Background Evidence document for the coastal risk policies in the Island Planning Strategy:

This document contains the background evidence for 4 policies as follows: -

1) EV16 - Managing Our Coast
2) EV17 - Facilitating Relocation from Coastal Change Management Areas
3) EV18 - Improving Resilience to Coastal Flooding and Coastal Risks
4) EV19 - Managing Ground Stability in New Development

It also includes a list of the erosion rates which are to be used in Vulnerability Assessments for any planning applications made within the Coastal Change Management Area (CCMA).

EV16 – MANAGING OUR COAST & EV17 – FACILITATING RELOCATION FROM COASTAL CHANGE MANAGEMENT AREAS

Explaining the issues faced

Paragraphs 176-179 of the National Planning Policy Framework (NPPF, December 2023) requires councils to identify coastal change management areas (CCMAs), in any area likely to be affected by physical changes to the coast. Where necessary:

> *'177. Plans should reduce risk from coastal change by avoiding inappropriate development in vulnerable areas and not exacerbating the impacts of physical changes to the coast. They should identify as a Coastal Change Management Area any area likely to be affected by physical changes to the coast, and:*
>
> *a) be clear as to what development will be appropriate in such areas and in what circumstances; and*
> *b) make provision for development and infrastructure that needs to be relocated away from Coastal Change Management Areas.*
>
> *178. Development in a Coastal Change Management Area will be appropriate only where it is demonstrated that:*
>
> *a) it will be safe over its planned lifetime and not have an unacceptable impact on coastal change;*
> *b) the character of the coast including designations is not compromised;*
> *c) the development provides wider sustainability benefits; and*
> *d) the development does not hinder the creation and maintenance of a continuous signed and managed route around the coast.*
>
> *179. Local planning authorities should limit the planned lifetime of development in a Coastal Change Management Area through temporary permission and restoration conditions, where this is necessary to reduce a potentially unacceptable level of future risk to people and the development.'*

A **Coastal Change Management Area** is defined as (National Planning Policy Framework, December 2023, Annex 2, Glossary):

> ***'**An area identified in plans as likely to be affected by physical change to the shoreline through erosion, coastal landslip, permanent inundation or coastal accretion.'*

The Isle of Wight coastline is affected by a range of natural hazards including coastal erosion and cliff retreat, coastal landsliding and sea flooding. The southern coast of the Island is generally characterised by steep coastal cliffs and landslides. The northern coast of the Island is characterised by coastal slopes with a series of estuaries and rivers draining north into the Solent.

Rates of erosion and the risk of flooding from the sea are expected to increase over the coming century due to the impacts of climate change, including increasing storminess, increasing winter rainfall and rising sea levels. Coastal erosion is not always gradual and can occur through events such as landslides and cliff falls, where many metres of land may be lost in a single event.

The Isle of Wight Council and the Environment Agency have examined the future risks these hazards present to the coastal communities of the Isle of Wight and have adopted a series of shoreline management policies for the future management of the Isle of Wight Coast. These policies and preferred approaches are set out in the **Isle of Wight Shoreline Management Plan** (SMP, adopted 2011) and the **West Wight Coastal Flood and Erosion Risk Management** Strategy (adopted 2017, for the coast from Freshwater to East Cowes) and further work on coastal risk management is ongoing.

In areas where the shoreline management policy is for 'No Active Intervention' (i.e. do nothing) or for 'Managed Realignment' -either in the short-term (0-20 years), medium-term (20-50 years) or long-term (50-100 years)- coastal change is expected over the next century. These two shoreline management policies are defined in the SMP as:

- *No Active Intervention:* This is a shoreline management policy decision not to invest in the provision or maintenance of any defences. Where there are no existing defences, the coast will continue to evolve naturally. This policy can also apply to areas that are currently defended but may not be defended in the future. These areas will evolve more naturally, which may include an increased risk of flooding or coastal erosion.

- *Managed Realignment:* This shoreline management policy is for the realignment (forwards or backwards) of the shoreline, with management to control or limit the movement and the flood and erosion risks. Although this policy typically applies to low-lying areas at risk of flooding it can equally be applied to cliffed areas, whereby managed intervention slows cliff recession for a period of time.

