SZ17359226 | 0.07 | Wall | Fr | > 5 | |
| 081/2030 | 323 | PRIVATE VARIOUS | SZ17359226 | SZ17929192 | 0.75 | Wall | Pr | 2 to 5 | |
| 081/2040 | 324 | PRIVATE VARIOUS | SZ17929192 | SZ17979199 | 0.30 | Embkmt | Pr | 2 to 5 | |
| 081/2050 | 325 | PRIVATE VARIOUS | SZ17979199 | SZ18059207 | 0.20 | Wall | Pr | 2 to 5 | |
| 081/2060 | 326 | AVONMOUTHHOTEL (THF) | SZ18059207 | SZ18199203 | 0.14 | Wall | Fr | > 5 | |
| 081/2060 | 327 | AVONMOUTHHOTEL (THF) | SZ18059207 | SZ18199203 | 0.14 | Embkmt | Fr | > 5 | |
| 081/2070 | 328 | PRIVATE VARIOUS | SZ18229203 | SZ18249202 | 0.07 | Wall | Fr | > 5 | |
| 081/2080 | 329 | PRIVATE VARIOUS | SZ18249202 | SZ18329200 | 0.02 | Wall | Fr | > 5 | |
| 081/2090 | 330 | PRIVATE | SZ03168770 | SZ03178760 | 0.05 | Wall | Pr | 2 to 5 | |
| 081/2100 | 331 | PRIVATE | SZ03168769 | SZ03168770 | 0.05 | Wall | Fr | > 5 | |
| 081/2110 | 332 | PRIVATE | SZ03158763 | SZ03168769 | 0.10 | Wall | Fr | > 5 | |
| 081/2120 | 333 | PRIVATE | SZ03138762 | SZ03158763 | 0.02 | Wall | Gd | > 5 | |
| 081/2130 | 334 | PRIVATE | SZ03068760 | SZ03138762 | 0.05 | Banks | Fr | > 5 | |

Table A.1 (2)

**Table A.1: Coastal Defences**

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 081/2130 | 335 | PRIVATE | SZ03068760 | SZ03138762 | 0.05 | Wall | Fr | > 5 | |
| 081/2140 | 336 | PRIVATE | SZ02908745 | SZ02958750 | 0.10 | Groynes | Fr | > 5 | |
| 081/2140 | 337 | PRIVATE | SZ02958750 | SZ03058759 | 0.14 | Groynes | Pr | > 5 | |
| 081/2140 | 338 | PRIVATE | SZ02758740 | SZ03068760 | 0.37 | Wall | Fr | > 5 | |
| 081/2150 | 339 | PRIVATE VARIOUS | SZ03848764 | SZ03608748 | 0.30 | Wall | Pr | > 5 | |
| 081/2160 | 340 | POOLEHARBOUR COMMISSIONERS | SZ04278908 | SZ04788878 | 0.61 | SpWl | Fr | > 5 | 1895 |
| 081/2170 | 341 | POOLEHARBOUR COMMISSIONERS | SZ04788878 | SZ04918854 | 0.28 | Banks | Gd | > 5 | |
| 081/2170 | 342 | POOLEHARBOUR COMMISSIONERS | SZ04788878 | SZ04918854 | 0.28 | SpWl | Fr | > 5 | 1895 |
| 081/2180 | 343 | POOLEHARBOUR COMMISSIONERS | SZ04918854 | SZ04908827 | 0.25 | Banks | Fr | > 5 | |
| 081/2180 | 344 | POOLEHARBOUR COMMISSIONERS | SZ04918854 | SZ04908827 | 0.25 | Wall | Pr | > 5 | |
| 081/2190 | 345 | POOLEHARBOUR COMMISSIONERS | SZ04908827 | SZ04328768 | 0.89 | Wall | Fr | > 5 | |
| 081/2200 | 346 | PRIVATE VARIOUS | SZ03808970 | SZ03858966 | 0.10 | Banks | Pr | > 5 | |
| 081/2210 | 347 | PRIVATE VARIOUS | SZ03858966 | SZ04088929 | 0.44 | Wall | Pr | > 5 | |
| 081/2220 | 348 | SALTERNSMARINA | SZ03708975 | SZ03658972 | 0.12 | Pitching | Bd | 2 to 5 | |
| 081/2220 | 349 | SALTERNSMARINA | SZ03708975 | SZ03658972 | 0.12 | Banks | Pr | > 5 | |
| 081/2230 | 350 | SALTERNSMARINA | SZ03658972 | SZ03628963 | 0.09 | Banks | Gd | > 5 | |
| 081/2230 | 351 | SALTERNSMARINA | SZ03658972 | SZ03628963 | 0.09 | Wall | Gd | > 5 | |
| 081/2240 | 352 | SALTERNSMARINA | SZ03628963 | SZ03508943 | 0.23 | Armour | Fr | > 5 | |
| 081/2240 | 353 | SALTERNSMARINA | SZ03628963 | SZ03508943 | 0.23 | SpWl | Gd | > 5 | |
| 081/2250 | 354 | SALTERNSMARINA | SZ03428942 | SZ03428942 | 0.01 | Bkwtrs | Gd | > 5 | |
| 081/2250 | 355 | SALTERNSMARINA | SZ03508943 | SZ03468940 | 0.07 | Wall | Gd | > 5 | |
| 081/2260 | 356 | SALTERNSMARINA | SZ03468940 | SZ03738968 | 0.41 | Wall | Gd | > 5 | |
| 081/2270 | 357 | SALTERNSMARINA | SZ03738968 | SZ03768972 | 0.11 | Wall | Fr | > 5 | |
| 081/2270 | 358 | SALTERNSMARINA | SZ03738968 | SZ03768972 | 0.11 | Wall | Gd | > 5 | |
| 081/2280 | 359 | SALTERNSMARINA | SZ03768972 | SZ03748967 | 0.09 | Wall | Pr | > 5 | |
| 081/2290 | 360 | SALTERNSMARINA | SZ03748967 | SZ03748966 | 0.02 | Wall | Gd | > 5 | |
| 081/2300 | 361 | SALTERNSMARINA | SZ03748965 | SZ03748965 | 0.01 | Bkwtrs | Gd | > 5 | |
| 081/2300 | 362 | SALTERNSMARINA | SZ03748966 | SZ03748965 | 0.02 | Pitching | Pr | 2 to 5 | |
| 081/2300 | 363 | SALTERNSMARINA | SZ03748966 | SZ03748965 | 0.02 | Banks | Fr | > 5 | |
| 081/2310 | 364 | SALTERNSMARINA | SZ03748965 | SZ03808970 | 0.05 | Wall | Pr | 2 to 5 | |

