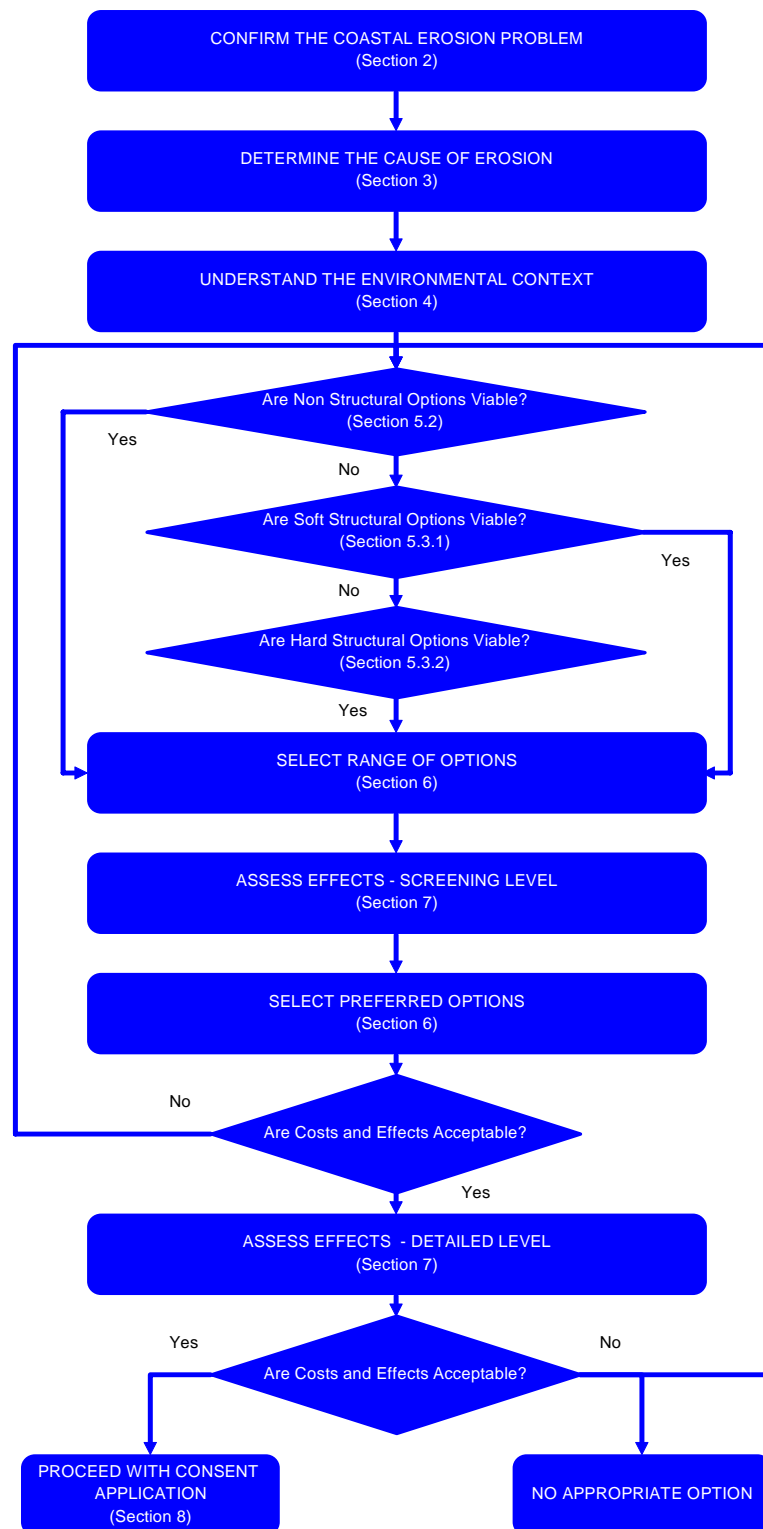


COASTAL EROSION MANAGEMENT MANUAL



SECTION 1 - INTRODUCTION

EXPECTED OUTCOME OF THIS SECTION

To understand the need for this manual and how to use it.

COASTAL EROSION MANAGEMENT MANUAL

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1. INTRODUCTION

The management of coastal erosion can be controversial and complex, with conflicts of interest related to the high public and private values which exist in the coastal environment. Historically risk to coastal development or private property has typically been managed by attempts to modify natural coastal processes and coastline behaviour - particularly with the use of coastline armouring devices. While in some situations such solutions are appropriate and sustainable responses to the coastal erosion hazard there are many situations where they are not, and more effective and sustainable means or methods need to be found.

This Manual presents information and advice to assist users of the Auckland coastal environment understand the nature of the coastal erosion hazard and to understand the potential environmental effects of implementing a particular coastal erosion management response. Use of the manual will aid in the selection of the appropriate management option for any particular site.

