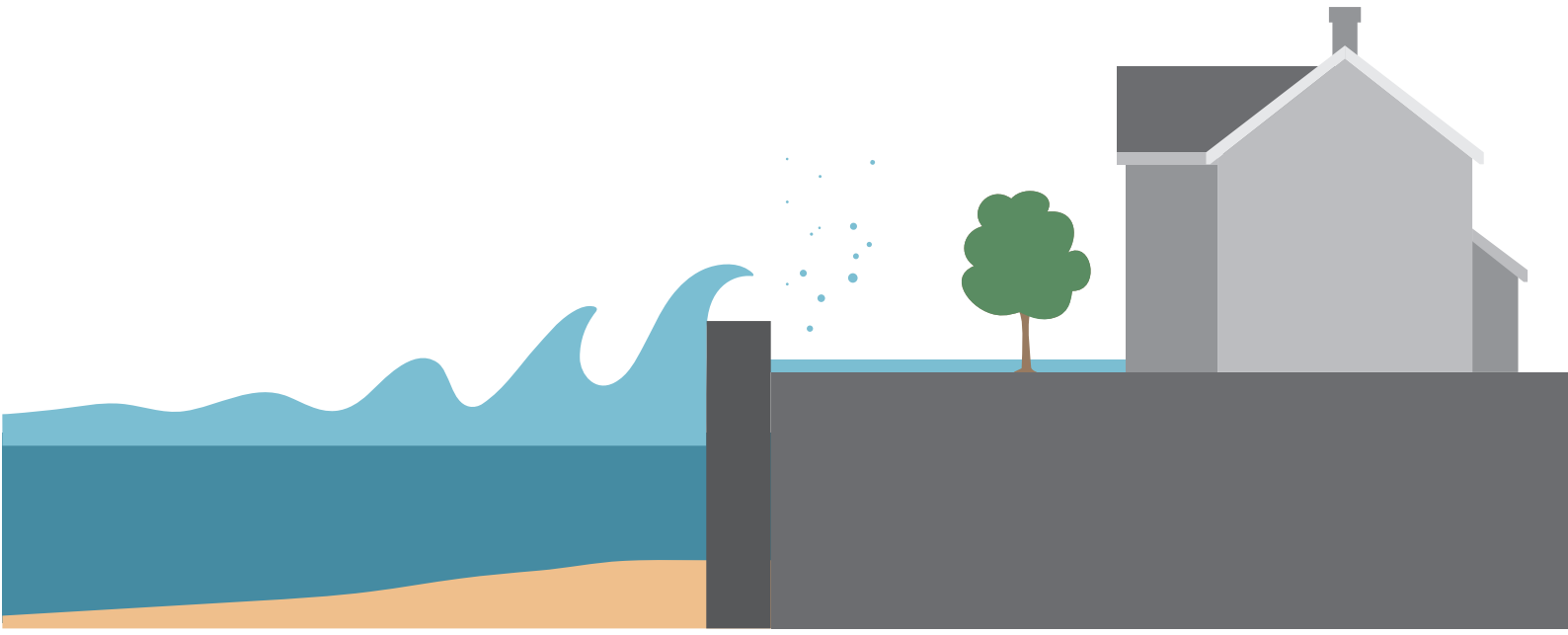
Jersey Shoreline Management Plan

January 2020

Summary



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Summary

This summary is a description of the Jersey Shoreline Management Plan (SMP). It provides recommendations for the future management of the coastline. The SMP has been finalised following three months of consultation between July and September 2019. The draft SMP was available on the Government of Jersey's webpage for public comment. Feedback was given by questionnaire, email and in person during community roadshow events. The feedback was generally positive, with 85% of respondents supporting the management policies. In total 419 individuals attended the roadshow events and 82 comments were received.

Introduction

The Jersey SMP details the management intent for the Island's coastline over the next 100 years (up to 2120). The aim is to prevent and manage the effects of coastal erosion and flooding. The impact of climate change on rising sea levels over time has been assessed. The plan considers risks to the community, environment and economy of Jersey. It takes into account the coastal defences that are around the Island. It looks at how they might need to be improved to provide better protection where needed. There are three time periods, which are called epochs:

- Present day (2020-2040);
- Medium Term (2040-2070); and
- Long Term (2070-2120).