Table A.1: Coastal Defences

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 081/2320 | 365 | LILLIPUTS.C. | SZ03579024 | SZ03659020 | 0.07 | Wall | Pr | 2 to 5 | |
| 081/2330 | 366 | PARKWAYMARINE | SZ03659020 | SZ03679018 | 0.05 | Wall | Pr | > 5 | |
| 081/2340 | 367 | POOLEHARBOUR COMMISSIONERS | SZ00629035 | SZ00659034 | 0.02 | Wall | Pr | 2 to 5 | |
| 081/2350 | 368 | POOLEHARBOUR COMMISSIONERS | SZ00659034 | SZ00709031 | 0.07 | Wall | Fr | > 5 | |
| 081/2360 | 369 | POOLEHARBOUR COMMISSIONERS | SZ00709031 | SZ00809028 | 0.10 | Wall | Fr | > 5 | |
| 081/2370 | 370 | POOLEHARBOUR COMMISSIONERS | SZ00809028 | SZ00849026 | 0.05 | Wall | Fr | > 5 | |
| 081/2380 | 371 | POOLEHARBOUR COMMISSIONERS | SZ00849026 | SZ01059024 | 0.20 | Wall | Fr | > 5 | |
| 081/2390 | 372 | POOLEHARBOUR COMMISSIONERS | SZ01059024 | SZ01219023 | 0.17 | Wall | Fr | > 5 | |
| 081/2400 | 373 | POOLEHARBOUR COMMISSIONERS | SZ01219023 | SZ01399022 | 0.15 | Wall | Fr | > 5 | |
| 081/2410 | 374 | POOLEHARBOUR COMMISSIONERS | SZ01399020 | SZ01419017 | 0.03 | Bkwtrs | Pr | > 5 | |
| 081/2410 | 375 | POOLEHARBOUR COMMISSIONERS | SZ01399022 | SZ01419025 | 0.03 | Wall | Fr | > 5 | |
| 081/2411 | 1 | EA | SZ01359026 | SZ01659025 | 0.25 | Embkmt | Fr | 2 to 5 | |
| 081/2420 | 376 | POOLEHARBOUR COMMISSIONERS | SZ01419017 | SZ01509015 | 0.07 | Bkwtrs | Pr | > 5 | |
| 081/2420 | 377 | POOLEHARBOUR COMMISSIONERS | SZ01419025 | SZ01509024 | 0.07 | Wall | Pr | > 5 | |
| 081/2430 | 378 | POOLEHARBOUR COMMISSIONERS | SZ01509015 | SZ01589017 | 0.10 | Bkwtrs | Pr | > 5 | |
| 081/2430 | 379 | POOLEHARBOUR COMMISSIONERS | SZ01509024 | SZ01589028 | 0.10 | Banks | Gd | > 5 | |
| 081/2450 | 381 | PRIVATE | SZ01209105 | SZ00849103 | 0.38 | Pitching | Fr | > 5 | |
| 081/2450 | 382 | PRIVATE | SZ01209105 | SZ00849103 | 0.38 | Banks | Fr | > 5 | |
| 081/2460 | 383 | PRIVATE | SZ00849103 | SZ00859091 | 0.14 | Wall | Gd | > 5 | |
| 081/2470 | 384 | PRIVATE | SZ00859091 | SZ00789078 | 0.20 | Wall | Bd | 2 to 5 | |
| 081/2480 | 385 | PRIVATE | SZ00789078 | SZ00679063 | 0.17 | Wall | Fr | > 5 | |
| 081/2490 | 386 | PRIVATE | SZ00679063 | SZ00659061 | 0.05 | Wall | Pr | < 2 | |
| 081/2500 | 387 | PRIVATE | SZ00659061 | SZ00599050 | 0.12 | Wall | Fr | > 5 | |
| 081/2510 | 388 | PRIVATE | SZ00599050 | SZ00599049 | 0.01 | Wall | Pr | 2 to 5 | |
| 081/2520 | 389 | PRIVATE | SZ00599049 | SZ00589042 | 0.13 | Wall | Fr | > 5 | |
| 081/2530 | 390 | PRIVATE | SZ00589042 | SZ00629036 | 0.07 | Wall | Bd | 2 to 5 | |
| 081/2540 | 391 | NATIONALPOWER | SZ00479045 | SZ00549070 | 0.28 | Wall | Fr | > 5 | |
| 081/2550 | 392 | POOLEHARBOUR COMMISSIONERS C | SZ00649023 | SZ00569029 | 0.07 | Wall | Fr | > 5 | |
| 081/2560 | 393 | POOLEHARBOUR COMMISSIONERS C | SZ00719023 | SZ00649024 | 0.07 | Wall | Fr | > 5 | |
| 081/2570 | 394 | POOLEHARBOUR COMMISSIONERS C | SZ00799022 | SZ00709023 | 0.07 | Wall | Pr | > 5 | |

**Table A.1: Coastal Defences**

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 081/2580 | 395 | PRIVATE | SZ00809018 | SZ00799022 | 0.05 | Wall | Fr | > 5 | |
| 081/2590 | 396 | POOLEHARBOUR COMMISSIONERS C | SZ00819017 | SZ00809018 | 0.01 | Apron | Fr | > 5 | |
| 081/2590 | 397 | POOLEHARBOUR COMMISSIONERS C | SZ00819017 | SZ00809018 | 0.05 | Wall | Fr | > 5 | |
| 081/2600 | 398 | POOLEHARBOUR COMMISSIONERS C | SZ00849020 | SZ00819017 | 0.05 | Wall | Pr | > 5 | |
| 081/2610 | 399 | POOLEHARBOUR COMMISSIONERS C | SZ00849018 | SZ00849020 | 0.02 | Wall | Fr | > 5 | |
| 081/2620 | 400 | PHC/LESSEE | SZ00859018 | SZ00849018 | 0.02 | Wall | Pr | 2 to 5 | |
| 081/2630 | 401 | PHC/LESSEE | SZ00869020 | SZ00859018 | 0.02 | Wall | Fr | > 5 | |
| 081/2640 | 402 | PHC/LESSEE | SZ00169015 | SZ00139007 | 0.07 | Armour | Gd | > 5 | |
| 081/2640 | 403 | PHC/LESSEE | SZ00169015 | SZ00139007 | 0.07 | Banks | Gd | > 5 | |
| 081/2650 | 404 | PHC/LESSEE | SZ00139007 | SZ00149007 | 0.01 | Bkwtrs | Gd | > 5 | |
| 081/2650 | 405 | PHC/LESSEE | SZ00139007 | SZ00299003 | 0.17 | Wall | Gd | > 5 | |
| 081/2660 | 406 | PHC/LESSEE | SZ00299003 | SZ00298986 | 0.17 | Pitching | Gd | > 5 | |
| 081/2660 | 407 | PHC/LESSEE | SZ00299003 | SZ00298986 | 0.17 | Banks | Gd | > 5 | |
| 081/2670 | 408 | PHC/LESSEE | SZ00298986 | SZ00558976 | 0.62 | Banks | Gd | > 5 | |
| 081/2670 | 409 | PHC/LESSEE | SZ00298986 | SZ00558976 | 0.62 | Armour | Gd | > 5 | |
| 081/2680 | 410 | POOLEHARBOUR COMMISSIONERS | SZ00558976 | SZ00888976 | 0.38 | Wall | Gd | > 5 | 1988 |
| 081/2690 | 411 | POOLEHARBOUR COMMISSIONERS | SZ00888976 | SZ00948993 | 0.25 | Armour | Fr | > 5 | |
| 081/2690 | 412 | POOLEHARBOUR COMMISSIONERS | SZ00888976 | SZ00948993 | 0.25 | Banks | Fr | > 5 | |
| 081/2700 | 413 | POOLEHARBOUR COMMISSIONERS | SZ01058993 | SZ01068993 | 0.01 | Bkwtrs | Bd | 2 to 5 | |
| 081/2700 | 414 | POOLEHARBOUR COMMISSIONERS | SZ00948993 | SZ01068993 | 0.12 | Armour | Gd | > 5 | |
| 081/2700 | 415 | POOLEHARBOUR COMMISSIONERS | SZ00948993 | SZ01068993 | 0.12 | Banks | Gd | > 5 | |
| 081/2710 | 416 | POOLEHARBOUR COMMISSIONERS | SZ01068993 | SZ01059009 | 0.16 | Wall | Fr | > 5 | |
| 081/2720 | 417 | POOLEHARBOUR COMMISSIONERS | SZ01059009 | SZ01009017 | 0.09 | Wall | Pr | > 5 | |
| 081/2730 | 418 | | SZ01009017 | SZ00939019 | 0.07 | Brwork | Pr | > 5 | |
| 081/2730 | 419 | POOLEHARBOUR COMMISSIONERS | SZ01009017 | SZ00939019 | 0.07 | Wall | Fr | > 5 | |
| 081/2740 | 420 | POOLEHARBOUR COMMISSIONERS | SZ00939019 | SZ00869020 | 0.07 | Wall | Fr | > 5 | |
| 081/2750 | 421 | PRIVATE (VARIOUS) | SY98939018 | SY99359010 | 0.47 | Wall | Pr | > 5 | |
| 081/2760 | 422 | PRIVATE (VARIOUS) | SY98889022 | SY98939018 | 0.05 | Wall | Gd | > 5 | 1990 |
| 081/2770 | 423 | NATIONALTRUST | SZ03628297 | SZ03648668 | 4.30 | Embkmt | Fr | > 5 | |
| 081/2770 | 424 | NATIONALTRUST | SZ03528316 | SZ03468333 | 0.16 | Gabions | Bd | < 2 | |

