

SECTION 12.0

MANAGEMENT UNIT 7: MAPPLETON

12.1 Summary Information

12.1.1 Location

Management Unit 7 is situated some 3km south of Hornsea. It comprises a 0.5km section of predominantly urban frontage. The limits of the unit are defined by rural-urban land use change.

12.1.2 Coastal Processes

The construction of two rock groynes and a rock revetment has halted erosion between the groynes and reduced erosion rates to the north and within the lee of the terminal structures either side of the groynes. A substantial beach has accumulated within and updrift of the defences.

12.1.3 Coastal Defences

Two shore-connected rock groynes and a rock revetment were constructed in 1991 with a 50 year design life to provide protection to the village of Mappleton. The total length defended covers a frontage of some 500m.

The coastal topography of the Management Unit is such that there is no risk of tidal inundation.

12.1.3 Land-Use, Human and Built Environment

The village of Mappleton, comprises some 50 properties. The B1242 coast road, which provides the only access into and out of the village, is located at its closest point, approximately 60m from the cliff top. Other land-use within the unit is primarily agricultural. Beach activities, including fishing, are the main recreational activities at Mappleton. Nearshore waters are used by fishing vessels.

12.1.5 Natural Environment

The foreshore fronting Management Unit 7 comprises a boulder clay wave cut platform covered by a layer of sand and some shingle. There are no sites of designated nature conservation importance within this Management Unit.

12.1.6 Policies

The policies of the former Holderness Borough Council and Humberside County Council continue to apply to Mappleton. These will be replaced in due course by new policies of the forthcoming development plans to be prepared by East Riding of Yorkshire Council. Mappleton is also within the area covered by the policies of the Local Environment Agency Plan.

12.1.7 Issues

The main issue in Management Unit 7 is the conflict between defending the properties in the village and maintaining sediment transport along the unit frontage.

12.1.8 Specific Objectives

Building on the objectives discussed in Section 4.4 of this document, the following unit-specific objectives are identified for Management Unit 7:-

- To provide an appropriate level of protection to the village
- To ensure that sediment movement along the frontage is not restricted beyond that required to sustain the existing defences and that downdrift effects of coastal defence works are minimised.

12.2 Results of Economic Appraisal

The preliminary economic appraisal carried out in order to establish the economic viability of carrying out coast protection works to the frontage of Management Unit 7 demonstrated that the assets at risk from erosion include various residential properties and, at some time in the future, the B1242 coast road. The potential economic damages which would be incurred if the existing coast protection works were to fail outweigh the likely costs of the works required to hold the current line of defence. The do nothing option cannot therefore be justified in economic terms as there is sufficient economic justification for adopting the hold the line option.

The economic analysis carried out demonstrated that there is insufficient economic benefit, in coast protection terms, to justify active intervention to advance the current line of defence. This assessment has been carried out based on the assumption that advancing the line would be achieved via the construction of an offshore breakwater.

The analysis carried out to establish the economic viability of adopting the retreat the line option has demonstrated that significant economic losses would be experienced if such a policy were to be adopted at the present time. The retreat the line option does not, therefore, currently represent an economically viable option.

The economic analysis is carried out of the unit is shown in Appendix 1.

12.3 Discussion of Policy Options

The objectives are set out in full in Section 4.0 and the evaluation process is described in Section 5.0.

12.3.1 Do Nothing

The do nothing option would be compatible with the preferred options for adjacent units. It would also be sustainable. Do nothing does not, however, meet the objective of providing continued protection to the village of Mappleton, and it does not meet all of the environmental objectives.

For these reasons, the do nothing option is rejected as an option.

12.3.2 Retreat the Line

There is uncertainty over the likely effects of the retreat the line in Management Unit 7 and it is not clear therefore whether or not the objectives in respect of natural process or human and built environment would be met. Should this option be pursued, further work would therefore be needed. However, it should also be noted that the option is not economically viable and it does not meet the unit-specific objective of providing protection to the village.

The retreat the line option is therefore rejected.