There is a management option for each time period. The option is the best one for the shoreline, nearby communities and infrastructure. This makes it easier for the Government of Jersey to plan how to put improvements in place.

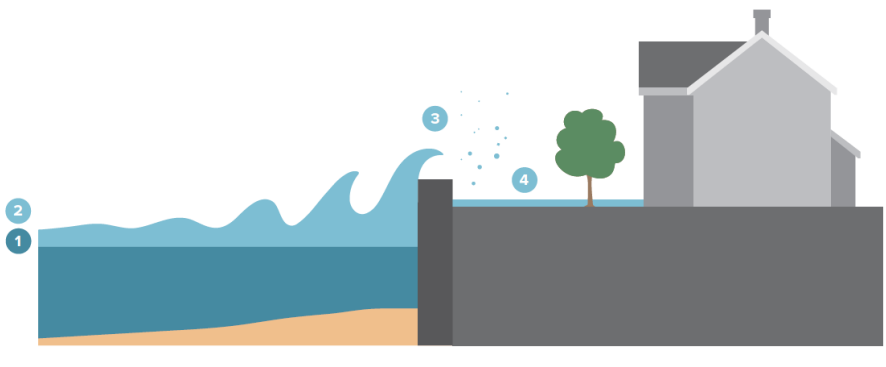
The option can change in the future in light of new scientific research. It can also change if there are changes in Island politics and legislation. The aim is to protect the shoreline from coastal flooding to a 1:200 year return period event. This is a storm event which is predicted to occur, on average, once every 200 years. Construction will depend on the cost of defences and feedback from stakeholder engagement. All defences will be designed so that they can be adapted in the future. This means they will protect against higher intensity storm events if necessary. We will review the risks will every 10 years to ensure an appropriate level of protection.

Assessing flood and coastal change

The risk of coastal erosion and flooding has been assessed for the next 100 years using hydraulic modelling, historic maps and beach surveys. This shows the areas of the coastline which are likely to flood and where erosion is likely to occur. Appendix B provides further information about the hydraulic modelling and explains historic erosion and changes in beach level.

Flood risk

Coastal flood risk comes from still water levels and wave overtopping as shown below. Island-wide flood maps show areas at risk of flooding. The future impact of climate change on flood risk was assessed using the UK National Oceanography Centre guidance. The 50th percentile results for the IPCC 'RCP8.5' climate change emission scenario ("business as usual") have been used. This gives a resulting sea level rise prediction of 0.83 metres by 2120.



1. **Still Water level** – the level of water if all wave and wind action were to cease
2. **Storm surge** – a rising of the sea level as a result of wind and atmospheric pressure changes associated with a storm
3. **Wave overtopping** – where a wave exceeds the height of a coastal defence
4. **Flooding** – the coverage or submerging of normally dry land with a large amount of water

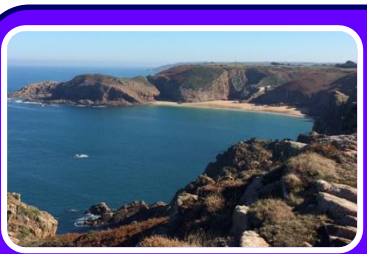
Coastal erosion risk

Coastal erosion risk was assessed by looking at aerial photographs between 2003 and 2017. An annual average rate of erosion of 0.3 metres per year was observed between 2003 and 2017 at Portelet. This was used to project a future erosion buffer zone around the coastline. This was only applied to areas of soft geology where there are no coastal defences, which would be less resistant to coastal erosion. A future erosion buffer zone of 30 metres over the next 100 years was applied in specific, soft geology areas. The erosion buffer identifies areas of the coastline with assets that have the potential to be at risk in the future.

Beach surveys were analysed to check for significant changes in beach levels. This is important because lower beach levels may increase the rate of coastal erosion and could lead to damage to coastal defences. Details of coastal erosion and beach change is in Appendix B.