Table A.1: Coastal Defences

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 081/2780 | 425 | NATIONALTRUST | SZ03698292 | SZ03628297 | 0.07 | Wall | Pr | 2 to 5 | |
| 081/2790 | 426 | NATIONALTRUST | SZ03758285 | SZ03758289 | 0.03 | Armour | Pr | < 2 | |
| 081/2790 | 427 | NATIONALTRUST | SZ03758285 | SZ03698292 | 0.07 | Gabions | Pr | < 2 | |
| 081/2790 | 428 | NATIONALTRUST | SZ03758285 | SZ03698292 | 0.07 | Banks | Pr | < 2 | |
| 081/2800 | 429 | PRIVATE | SZ04018256 | SZ03858285 | 0.30 | Banks | Fr | > 5 | |
| 081/2810 | 430 | PRIVATE | SZ04088250 | SZ04018256 | 0.10 | Gabions | Fr | > 5 | |
| 081/2820 | 431 | PRIVATE | SZ04308234 | SZ04088250 | 0.26 | Banks | Pr | > 5 | |
| 571/2757 | 1 | ENGLISH HERITAGE | SZ31868974 | SZ31818971 | 0.06 | Breastwork | Class 2 | > 10 | 1980 |
| 571/2757 | 2 | ENGLISH HERITAGE | SZ31818971 | SZ31788971 | 0.04 | Wall | Class 4 | 5 - 10 | 1850 |
| 571/2757 | 3 | ENGLISH HERITAGE | SZ31718970 | SZ31578970 | 0.15 | Breastwork | Class 3 | 5 - 10 | 1970 |
| 571/2757 | 4 | ENGLISH HERITAGE | SZ31538970 | SZ31508971 | 0.03 | Breastwork | Class 3 | 5 - 10 | 1970 |
| 571/2757 | 5 | ENGLISH HERITAGE | SZ31508971 | SZ31468972 | 0.04 | Breastwork | Class 2 | > 10 | 1980 |
| 571/2757 | 6 | ENGLISH HERITAGE | SZ31818971 | SZ31578970 | 0.25 | Armour | Class 3 | > 10 | 1980 |
| 571/2757 | 7 | ENGLISH HERITAGE | SZ31868974 | SZ31468972 | 0.41 | Groynes | Class 3 | > 10 | 1970 |
| 571/2758 | 1 | NEW FOREST DC / HAMPSHIRE CC | SZ31468972 | SZ29929079 | 1.87 | Beach Ridge | | | |
| 571/2758 | 2 | NEW FOREST DC | SZ31468972 | SZ29929079 | 1.87 | Recharge | Class 1 | 5 - 10 | 1996 |
| 571/2759 | 1 | NEW FOREST DC | SZ29929079 | SZ29489113 | 0.54 | Embankment | Class 2 | > 10 | |
| 571/2759 | 2 | NEW FOREST DC | SZ29929079 | SZ29489113 | 0.55 | Revetment | Class 1 | > 10 | 1996 |
| 571/2760 | 1 | NEW FOREST DC | SZ29489113 | SZ29279121 | 0.23 | Wall | Class 2 | > 10 | 1964 |
| 571/2760 | 2 | NEW FOREST DC | SZ29489113 | SZ29279121 | 0.23 | Apron | Class 3 | > 10 | 1964 |
| 571/2760 | 3 | NEW FOREST DC | SZ29489113 | SZ29259122 | 0.25 | Groynes | Class 2 | > 10 | 1964 |
| 571/2761 | 1 | NEW FOREST DC | SZ29279121 | SZ29109129 | 0.18 | Wall | Class 3 | > 10 | 1960 |
| 571/2761 | 2 | NEW FOREST DC | SZ29279121 | SZ29109129 | 0.18 | Apron | Class 3 | > 10 | 1960 |
| 571/2761 | 3 | NEW FOREST DC | SZ29259122 | SZ29109129 | 0.16 | Groynes | Class 2 | > 10 | 1960 |
| 571/2762 | 1 | NEW FOREST DC | SZ29109129 | SZ28849138 | 0.28 | Wall | Class 3 | > 10 | 1960 |
| 571/2762 | 2 | NEW FOREST DC | SZ29099128 | SZ28849138 | 0.28 | Wall | Class 3 | > 10 | 1964 |
| 571/2762 | 3 | NEW FOREST DC | SZ29099128 | SZ28849138 | 0.28 | Groynes | Class 2 | 5 - 10 | 1960 |
| 571/2763 | 1 | NEW FOREST DC | SZ28849138 | SZ28769139 | 0.08 | Wall | Class 2 | > 10 | 1980 |
| 571/2763 | 2 | NEW FOREST DC | SZ28849138 | SZ28769139 | 0.08 | Groynes | Class 2 | 5 - 10 | 1970 |
| 571/2763 | 3 | NEW FOREST DC | SZ28849138 | SZ28769139 | 0.08 | Armour | Class 3 | > 10 | 1991 |

**Table A.1: Coastal Defences**

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 571/2764 | 1 | NEW FOREST DC | SZ28769139 | SZ28609146 | 0.17 | Wall | Class 3 | > 10 | 1960 |
| 571/2764 | 2 | NEW FOREST DC | SZ28769139 | SZ28609146 | 0.17 | Groynes | Class 2 | 5 - 10 | 1960 |
| 571/2765 | 1 | NEW FOREST DC | SZ28609146 | SZ27739178 | 0.92 | Cliff / Scarp | | | |
| 571/2765 | 2 | NEW FOREST DC | SZ28609146 | SZ27859170 | 0.78 | Wall | Class 2 | > 10 | 1970 |
| 571/2765 | 3 | NEW FOREST DC | SZ28609146 | SZ27859170 | 0.78 | Toe Piling | Class 2 | > 10 | 1970 |
| 571/2765 | 4 | NEW FOREST DC | SZ28609146 | SZ27859170 | 0.78 | Groynes | Class 3 | 5 - 10 | 1970 |
| 571/2765 | 5 | NEW FOREST DC | SZ28149160 | SZ27949167 | 0.21 | Armour | Class 2 | > 10 | 1970 |
| 571/2765 | 6 | NEW FOREST DC | SZ28379153 | SZ28199158 | 0.18 | Revetment | Class 1 | > 10 | 1995 |
| 571/2765 | 7 | NEW FOREST DC | SZ28199158 | SZ28089161 | 0.12 | Revetment | Class 1 | > 10 | 1996 |
| 571/2766 | 1 | NEW FOREST DC | SZ27739178 | SZ25359253 | 2.51 | Cliff / Scarp | | | |
| 571/2767 | 1 | NEW FOREST DC | SZ25359253 | SZ24939265 | 0.43 | Cliff / Scarp | | | |
| 571/2767 | 2 | SOUTHERN WATER | SZ25359253 | SZ25309254 | 0.03 | Armour | Class 3 | > 10 | 1980 |
| 571/2768 | 1 | NEW FOREST DC | SZ24939265 | SZ23089298 | 1.88 | Cliff / Scarp | | | |
| 571/2768 | 2 | NEW FOREST DC | SZ24939265 | SZ23089298 | 1.88 | Revetment | Class 1 | > 10 | 1990 |
| 571/2768 | 3 | NEW FOREST DC | SZ24939265 | SZ23089298 | 1.88 | Groynes | Class 1 | > 10 | 1977 |
| 571/2769 | 1 | NEW FOREST DC | SZ23089298 | SZ21799313 | 1.30 | Cliff / Scarp | | | |
| 681/2301 | 1 | SHELL BAY BOATYARD & CAFE | SZ03488648 | SZ03518650 | 0.03 | Revetment | Class 2 | 5 - 10 | 1980 |
| 681/2301 | 2 | SHELL BAY BOATYARD & CAFE | SZ03518650 | SZ03558651 | 0.03 | Revetment | Class 2 | > 10 | 1980 |
| 681/2301 | 3 | SHELL BAY BOATYARD & CAFE | SZ03518648 | SZ03558651 | 0.02 | Wall | Class 2 | > 10 | 1980 |
| 681/2302 | 1 | PURBECK DC | SZ03468042 | SZ03368024 | 0.24 | Groynes | Class 4 | < 5 | 1962 |
| 681/2302 | 2 | PURBECK DC | SZ03468042 | SZ03368024 | 0.24 | Cliff / Scarp | | | |
| 681/2303 | 1 | PURBECK DC | SZ03368024 | SZ03107965 | 0.60 | Wall | Class 4 | 5 - 10 | 1962 |
| 681/2303 | 2 | PURBECK DC | SZ03368024 | SZ03107965 | 0.60 | Groynes | Class 4 | 5 - 10 | 1962 |
| 681/2303 | 3 | PURBECK DC | SZ03368024 | SZ03107965 | 0.60 | Wall | Class 3 | > 10 | 1962 |
| 681/2303 | 4 | PURBECK DC | SZ03368024 | SZ03107965 | 0.60 | Toe Piling | Class 3 | 5 - 10 | 1962 |
| 681/2304 | 1 | PURBECK DC / DORSET CC | SZ03107965 | SZ03087914 | 0.50 | Wall | Class 2 | 5 - 10 | 1930 |
| 681/2304 | 2 | PURBECK DC | SZ03107965 | SZ03087914 | 0.50 | Groynes | Class 4 | 5 - 10 | 1930 |
| 681/2305 | 1 | WESSEX WATER | SZ03617864 | SZ03787865 | 0.17 | Wall | Class 3 | < 5 | 1950 |
| 681/2305 | 2 | PRIVATE | SZ03617864 | SZ03787865 | 0.17 | Wall | Class 3 | < 5 | 1980 |
| 681/2306 | 1 | WESSEX WATER | SZ03787865 | SZ03987865 | 0.20 | Wall | Class 3 | 5 - 10 | 1950 |