12.3.3 Hold the Line

The hold the line option meets or partly meets many of the management objectives for this unit, including providing continued protection to the village. It is technically and economically viable, and compatible with the preferred options for adjacent units. It meets the objective of compatibility with the processes operating in so far as the line is already held at this point, but it is not compatible with the general tendency of the Holderness coast to erode. Similarly, as the frontage is defended, sediment movement along the coast is inevitably interrupted. It is questionable, therefore, as to whether the option is sustainable.

The option is potentially viable for the unit.

12.3.4 Advance the Line

Although protection would be afforded to the village, the advance the line option is not economically viable and it is not sustainable. Further, the option is not compatible with the processes operating within the cell and it does not meet the natural environment objective.

The advance the line option is therefore rejected.

12.4 Preferred Option

The currently preferred strategic coastal defence option for Management Unit 7 is to hold the line.

It is, however, acknowledged that this option is likely to become increasingly incompatible with the natural processes operating. The hold the line option will therefore need to be periodically reviewed With regard to its continuing sustainability. Continued monitoring will also be required (see below).

12.4.1 Mitigation and Monitoring Requirements

Continued monitoring of cliff retreat will be essential, and monitoring of beach levels along the Mappleton frontage and adjacent areas may also be useful, if the potential effects of the defences are to be properly understood, and if future reviews of the SMP are to be adequately informed. Depending on the results of such monitoring, it may be appropriate to consider mitigation measures such as sediment bypassing.

It may be necessary to review the viability of maintaining the defences. It would therefore be prudent, in the meantime, to use the planning system to ensure that future coastal defence options are fully considered when any planning applications in the area which is potentially subject to erosion are being assessed.

See also Table 3.0, Monitoring Recommendations, Section 25.3.

MANAGEMENT UNIT 7: MAPPLETON

STRATEGIC OPTION	GENERAL MANAGEMENT OBJECTIVES							UNIT SPECIFIC OBJECTIVES					
	Common to all Management Units							Defined Below					
	Technically Realistic	Economically Viable	Environmentally Acceptable: Human & Built Environment (See Supporting Matrix Below)	Environmentally Acceptable: Natural Environment (See Supporting Matrix Below)	Compatibility with Processes at Work within Sediment Cell	Compatibility with Preferred Options for Adjacent Management Units	Overall Sustainability	Protect Urban Area and Economic Activities	Maintain Sediment Movement (Where Practicable)	(Not Used)	(Not Used)	(Not Used)	(Not Used)
Do Nothing	✓	(4)	x✓	x	✓	✓	✓	x	✓				
Retreat (1)	x✓	x	✓	x	?	✓	x	x	?				
Hold the Line	✓	✓	✓	✓	x	✓	x	✓	x✓				
Advance (2)	✓	x	✓	x	x	✓	x	✓	x				

Notes:

- ✓ Yes - complies with management objective
- x No - conflicts with management objective
- x✓ Meets the objective in some respects but not in others
- ? Insufficient data to assess situation
- (1) Defined as: active intervention to retreat from existing coastline (i.e. other than by natural erosion)
- (2) Defined as: active intervention to advance from existing coastline (i.e. other than by natural accretion)
- (3) Other than tourism, recreation and agriculture
- (4) Least cost option (see Section 4.2.2)
- N/A Not applicable

SUPPORTING MATRIX

STRATEGIC OPTION	MANAGEMENT OBJECTIVES FOR THE STUDY COASTLINE													
	Land Use and the Human and Built Environment							Natural Environment						
	Coastal Defence	Agriculture	Fisheries	Tourism and Recreation	Archaeology	Military Use	Offshore Activity	Industry/Economic Activity (3)	Navigation	Biology	Geology	Natural Processes	Landscape	Water Quality
Do Nothing	x	x	✓	x	?	N/A	✓	x	✓	x✓	N/A	✓	x	x
Retreat (1)	x✓	x✓	✓	✓	?	N/A	✓	?	✓	x✓	N/A	x	x	✓
Hold the Line	✓	✓	✓	✓	?	N/A	✓	✓	✓	x✓	N/A	x	✓	✓
Advance (2)	✓	✓	x	✓	?	N/A	✓	✓	x	x✓	N/A	x	x	✓

NB. Reference should be made to Section 5.0 which explains in detail the procedure used for completing the matrices