Policy options

Four policy options were considered to manage flooding and coastal erosion risks. Each policy option has advantages and disadvantages depending on the area of coastline. See Section 3.1 for further detail about each policy option.



No Active Intervention (NAI)

A policy decision to not invest in coastal defences or maintenance work. The shoreline will be left to naturally evolve without intervention. This policy will generally be applied to natural areas of the coastline which are currently undefended.

Where this policy is applied, there will be no changes to the coastline.

Maintain the Defence Line (MTDL)

Existing coastal defences are maintained. The level of flood protection may decrease in some locations over time due to climate change resulting in sea level rise. This policy will generally be applied where the existing defences currently provide a reasonable standard of flood protection or prevent erosion of the shoreline.

Where this policy is applied, existing defences will be maintained only.

Adaptive Management (AM)

A policy to proactively manage and mitigate coastal flood or erosion risk. The policy will be delivered through various management schemes / initiatives depending on the level of risk and the circumstances. This could include improving the standard of flood protection for an existing sea defence, constructing new defences, raising awareness of flood risk to local communities or recommending flood protection for individual properties.

Where this policy is applied, the risk will be considered, and defence schemes will be designed to suit local circumstances. This policy will, therefore, look different for each part of the coastline where it is applied.

Advance the Line (ATL)

New sea defences are built seaward of existing defences. This policy will only be implemented in areas where there is currently a significant risk of coastal flooding or erosion, or where it will deliver additional benefits for the community, environment and economy, such as creating a new amenity space.

Where this policy is applied, localised areas of defences will be built a distance seaward of those existing structures. This policy will look different for each part of the coastline where it is applied, because the distance seaward may vary.

Appraisal of policy options

Policy options were selected for the coastline in the three time periods up to 2120. The policy selection followed a policy option appraisal process. The relative merits of each policy were considered. This included the impacts on existing structures, the community and the environment. An assessment of the economic costs and benefits of each option took place.

Coastal Management Areas & Coastal Management Units

To assess the best option for the different parts of the coastline, the coastline was divided into smaller units. The coastline was divided into six Coastal Management Areas (CMAs). Each CMA has similar risks of flooding, coastal erosion and levels of development (see Table 2-3 for the characteristics of each CMA). These CMAs were further subdivided into 36 Coastal Management Units (CMUs). The policy options were set at the CMU level so that the management intent is appropriate at a local scale.

The coastal management units were defined by various factors. These included coastal processes, flood and erosion risk, land ownership and cultural and environmental designations. See Section 2.5.2 for the full list of information that was used to define the CMU boundaries.

Policy option assessment

Each of the policy options was considered for each CMU. The merits were assessed against 21 objectives. The objectives compliment the objectives of the SMP, and align with the Common Strategic Policy and the Island Plan. The 21 objectives were split into four themes of defence, community, environment and economy. See Section 3.2 for further details on each of these themes.

The policy options were scored against the objectives for each CMU. This provides an indication of whether the policy would result in a positive or negative impact. The scores for each of the objectives were added together, and the policy option with the highest overall score selected.

An example of the scoring process is provided in Section 3.2. The assessment criteria for each objective (as well as the scoring for each CMU) is provided in Appendix C.

Economic assessment

The economic costs and benefits of each policy option were assessed. This was to understand which options would be practical and achieve a net positive change for the local area. An initial damage assessment was calculated. This shows the potential cost of flooding and coastal erosion damages over the next 100 years. It assumes that the Government of Jersey will continue to maintain the existing defences.

The calculation of the benefits was based on the damages that would be avoided by implementing the policy options . For example, raising the height of the defence to prevent flooding damages. The cost of building and maintaining defences as part of the management plan was calculated to provide a benefit-cost ratio. The total cost was estimated at £198 million over 100 years. The total benefits of £2.6 billion and the ratio of benefits to the costs being 5.54. This means that the benefits are 5 times greater than the costs. More detail of the economic assessment is provided in Section 3.3, and the full economic assessment comprises Appendix D.