Table A.1: Coastal Defences

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 681/2307 | 1 | PURBECK DC | SZ03557818 | SZ03517812 | 0.06 | Revetment | Class 1 | > 10 | 1989 |
| 681/2307 | 2 | PURBECK DC | SZ03557818 | SZ03517812 | 0.06 | Gabions | Class 2 | > 10 | 1989 |
| 681/2401 | 1 | POOLE BC | SZ07138993 | SZ06028931 | 1.29 | Wall | Class 3 | > 10 | 1960 |
| 681/2401 | 2 | POOLE BC | SZ06028931 | SZ05928920 | 0.15 | Wall | Class 2 | > 10 | 1985 |
| 681/2401 | 3 | POOLE BC | SZ06028931 | SZ05928920 | 0.15 | Splash Wall | Class 2 | > 10 | 1985 |
| 681/2401 | 4 | POOLE BC | SZ07138993 | SZ05928920 | 1.44 | Groynes | Class 4 | < 5 | 1980 |
| 681/2402 | 1 | POOLE BC | SZ05928920 | SZ05818911 | 0.13 | Wall | Class 2 | > 10 | 1970 |
| 681/2402 | 2 | POOLE BC | SZ05928920 | SZ05818911 | 0.13 | Groynes | Class 4 | > 10 | 1980 |
| 681/2403 | 1 | POOLE BC | SZ05818911 | SZ05488882 | 0.44 | Recurved Wall | Class 2 | > 10 | 1970 |
| 681/2403 | 2 | POOLE BC | SZ05818911 | SZ05488882 | 0.44 | Groynes | Class 4 | < 5 | 1980 |
| 681/2404 | 1 | POOLE BC | SZ05488882 | SZ05378867 | 0.44 | Recurved Wall | Class 3 | > 10 | 1970 |
| 681/2404 | 2 | POOLE BC | SZ05488882 | SZ05378867 | 0.44 | Groynes | Class 4 | > 10 | 1970 |
| 681/2404 | 3 | POOLE BC | SZ05488882 | SZ05378882 | 0.44 | Splash Wall | Class 2 | > 10 | 1970 |
| 681/2405 | 1 | POOLE BC | SZ05378867 | SZ05058834 | 0.45 | Wall | Class 2 | > 10 | 1960 |
| 681/2405 | 2 | POOLE BC | SZ05378867 | SZ05058834 | 0.45 | Groynes | Class 2 | > 10 | 1980 |
| 681/2406 | 1 | PRIVATE | SZ05058834 | SZ04648787 | 0.63 | Revetment | Class 3 | 5 - 10 | 1960 |
| 681/2407 | 1 | POOLE BC | SZ04648787 | SZ04588779 | 0.10 | Revetment | Class 2 | > 10 | 1970 |
| 681/2407 | 2 | POOLE BC | SZ04588779 | SZ04468762 | 0.20 | Wall | Class 2 | > 10 | 1960 |
| 681/2407 | 3 | POOLE BC | SZ04468762 | SZ04358752 | 0.16 | Recurved Wall | Class 2 | > 10 | 1960 |
| 681/2408 | 1 | PRIVATE | SZ04358752 | SZ04268740 | 0.15 | Breastwork | Class 2 | > 10 | 1970 |
| 681/2408 | 2 | POOLE BC | SZ04358752 | SZ04268740 | 0.15 | Revetment | Class 1 | > 10 | 1996 |
| 681/2408 | 3 | POOLE BC | SZ04358752 | SZ04268740 | 0.15 | Groynes | Class 1 | > 10 | 1996 |
| 681/2409 | 2 | POOLE BC | SZ04268740 | SZ04208731 | 0.10 | Revetment | Class 1 | > 10 | 1996 |
| 681/2409 | 3 | POOLE BC | SZ04268740 | SZ04208731 | 0.10 | Groynes | Class 1 | > 10 | 1996 |
| 681/2410 | 1 | PRIVATE | SZ04208731 | SZ04118721 | 0.15 | Piling | Class 1 | > 10 | 1990 |
| 681/2410 | 3 | POOLE BC | SZ04208731 | SZ04118721 | 0.15 | Revetment | Class 1 | > 10 | 1996 |
| 681/2410 | 4 | POOLE BC | SZ04208731 | SZ04118721 | 0.15 | Groynes | Class 1 | > 10 | 1996 |
| 681/2411 | 1 | POOLE BC | SZ04118721 | SZ04078718 | 0.10 | Wall | Class 1 | > 10 | 1990 |
| 681/2411 | 3 | POOLE BC | SZ04118721 | SZ04078718 | 0.10 | Revetment | Class 1 | > 10 | 1996 |
| 681/2411 | 4 | POOLE BC | SZ04118721 | SZ04078718 | 0.10 | Groynes | Class 1 | > 10 | 1996 |

**Table A.1: Coastal Defences**

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 681/2412 | 1 | PRIVATE | SZ04078718 | SZ04038715 | 0.05 | Wall | Class 2 | > 10 | 1970 |
| 681/2412 | 2 | PRIVATE | SZ04038715 | SZ03978712 | 0.07 | Piling | Class 4 | < 5 | 1960 |
| 681/2412 | 3 | PRIVATE | SZ04038715 | SZ03978712 | 0.07 | Wall | Class 3 | > 10 | 1960 |
| 681/2412 | 4 | PRIVATE | SZ03978712 | SZ03908707 | 0.08 | Wall | Class 3 | > 10 | 1970 |
| 681/2412 | 5 | PRIVATE | SZ03978712 | SZ03938710 | 0.04 | Toe Piling | Class 2 | > 10 | 1980 |
| 681/2412 | 6 | PRIVATE | SZ03978712 | SZ03938710 | 0.04 | Wall | Class 2 | > 10 | 1980 |
| 681/2412 | 7 | POOLE BC | SZ04078718 | SZ03908707 | 0.20 | Recharge | Class 2 | 5 - 10 | 1992 |
| 681/2412 | 8 | PRIVATE | SZ03978712 | SZ03908707 | 0.08 | Armour | Class 2 | > 10 | 1970 |
| 681/2412 | 9 | POOLE BC | SZ04078718 | SZ03908707 | 0.20 | Revetment | Class 1 | > 10 | 1996 |
| 681/2412 | 10 | POOLE BC | SZ04078718 | SZ03908707 | 0.20 | Groynes | Class 1 | > 10 | 1996 |
| 681/2413 | 1 | PRIVATE | SZ03908707 | SZ03768702 | 0.21 | Recurved Wall | Class 1 | > 10 | 1990 |
| 681/2413 | 2 | PRIVATE | SZ03908707 | SZ03768702 | 0.21 | Toe Piling | Class 1 | > 10 | 1990 |
| 681/2413 | 3 | PRIVATE | SZ03908707 | SZ03768702 | 0.21 | Revetment | Class 1 | > 10 | 1990 |
| 681/2413 | 4 | PRIVATE | SZ03908707 | SZ03768702 | 0.21 | Groynes | Class 1 | > 10 | 1990 |
| 681/2414 | 1 | POOLE BC | SZ03768702 | SZ03738704 | 0.04 | Wall | Class 3 | > 10 | 1960 |
| 681/2414 | 2 | POOLE BC | SZ03768702 | SZ03738704 | 0.04 | Toe Piling | Class 2 | > 10 | 1960 |
| 681/2415 | 1 | PRIVATE | SZ03738704 | SZ04308769 | 1.42 | Wall | Class 4 | < 5 | 1960 |
| 681/2416 | 1 | POOLE BC | SZ04308769 | SZ04908830 | 0.90 | Wall | Class 2 | 5 - 10 | 1982 |
| 681/2417 | 1 | POOLE BC | SZ04908830 | SZ04258910 | 1.25 | Wall | Class 2 | < 5 | 1950 |
| 681/2417 | 2 | POOLE BC | SZ04288904 | SZ04278906 | 0.15 | Groynes | Class 3 | 5 - 10 | 1950 |
| 681/2418 | 1 | POOLE BC | SZ04258910 | SZ04038933 | 0.32 | Gabions | Class 4 | < 5 | 1975 |
| 681/2419 | 1 | PRIVATE | SZ04038933 | SZ03788967 | 0.45 | Wall | Class 3 | < 5 | 1960 |
| 681/2420 | 1 | PRIVATE | SZ03518936 | SZ03568968 | 0.39 | Breakwater | Class 1 | > 10 | 1986 |
| 681/2420 | 2 | PRIVATE | SZ03548956 | SZ03578963 | 0.10 | Revetment | Class 1 | > 10 | 1986 |
| 681/2421 | 1 | POOLE HC | SZ03568968 | SZ03338989 | 0.28 | Wall | Class 4 | < 5 | 1930 |
| 681/2422 | 1 | PRIVATE | SZ03338989 | SZ03109038 | 0.88 | Wall | Class 2 | > 10 | 1960 |
| 681/2422 | 2 | PRIVATE | SZ03049014 | SZ02899027 | 0.40 | Breakwater | Class 1 | > 10 | 1996 |
| 681/2423 | 1 | POOLE BC | SZ03219044 | SZ03069066 | 0.27 | Revetment | Class 3 | > 10 | 1970 |
| 681/2423 | 2 | POOLE BC | SZ03219044 | SZ03169066 | 0.27 | Wall | Class 2 | > 10 | 1970 |
| 681/2424 | 1 | POOLE BC | SZ03069066 | SZ02109016 | 1.21 | Revetment | Class 4 | < 5 | 1970 |