1.1 WHY MANAGE COASTAL EROSION?

The coast is an important component in most Aucklanders' lives. It has a range of recreational, economic, conservation and heritage values. Integrated and sustainable management of the coastal environment is required if the steady growth of the Auckland region is not to adversely affect those values, or allow assets to be or become compromised.

1.2 COASTAL EROSION MANAGEMENT

1.2.1 AVAILABLE OPTIONS

There are a variety of options that may be employed for coastal erosion management. Those which have been employed in the Auckland Region and which are discussed in this manual include:

- **non-structural options:** planning techniques which aim to manage activities in the coastal environment so as to avoid the hazard of coastal erosion;
- **soft structural options:** works which aim to re-establish or maintain the natural coastal environment, subsequently reducing the coastal erosion risk to land use and development; and
- **hard structural options:** structures which alter or influence coastal processes, consequently reducing or halting the rate of coastal erosion and reducing the risk to land use and development.

Structural works often provide a socially and economically acceptable means of reducing the risk of coastal erosion to existing properties, nevertheless they may have a number of adverse effects on the coastal environment. Therefore non-structural options are generally preferred to structural options, and within the range of structural options soft-structural options are preferred over hard-structural options. It is emphasised however, that the exercise is to first determine whether an erosion problem exists, and then determine what is the most appropriate way of managing that situation. It may be that neither a structural or non-structural option is appropriate, and that the best option is to let the position of the coastline to naturally fluctuate.

1.2.2 COASTAL EROSION MANAGEMENT PHILOSOPHY

The main principles or philosophy for coastal erosion management in the Auckland Region are to, wherever possible:

- confirm coastal erosion as a problem before implementing a coastal erosion management option;
- identify the cause of coastal erosion and ensure that any management option addresses this cause;
- accommodate coastal processes rather than try to prevent their effect;
- develop sites so that a coastal erosion hazard is avoided;
- ensure existing development is carefully designed in or withdrawn from hazardous sites, in an equitable manner, so that the coastal erosion hazard is minimised or avoided;
- recognise changes due to human intervention which have caused coastal erosion and rectify them (i.e. revert to the natural situation);
- conserve and enhance the natural character of the coast;
- recognise there is some uncertainty regarding the environmental processes operating on the coast, and that a conservative approach should be taken in assessing the likely or possible impacts of remedying or mitigating coastal erosion management activities and the consequences of doing nothing;

And to recognise that

- structures in the coastal environment have a limited life; and
- no coastal erosion management solution is completely maintenance free.

1.2.3 LEGISLATIVE CONTEXT

1.2.3.1 RESOURCE MANAGEMENT ACT

Refer Section D,
Statutory
Framework

There are several statutory documents that guide management of the coastal environment. In order of hierarchy these are the Resource Management Act (RMA), the New Zealand Coastal Policy Statement, the Regional Policy Statements, Regional Coastal Plans, and District Plans.

The RMA provides the legislative context and overarching guiding principles for coastal erosion management. To achieve the purpose of the RMA - *to promote the sustainable management of natural and physical resources* - in relation to the coastal environment the Minister of Conservation issued the New Zealand Coastal Policy Statement.

The Auckland Regional Policy Statement (RPS), the Proposed Regional Plan: Coastal (PRP:C), and the various district plans establish the framework for erosion management decisions at the city/district and regional level through the setting of objectives, policies and methods, and rules.

The PRP:C requires that a coastal permit be required for most, if not all, coastal erosion management works carried out in the Auckland Coastal Marine Area.

1.2.4 ASSESSMENT PROCESS FOR COASTAL EROSION MANAGEMENT

The suggested approach for assessing any coastal erosion management issue is illustrated in Figure 1.1. This flowchart also provides the structure for this manual.

1.3 THIS MANUAL

1.3.1 CONTENTS OF THIS MANUAL

This manual brings together the contemporary knowledge of coastal erosion management relevant to the Auckland Region. Part 1 expands on the coastal erosion management philosophy and process as illustrated in Figure 1.1. It introduces the issues to be considered in coastal erosion management and outlines the approach to take in selecting an appropriate management option. Part 2 provides further details of the issues, identifies data sources and indicates appropriate references for design purposes. The linkage between Part 1 and Part 2 is illustrated in Figure 1.2. Specific references to Part 2 sections are also highlighted throughout Part 1 in the margins.