Summary of final policies

The proposed policies for each CMU during each time period are shown below. For more detail on the implications of the policies on each CMU, please see Sections 4-9. A more detailed summary and map are provided in Section 10.

KEY:

NAI: No Active Intervention
MTDL: Maintain the Defence Line
AM: Adaptive Management
ATL: Advance the Line

Coastal Management Unit (CMU)		Preferred Policy Option			Subject to flooding	Subject to erosion
		Present day 2020-2040	Medium term 2040-2070	Long term 2070-2120		
1.1	Noirmont Common	NAI	NAI	NAI	✗	✓
1.2	Belcroute Bay	MTDL	MTDL	MTDL	✗	✓
1.3	La Housse	NAI	NAI	NAI	✗	✓
1.4	St Aubin's Harbour	AM	AM / ATL	MTDL	✓	✗
1.5	St Aubin's Bay	AM	AM / ATL	MTDL	✓	✗
1.6	St Helier	MTDL	AM	MTDL	✓	✗
1.7	La Collette	MTDL	MTDL	MTDL	✗	✗
1.8	Havre des Pas	AM / ATL	MTDL	MTDL	✓	✗
1.9	La Greve d'Azette	AM	AM	MTDL	✓	✓
1.10	Le Hocq / Pontac	AM	AM	MTDL	✓	✓
2.1	Royal Bay of Grouville	AM	AM	MTDL	✓	✗
2.2	Gorey Harbour	MTDL	AM	MTDL	✓	✓
3.1	La Route de la Cote	MTDL	MTDL	MTDL	✓	✓
3.2	Archirondel Tower	AM	MTDL	MTDL	✓	✗
3.3	St Catherine's Bay	MTDL	MTDL	MTDL	✓	✗
3.4	La Coupe	MTDL	MTDL	MTDL	✗	✓
4.1	La Coupe to Rozel Bay	NAI	NAI	NAI	✗	✗
4.2	Rozel Bay	MTDL	MTDL	MTDL	✓	✗
4.3	Le Catel	NAI	NAI	NAI	✗	✗
4.4	Bouley Bay	MTDL	MTDL	MTDL	✓	✗
4.5	Egypt	NAI	NAI	NAI	✗	✓
4.6	Bonne Nuit	MTDL	MTDL	MTDL	✓	✓
4.7	La Perruque	NAI	NAI	NAI	✗	✗
4.8	Ronez Quarry	NAI	NAI	NAI	✗	✗
4.9	Crabbé	NAI	NAI	NAI	✗	✗
4.10	Greve de Lecq	MTDL	MTDL	MTDL	✓	✗
4.11	Plemont	NAI	NAI	NAI	✗	✗
5.1	St Ouen's Bay	MTDL	MTDL	MTDL	✓	✗
5.2	Petit Port	MTDL	MTDL	MTDL	✗	✗
6.1	Gorselands	NAI	NAI	NAI	✗	✓
6.2	Les Creux	NAI	NAI	NAI	✗	✓
6.3	St Brelade's Bay	AM	AM	MTDL	✓	✓
6.4	Ouaisne Bay	MTDL	MTDL	MTDL	✓	✗
6.5	La Cotte de St Brelade	NAI	NAI	NAI	✗	✓
6.6	Portelet Common	NAI	NAI	NAI	✗	✓
6.7	Portelet Beach	NAI	NAI	NAI	✗	✓

Next Steps

The recommended actions to implement the SMP are listed in Section 11. These actions include specific tasks. They include further coastal monitoring and a more detailed economic assessment. The proposed policies will be implemented in epoch 1 in the relevant CMUs, as follows:

- *No Active Intervention*: no change to the coastline in these areas;
- *Maintain the Defence Line*: there will be no change to the coastline. Defences will continue to receive regular and emergency maintenance;
- *Adaptive Management / Advance the Line*: a detailed design and stakeholder engagement programme will be developed in 2020. Defence schemes will be constructed by 2040.

The SMP and policies will be reviewed in 10 year cycles; the next review of the SMP is expected in 2029.