Table A.1: Coastal Defences

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 681/2425 | 1 | POOLE BC | SZ01869018 | SZ01719023 | 0.16 | Revetment | Class 1 | > 10 | 1980 |
| 681/2426 | 1 | NRA | SZ01719023 | SZ01589025 | 0.13 | Revetment | Class 2 | > 10 | 1980 |
| 681/2427 | 1 | POOLE HC | SZ01589017 | SZ01369020 | 0.26 | Breakwater | Class 4 | < 5 | 1920 |
| 681/2428 | 1 | PRIVATE | SZ01509026 | SZ01369023 | 0.15 | Wall | Class 1 | > 10 | 1990 |
| 681/2429 | 1 | POOLE HC | SZ01369023 | SZ00809027 | 0.57 | Wall | Class 2 | > 10 | 1960 |
| 681/2429 | 2 | POOLE HC | SZ01239023 | SZ01059025 | 0.19 | Piling | Class 1 | > 10 | 1980 |
| 681/2430 | 1 | POOLE HC | SZ00809027 | SZ00659035 | 0.19 | Wall | Class 3 | 5 - 10 | 1950 |
| 681/2431 | 1 | POOLE HC | SZ00659035 | SZ00849095 | 0.75 | Piling | Class 3 | 5 - 10 | 1970 |
| 681/2432 | 1 | PRIVATE | SZ00849095 | SZ01209106 | 0.45 | Revetment | Class 2 | > 10 | 1980 |
| 681/2433 | 1 | POOLE BC | SZ01209106 | SZ01229110 | 0.05 | Wall | Class 2 | > 10 | 1970 |
| 681/2434 | 1 | POOLE BC | SZ01229110 | SZ00509280 | 2.10 | Revetment | Class 1 | > 10 | 1986 |
| 681/2435 | 1 | BR | SZ00659222 | SY99329211 | 1.35 | Revetment | Class 2 | > 10 | 1970 |
| 681/2435 | 2 | BR | SZ00659222 | SY99329211 | 1.35 | Embankment | Class 2 | > 10 | 1900 |
| 681/2436 | 1 | PRIVATE | SZ00559070 | SZ00599029 | 0.50 | Wall | Class 2 | > 10 | 1960 |
| 681/2437 | 1 | POOLE HC | SZ00599029 | SZ01009017 | 0.50 | Piling | Class 3 | 5 - 10 | 1944 |
| 681/2437 | 2 | POOLE HC | SZ01009017 | SZ01078993 | 0.26 | Piling | Class 2 | > 10 | 1929 |
| 681/2437 | 3 | POOLE HC | SZ01078993 | SZ00938977 | 0.32 | Piling | Class 2 | > 10 | 1972 |
| 681/2437 | 4 | POOLE HC | SZ00938977 | SZ00748973 | 0.23 | Piling | Class 2 | > 10 | 1984 |
| 681/2437 | 5 | POOLE HC | SZ00748973 | SZ00568974 | 0.20 | Piling | Class 1 | > 10 | 1988 |
| 681/2438 | 1 | POOLE HC | SZ00568974 | SZ00129006 | 0.41 | Breakwater | Class 2 | > 10 | 1983 |
| 681/2438 | 2 | POOLE HC | SZ00129006 | SZ00139013 | 0.16 | Revetment | Class 2 | > 10 | 1983 |
| 681/2439 | 1 | PRIVATE | SZ00139013 | SY99939011 | 0.21 | Beach Ridge | | | |
| 681/2440 | 1 | POOLE BC | SY99939011 | SY99359008 | 0.61 | Wall | Class 4 | < 5 | 1960 |
| 681/2440 | 2 | POOLE BC | SY99939011 | SY99359008 | 0.61 | Groynes | Class 2 | > 10 | 1970 |
| 681/2441 | 1 | PRIVATE | SY99359008 | SY98419044 | 1.03 | Wall | Class 2 | > 10 | 1970 |
| 681/2442 | 1 | POOLE BC | SY98379044 | SY98319047 | 0.09 | Gabions | Class 2 | < 5 | 1980 |
| 681/2443 | 1 | POOLE BC | SY97669074 | SY97539081 | 0.15 | Gabions | Class 4 | < 5 | 1980 |
| 681/2443 | 2 | POOLE BC | SY97539081 | SY97319098 | 0.28 | Gabions | Class 4 | < 5 | 1980 |
| 681/2444 | 1 | PRIVATE | SZ03788967 | SZ03528938 | 0.41 | Breakwater | Class 1 | > 10 | 1986 |
| 681/2501 | 1 | BOURNEMOUTH BC | SZ16959096 | SZ17109092 | 0.16 | Gabions | Class 2 | > 10 | 1987 |

**Table A.1: Coastal Defences**

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 681/2502 | 1 | CHRISTCHURCH BC | SZ18149096 | SZ18219102 | 0.08 | Armour | Class 1 | > 10 | 1990 |
| 681/2502 | 2 | CHRISTCHURCH BC | SZ18149096 | SZ18259135 | 0.38 | Bank | | 5 - 10 | 1900 |
| 681/2503 | 1 | CHRISTCHURCH BC | SZ18379135 | SZ18329114 | 0.22 | Revetment | Class 2 | 5 - 10 | 1980 |
| 681/2503 | 2 | CHRISTCHURCH BC | SZ18379135 | SZ18329114 | 0.22 | Groynes | Class 2 | > 10 | 1980 |
| 681/2504 | 1 | CHRISTCHURCH BC | SZ18329114 | SZ18189091 | 0.27 | Wall | Class 2 | > 10 | 1960 |
| 681/2504 | 2 | CHRISTCHURCH BC | SZ18329114 | SZ18189091 | 0.27 | Splash Wall | Class 2 | > 10 | 1960 |
| 681/2504 | 3 | CHRISTCHURCH BC | SZ18329114 | SZ18189091 | 0.27 | Toe Piling | Class 2 | > 10 | 1960 |
| 681/2504 | 4 | CHRISTCHURCH BC | SZ18329114 | SZ18189091 | 0.27 | Recharge | Class 2 | > 10 | 1990 |
| 681/2504 | 5 | CHRISTCHURCH BC | SZ18329114 | SZ18189091 | 0.27 | Groynes | Class 1 | > 10 | 1990 |
| 681/2505 | 1 | CHRISTCHURCH BC | SZ18189091 | SZ18069060 | 0.34 | Revetment | Class 3 | < 5 | 1965 |
| 681/2505 | 2 | CHRISTCHURCH BC | SZ18189091 | SZ18069060 | 0.34 | Groynes | Class 3 | < 5 | 1965 |
| 681/2505 | 3 | CHRISTCHURCH BC | SZ18189091 | SZ18189091 | 0.06 | Armour | Class 1 | > 10 | 1990 |
| 681/2506 | 1 | BOURNEMOUTH BC | SZ18069060 | SZ17829039 | 0.36 | Revetment | Class 1 | > 10 | 1987 |
| 681/2506 | 2 | BOURNEMOUTH BC | SZ18069060 | SZ17829039 | 0.36 | Groynes | Class 1 | > 10 | 1987 |
| 681/2506 | 3 | BOURNEMOUTH BC | SZ18069060 | SZ17829039 | 0.36 | Groynes | Class 1 | > 10 | 1965 |
| 681/2506 | 4 | BOURNEMOUTH BC | SZ18069060 | SZ18069060 | 0.04 | Armour | Class 2 | > 10 | 1991 |
| 681/2506 | 5 | BOURNEMOUTH BC | SZ18079059 | SZ18079059 | 0.02 | Groynes | Class 1 | > 10 | 1991 |
| 681/2506 | 6 | BOURNEMOUTH BC | SZ18069060 | SZ18009049 | 0.13 | Gabions | Class 2 | > 10 | 1987 |
| 681/2507 | 1 | BOURNEMOUTH BC | SZ17829039 | SZ17839019 | 0.20 | Groynes | Class 2 | > 10 | 1938 |
| 681/2507 | 2 | BOURNEMOUTH BC | SZ17829039 | SZ17839019 | 0.20 | Armour | Class 2 | > 10 | 1987 |
| 681/2508 | 1 | BOURNEMOUTH BC | SZ17829039 | SZ16509077 | 1.46 | Beach Ridge | | | |
| 681/2508 | 2 | BOURNEMOUTH BC | SZ17829039 | SZ16509077 | 1.46 | Cliff / Scarp | | | |
| 681/2509 | 1 | BOURNEMOUTH BC | SZ16509077 | SZ16129085 | 0.37 | Groynes | Class 2 | > 10 | 1987 |
| 681/2509 | 2 | BOURNEMOUTH BC | SZ16519076 | SZ16319081 | 0.21 | Gabions | Class 2 | > 10 | 1987 |
| 681/2509 | 3 | BOURNEMOUTH BC | SZ16509077 | SZ16129083 | 0.37 | Recharge | Class 2 | 5 - 10 | 1988 |
| 681/2510 | 1 | BOURNEMOUTH BC | SZ15959090 | SZ15769093 | 0.19 | Groynes | Class 2 | 5 - 10 | 1987 |
| 681/2510 | 2 | BOURNEMOUTH BC | SZ15389097 | SZ15569097 | 0.02 | Groynes | Class 2 | 5 - 10 | 1976 |
| 681/2510 | 3 | BOURNEMOUTH BC | SZ16129085 | SZ15329099 | 0.81 | Recharge | Class 2 | 5 - 10 | 1988 |
| 681/2510 | 4 | BOURNEMOUTH BC | SZ15769094 | SZ15679095 | 0.10 | Gabions | Class 2 | 5 - 10 | 1987 |
| 681/2511 | 1 | BOURNEMOUTH BC | SZ15329099 | SZ14919105 | 0.41 | Revetment | Class 2 | > 10 | 1958 |