*Figure 1.1
The Coastal Erosion
Management
Process*

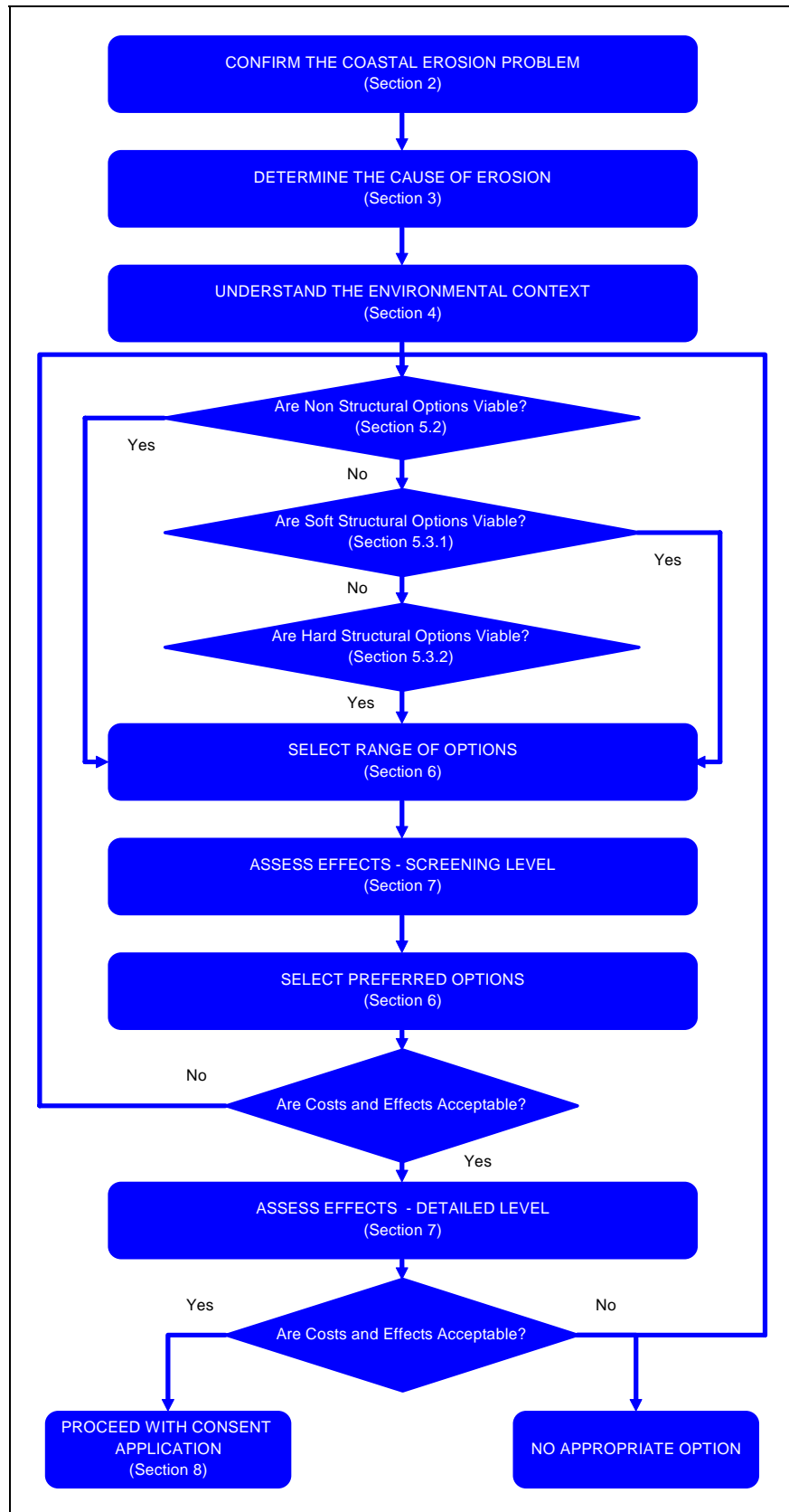
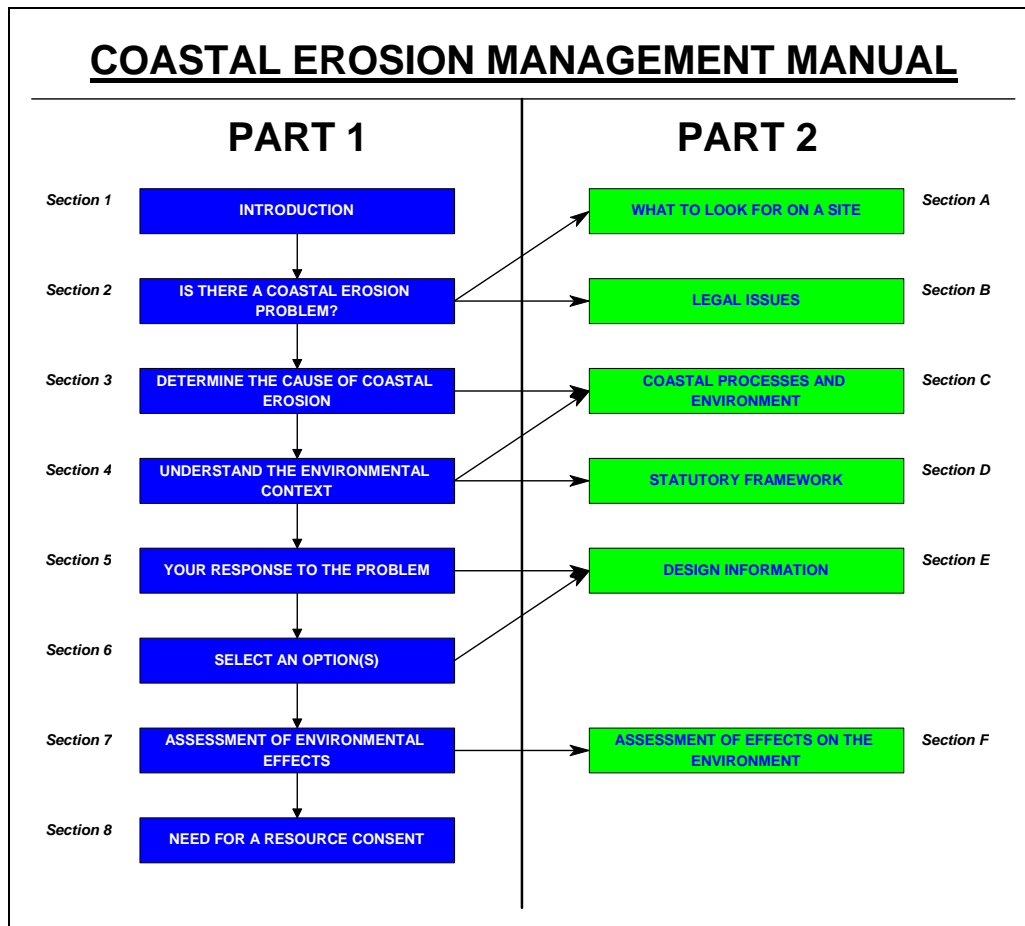