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 681/2511 | 2 | BOURNEMOUTH BC | SZ14919105 | SZ14179120 | 0.51 | Revetment | Class 2 | > 10 | 1975 |
| 681/2511 | 3 | BOURNEMOUTH BC | SZ14179120 | SZ13759124 | 0.73 | Revetment | Class 2 | > 10 | 1958 |
| 681/2511 | 4 | BOURNEMOUTH BC | SZ13759124 | SZ12989127 | 0.74 | Revetment | Class 2 | > 10 | 1935 |
| 681/2511 | 5 | BOURNEMOUTH BC | SZ12989127 | SZ12029124 | 0.97 | Revetment | Class 2 | > 10 | 1932 |
| 681/2511 | 6 | BOURNEMOUTH BC | SZ12029124 | SZ11179114 | 0.84 | Revetment | Class 2 | > 10 | 1927 |
| 681/2511 | 7 | BOURNEMOUTH BC | SZ15329099 | SZ11159114 | 4.20 | Groynes | Class 2 | 5 - 10 | 1980 |
| 681/2511 | 8 | BOURNEMOUTH BC | SZ15329099 | SZ11159114 | 4.20 | Recharge | Class 2 | 5 - 10 | 1989 |
| 681/2511 | 9 | BOURNEMOUTH BC | SZ15329099 | SZ11159114 | 4.20 | Splash Wall | Class 2 | > 10 | 1930 |
| 681/2511 | 10 | BOURNEMOUTH BC | SZ11179114 | SZ11199096 | 0.18 | Groynes | Class 4 | < 5 | 1930 |
| 681/2511 | 11 | BOURNEMOUTH BC | SZ12029124 | SZ11159114 | 0.07 | Wall | Class 2 | > 10 | 1927 |
| 681/2512 | 1 | BOURNEMOUTH BC | SZ11159114 | SZ09659091 | 1.58 | Revetment | Class 2 | > 10 | 1911 |
| 681/2512 | 2 | BOURNEMOUTH BC | SZ09659091 | SZ08909077 | 0.80 | Revetment | Class 2 | > 10 | 1907 |
| 681/2512 | 3 | BOURNEMOUTH BC | SZ09659091 | SZ09909096 | 0.55 | Toe Piling | Class 2 | > 10 | 1972 |
| 681/2512 | 4 | BOURNEMOUTH BC | SZ11159114 | SZ08859067 | 2.49 | Groynes | Class 2 | > 10 | 1980 |
| 681/2512 | 5 | BOURNEMOUTH BC | SZ11159114 | SZ08859067 | 2.49 | Groynes | Class 2 | > 10 | 1970 |
| 681/2512 | 6 | BOURNEMOUTH BC | SZ11159114 | SZ08859067 | 2.49 | Splash Wall | Class 2 | > 10 | 1970 |
| 681/2512 | 7 | BOURNEMOUTH BC | SZ11159114 | SZ08859067 | 2.49 | Recharge | Class 2 | 5 - 10 | 1989 |
| 681/2512 | 8 | BOURNE STREAM CULVERT | SZ08909067 | SZ08979068 | 0.30 | Groynes | Class 3 | > 10 | 1972 |
| 681/2512 | 9 | BOURNEMOUTH BC | SZ08959067 | SZ08889067 | 0.11 | Wall | Class 2 | > 10 | 1930 |
| 681/2513 | 1 | BOURNEMOUTH BC | SZ08959067 | SZ08509057 | 0.40 | Revetment | Class 2 | > 10 | 1909 |
| 681/2513 | 2 | BOURNEMOUTH BC | SZ08509057 | SZ07969039 | 0.57 | Revetment | Class 2 | > 10 | 1929 |
| 681/2513 | 3 | BOURNEMOUTH BC | SZ07969039 | SZ07529019 | 0.49 | Revetment | Class 2 | > 10 | 1930 |
| 681/2513 | 4 | BOURNEMOUTH BC | SZ07529019 | SZ07289008 | 0.26 | Revetment | Class 2 | > 10 | 1909 |
| 681/2513 | 5 | BOURNEMOUTH BC | SZ07289006 | SZ07138993 | 0.20 | Revetment | Class 2 | > 10 | 1957 |
| 681/2513 | 6 | BOURNEMOUTH BC | SZ07279008 | SZ07138993 | 0.20 | Recurved Wall | Class 2 | > 10 | 1957 |
| 681/2513 | 7 | BOURNEMOUTH BC | SZ08859067 | SZ07138993 | 1.91 | Groynes | Class 2 | 5 - 10 | 1980 |
| 681/2513 | 8 | BOURNEMOUTH BC | SZ08859067 | SZ07138993 | 1.91 | Splash Wall | Class 1 | > 10 | 1957 |
| 681/2513 | 9 | BOURNEMOUTH BC | SZ08859067 | SZ07138993 | 1.91 | Recharge | Class 3 | 5 - 10 | 1989 |
| 681/2601 | 1 | CHRISTCHURCH BC | SZ21839313 | SZ21819312 | 0.07 | Breakwater | Class 1 | > 10 | 1991 |
| 681/2601 | 2 | CHRISTCHURCH BC | SZ21839313 | SZ21819312 | 0.03 | Recharge | Class 1 | > 10 | 1993 |