Figure 1.2
Structure of the
Manual



The manual should be considered as a 'living' document, to be updated as legislation is amended and as knowledge of coastal processes, the environment and design improves. The contents of each section of the manual are as follows:

PART 1

- 1. Introduction
- 2. Is There a Coastal Erosion Problem? Focuses on determining whether or not coastal erosion is a problem.
- 3. Determine the Cause of Coastal Erosion Provides guidance on how to determine the cause of an erosion problem.
- 4. Understand the Environmental Context Provides guidance on understanding the environmental context of a site, and the relative importance of natural, social and physical processes.
- 5. Your Response to the Problem Discusses the various options available for coastal erosion management.

- | | |
|---|---|
| 6. Select an Option(s) | Provides guidance on how to select an appropriate coastal erosion management option for a site. |
| 7. Assessment of Environmental Effects | Discusses what effects should be considered and how this should be assessed. |
| 8. Need For a Resource Consent | Provides guidance on when a consent is required for coastal erosion management and how to apply for them. |

PART 2

- | | |
|--|---|
| A. What to Look for on a Site | Provides a checklist which can be used in the field for identifying a coastal erosion problem, the cause of the coastal erosion and developing the environmental context of a site. |
| B. Legal and Indemnity Issues | Briefly discusses some legal issues relevant to coastal erosion management and provides guidance on how to deal with them. |
| C. Coastal Processes and Environment | Provides details of coastal process, including process theories, means of quantifying them and their characteristics in the Auckland Region. |
| D. Statutory Framework | Describes in more detail the legal and policy framework within which coastal erosion management must be implemented. |
| E. Design Information | Provides technical information in relation to design methods, materials, construction, maintenance and costs for structural options. |
| F. Assessment of Effects on the Environment | Outlines suitable references which can be used in the preparation of an Assessment of Environmental Effects (AEE) to ensure that all necessary aspects are covered. |

1.3.2 CONTEXT OF THIS MANUAL

The primary reason for the development of the CEMM is the resource consent process. Though it is not a statutory document it will provide guidance for the ARC when it assesses resource consent applications.

With such a large part of the region being coastal, and with intense use of the coastal environment by Aucklanders it is important that this valuable resource is managed in an integrated and sustainable manner for present and future generations. In this regard the CEMM is closely related to the *Coastal Hazard Strategy for the Auckland Region* (ARC, 2000) which is aimed at promoting the avoidance of coastal hazards. The relationship between these and other ARC coastal management programmes, and the statutory context is illustrated in Figure 1.3.

Figure 1.3
Context of the
Manual