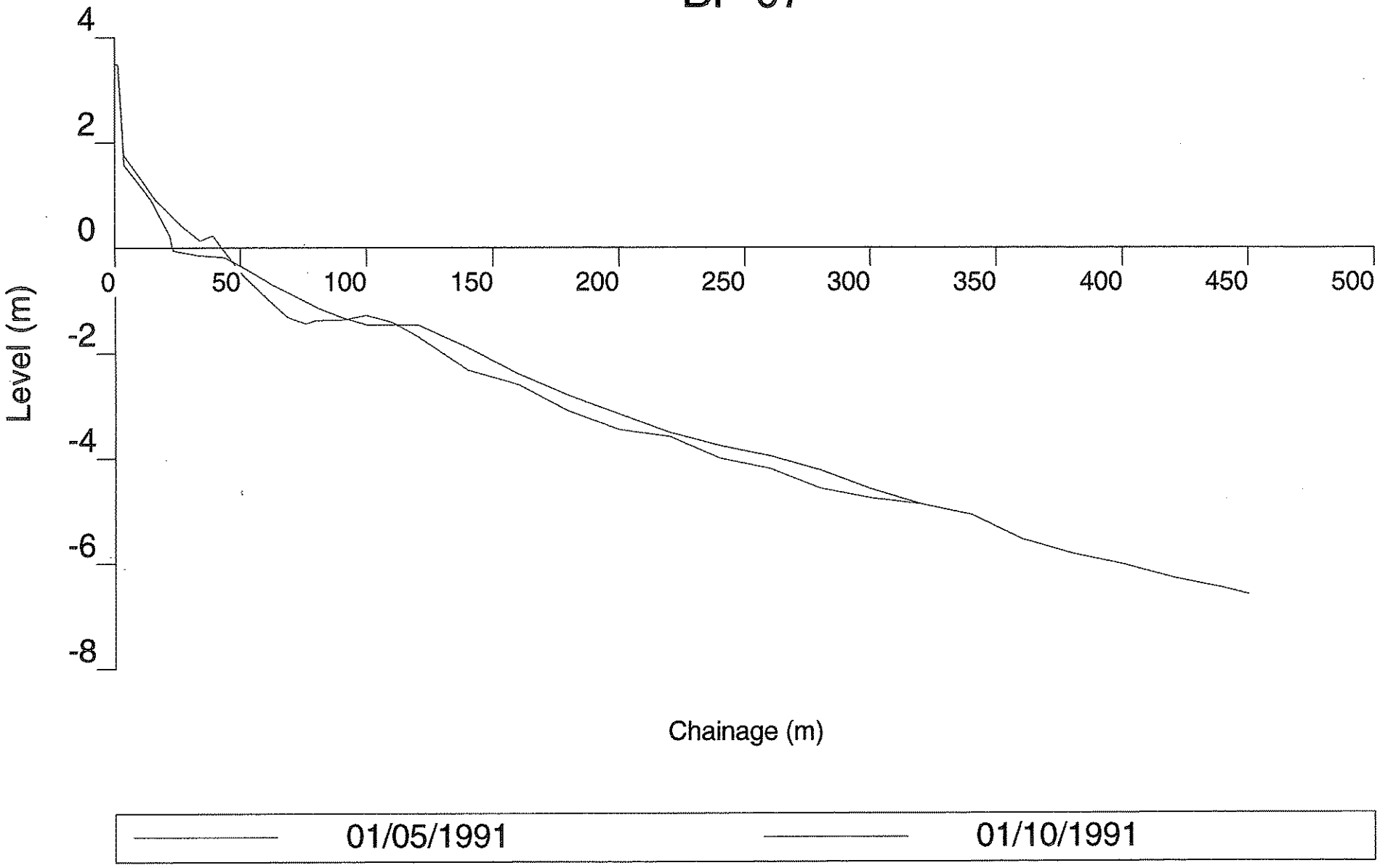
**Table A.1: Coastal Defences**

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 681/2602 | 1 | CHRISTCHURCH BC | SZ21819312 | SZ20489301 | 1.35 | Revetment | Class 2 | > 10 | 1968 |
| 681/2602 | 2 | CHRISTCHURCH BC | SZ21819312 | SZ20489301 | 1.35 | Toe Piling | Class 3 | > 10 | 1968 |
| 681/2602 | 3 | CHRISTCHURCH BC | SZ21819312 | SZ20489301 | 1.35 | Groynes | Class 2 | > 10 | 1992 |
| 681/2602 | 4 | CHRISTCHURCH BC | SZ21819312 | SZ20489301 | 1.35 | Recharge | Class 3 | 5 - 10 | 1992 |
| 681/2602 | 5 | CHRISTCHURCH BC | SZ21819312 | SZ20489301 | | Wall | Class 2 | > 10 | 1970 |
| 681/2603 | 1 | CHRISTCHURCH BC | SZ19919290 | SZ19819286 | 0.10 | Revetment | Class 3 | > 10 | 1989 |
| 681/2603 | 2 | CHRISTCHURCH BC | SZ19919290 | SZ19819286 | 0.10 | Recharge | Class 3 | > 10 | 1989 |
| 681/2604 | 1 | CHRISTCHURCH BC | SZ19819286 | SZ19479273 | 0.31 | Recurved Wall | Class 2 | > 10 | 1960 |
| 681/2604 | 2 | CHRISTCHURCH BC | SZ19819286 | SZ19479273 | 0.31 | Toe Piling | Class 3 | 5 - 10 | 1960 |
| 681/2604 | 3 | CHRISTCHURCH BC | SZ19819286 | SZ19479273 | 0.31 | Groynes | Class 4 | 5 - 10 | 1900 |
| 681/2605 | 1 | CHRISTCHURCH BC | SZ19479273 | SZ19169252 | 0.38 | Revetment | Class 3 | 5 - 10 | 1960 |
| 681/2605 | 2 | CHRISTCHURCH BC | SZ19479273 | SZ19169252 | 0.38 | Groynes | Class 2 | > 10 | 1979 |
| 681/2605 | 3 | CHRISTCHURCH BC | SZ19479273 | SZ19169252 | 0.38 | Toe Piling | Class 2 | > 10 | 1979 |
| 681/2605 | 4 | CHRISTCHURCH BC | SZ19479273 | SZ19169252 | 0.38 | Revetment | Class 2 | > 10 | 1979 |
| 681/2606 | 1 | CHRISTCHURCH BC | SZ19169252 | SZ18909224 | 0.38 | Wall | Class 2 | > 10 | 1960 |
| 681/2606 | 2 | CHRISTCHURCH BC | SZ19169252 | SZ18909224 | 0.38 | Groynes | Class 2 | > 10 | 1984 |
| 681/2606 | 3 | CHRISTCHURCH BC | SZ19169252 | SZ19049243 | 0.14 | Wall | Class 2 | > 10 | 1960 |
| 681/2606 | 4 | CHRISTCHURCH BC | SZ19049243 | SZ18909224 | 0.24 | Splash Wall | Class 2 | > 10 | 1960 |
| 681/2607 | 1 | CHRISTCHURCH BC | SZ18909224 | SZ18799207 | 0.21 | Wall | Class 2 | > 10 | 1960 |
| 681/2607 | 2 | CHRISTCHURCH BC | SZ18909224 | SZ18799207 | 0.21 | Groynes | Class 2 | > 10 | 1988 |
| 681/2607 | 3 | CHRISTCHURCH BC | SZ18909224 | SZ18799207 | 0.21 | Recharge | Class 2 | > 10 | 1988 |
| 681/2608 | 1 | CHRISTCHURCH BC | SZ18799207 | SZ18549182 | 0.38 | Wall | Class 2 | > 10 | 1978 |
| 681/2608 | 2 | CHRISTCHURCH BC | SZ18799207 | SZ18549182 | 0.38 | Toe Piling | Class 2 | > 10 | 1978 |
| 681/2608 | 3 | CHRISTCHURCH BC | SZ18799207 | SZ18549182 | 0.38 | Groynes | Class 2 | > 10 | 1978 |
| 681/2608 | 4 | CHRISTCHURCH BC | SZ18799207 | SZ18549182 | 0.38 | Splash Wall | Class 2 | > 10 | 1978 |
| 681/2608 | 5 | CHRISTCHURCH BC | SZ18799207 | SZ18549182 | 0.38 | Apron | Class 2 | > 10 | 1978 |
| 681/2609 | 1 | CHRISTCHURCH BC | SZ18549182 | SZ18409157 | 0.40 | Piling | Class 1 | > 10 | 1996 |
| 681/2609 | 2 | CHRISTCHURCH BC | SZ18409167 | SZ18389164 | 0.03 | Piling | Class 1 | > 10 | 1996 |
| 681/2609 | 3 | CHRISTCHURCH BC | SZ18389164 | SZ18379163 | 0.02 | Piling | Class 1 | > 10 | 1996 |
| 681/2609 | 4 | CHRISTCHURCH BC | SZ18379163 | SZ18319158 | 0.08 | Piling | Class 1 | > 10 | 1996 |

| Defence Code | Sub Code | Ownership/ Responsibility | Grid Ref Start Coords | Grid Ref End Coords | Defence Length (km) | Structure Type | Condition | Residual Life | Year Built |
|---|---|---|---|---|---|---|---|---|---|
| 681/2609 | 5 | CHRISTCHURCH BC | SZ18319158 | SZ18279163 | 0.07 | Piling | Class 1 | > 10 | 1996 |
| 681/2609 | 6 | CHRISTCHURCH BC | SZ18279163 | SZ18289164 | 0.02 | Piling | Class 1 | > 10 | 1996 |
| 681/2609 | 7 | CHRISTCHURCH BC | SZ18289158 | SZ18289157 | 0.01 | Groynes | Class 1 | > 10 | 1996 |
| 681/2610 | 1 | CHRISTCHURCH BC | SZ18269135 | SZ18389150 | 0.27 | Bank | | | |
| 681/2611 | 1 | CHRISTCHURCH BC | SZ18389150 | SZ18379135 | 0.19 | Revetment | Class 2 | > 10 | 1980 |
| 681/2611 | 2 | CHRISTCHURCH BC | SZ18389150 | SZ18379150 | 0.19 | Groynes | Class 2 | > 10 | 1980 |
| 681/2612 | 1 | CHRISTCHURCH BC | SZ18289147 | SZ18389150 | 0.20 | Beach Ridge | | | |

# Appendix B

# BP 07


4
2
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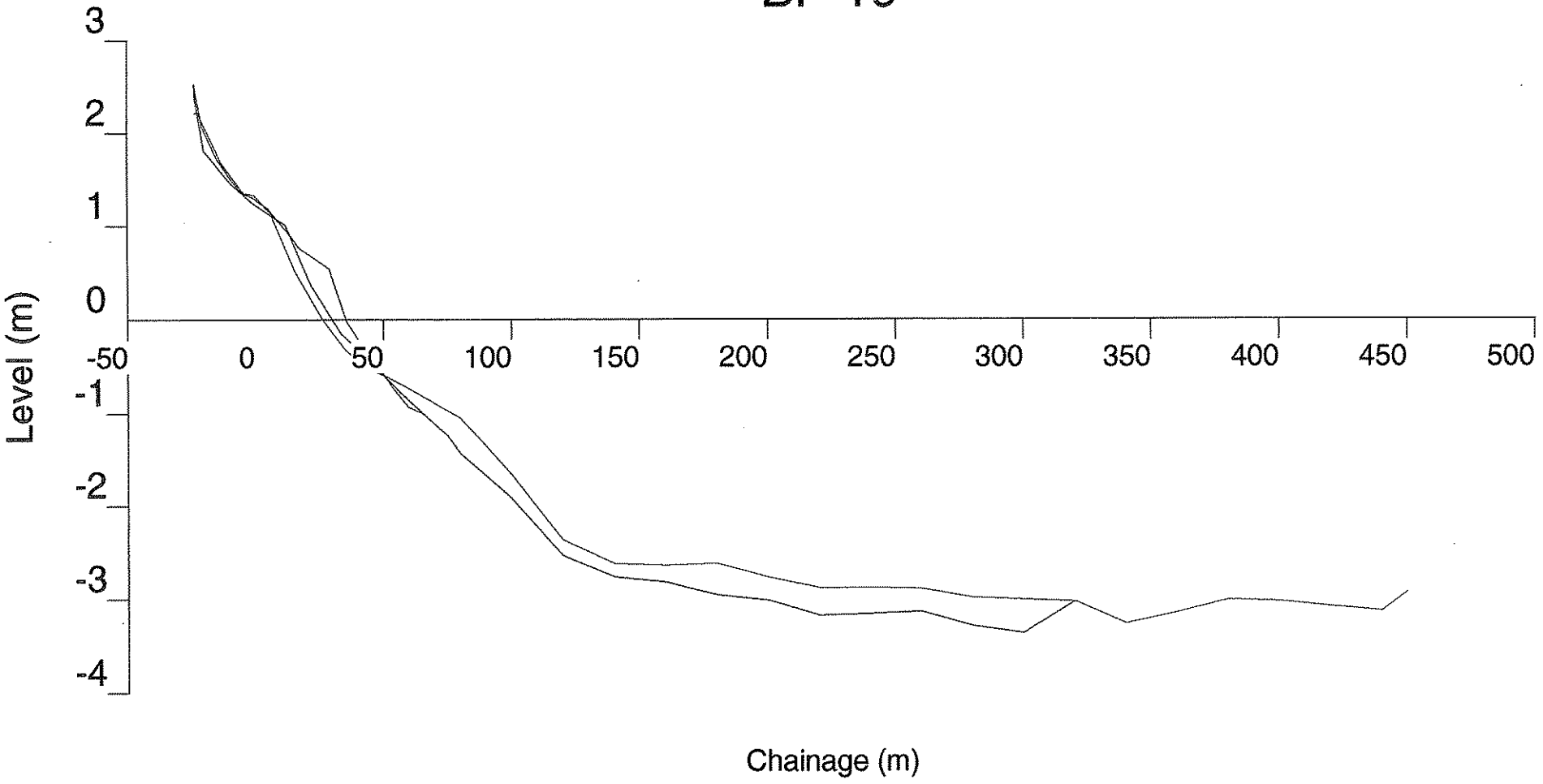
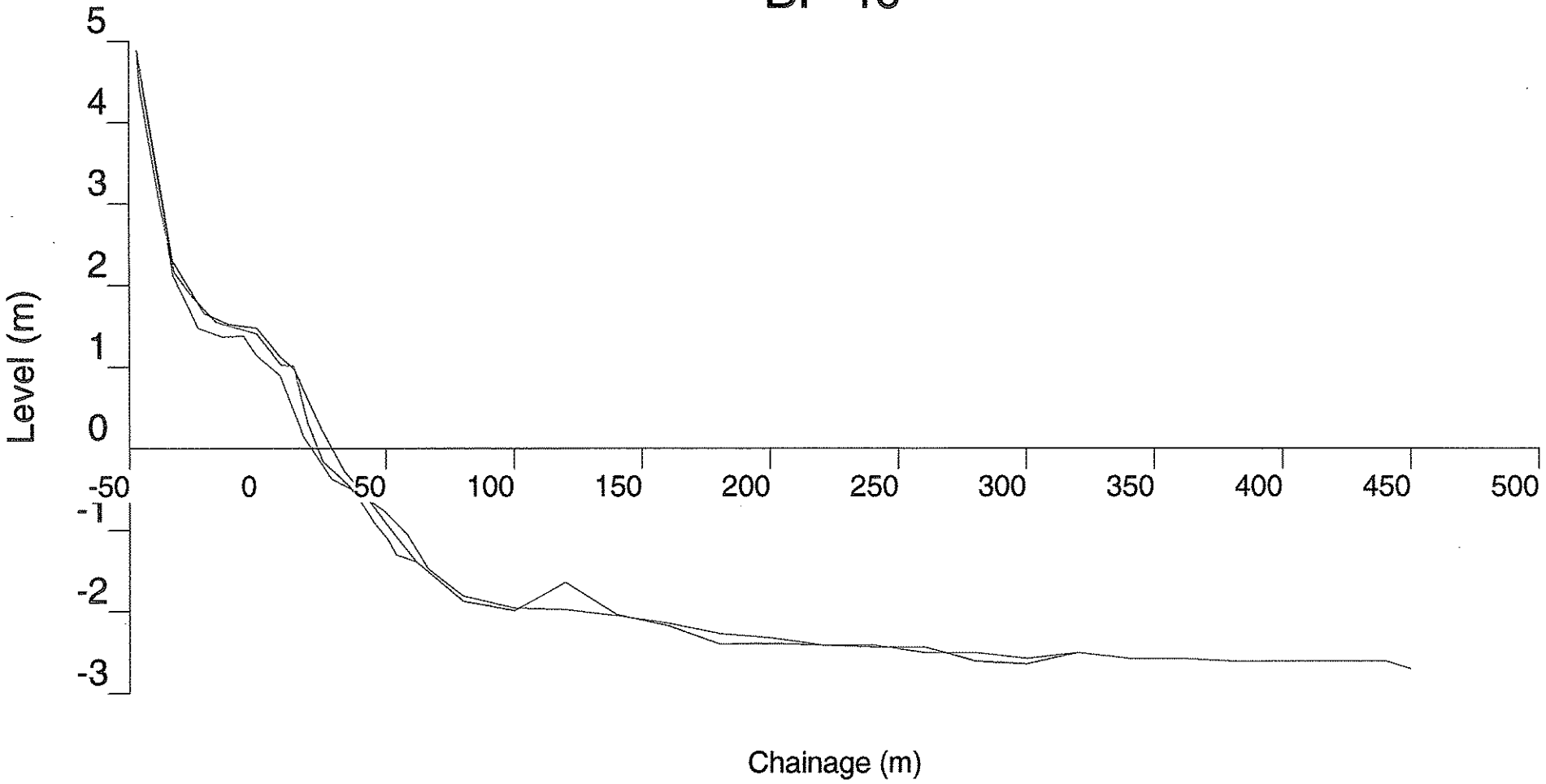
-2
-4
-6
-8
0
50
100
150
200
250
300
350
400
450
500
Level (m)
Chainage (m)
01/05/1991
01/10/1991

# BP 19


3
2
1
0
-1
-2
-3
-4
-50
0
50
100
150
200
250
300
350
400
450
500
Level (m)
Chainage (m)
01/07/1990
01/05/1991
01/10/1991

# BP 40


Level (m)
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4
3
2
1
0
-1
-2
-3
-50
0
50
100
150
200
250
300
350
400
450
500
Chainage (m)
01/07/1990
01/05/1991
01/10/1991