The *Isle of Wight Shoreline Management Plan* and the *West Wight Flood and Erosion Risk Management Strategy* set out the preferred shoreline management policy approach for each section of coast and describe how it should be applied -please refer to these documents for full information. The Shoreline Management Plan (2011) covers the entire Isle of Wight coast. However, for the 84km coast from East Cowes to Freshwater, it is important to consult the West Wight Coastal Strategy (2017), as this provides the latest updated information and preferred policy approaches for this area on how coastal risks are being managed.

The Island Planning Strategy policy **EV16** on ***'Managing our Coast'*** sets out the Council's approach to managing future development in areas at risk of coastal change, including from coastal erosion, flooding and landsliding.

A CCMA has been defined on the Proposal Map, identifying the area anticipated to be affected by coastal change over the next 100 years. This area includes undefended coastlines evolving naturally and areas at risk of coastal change, including coastlines with 'No Active Intervention' and 'Managed Realignment' SMP policies over the next 100 years.

Policy EV16 outlines the types of development likely to be permissible in the CCMA, in accordance with paragraph 073 of the National Planning Practice Guidance on flood risk and coastal change (2022).

The Island Planning Strategy policy **EV17** on ***'Facilitating Relocation from Coastal Change Management Areas'*** sets out the Council's approach to making provision for existing development and infrastructure that needs to be relocated away from Coastal Change Management Areas.

The evidence used

As outlined in the National Planning Practice Guidance on flood risk and coastal change, 2022 (paragraph 072) a Coastal Change Management Area (CCMA) should be defined where rates of shoreline change are significant over the next 100 years, taking account of climate change; CCMAs do not normally need to be defined where the accepted Shoreline Management Plan policy is to 'Hold the Line' or 'Advance the Line' (i.e. maintain existing defences or build new defences) for the whole period covered by the plan, subject to evidence of how that may be secured. An exception to this may be where there are localised concerns over the viability of a defence and a pragmatic approach is taken to ensure future risk is minimised. *'A Coastal Change Management Area should be defined where the shoreline management plan policy is anything other than hold or advance the line at any time during its plan period. In addition, where there is uncertainty about securing funding for the implementation of hold or advance the line policies, local planning authorities can still identify areas that could be affected by coastal change to ensure prospective developers*

are made aware of the potential risks and inappropriate development is avoided.' National Planning Practice Guidance (2022, paragraph 072).

According to the *National Planning Practice Guidance* (2022, paragraph 072) and the *Coastal Change Adaptation Planning Guidance* (2015, East Riding of Yorkshire Council & Halcrow Group Ltd), Local Planning Authorities should demonstrate that they have considered Shoreline Management Plans, which provide a large-scale assessment of the risks associated with coastal processes, which can provide the primary source of evidence in defining the Coastal Change Management Area and inform land allocation within it; Another key source of information to help inform decisions on the appropriate area for the CCMA are other strategic coastal risk management policy documents produced and adopted since the SMP, which can equally be used at this stage and provide the latest information on both future risk and realistic management approaches for each section of shoreline.

The *Isle of Wight Shoreline Management Plan* (adopted 2011) covers the coast around the Island and identifies shoreline management approaches and Policies over the next 100 years and provides a strategic approach to the management of the coast. The SMP is supported by more detailed Coastal Strategies and Studies (including the *West Wight Coastal Flood and Erosion Risk Management Strategy* for the coast from East Cowes to Freshwater, adopted in 2017) and coastal studies for the south coast which provide the most up-to-date information on how future coastal risks can be managed, including priority future schemes, areas where contributions are required to construct new defences, and also areas where adaptation to increasing risks will be required. These local documents contain evidence more up to date and detailed than the previously published NCERM1 national mapping and identify sections of the Island's shoreline likely to be affected by coastal change.

The most recently adopted coastal policy document on the Isle of Wight is the *West Wight Coastal Flood and Erosion Risk Management Strategy* (adopted in 2017). The methodology established in this most-recently adopted document has therefore been used to define the extent of the CCMA around the Isle of Wight coast, identifying the area anticipated to be affected by coastal change over the next 100 years. The first draft of the Island Planning Strategy (IPS) was published for public consultation in December 2018, with a second Draft IPS published for consultation in July 2021, both of which were 'Regulation 18' versions of the local plan. The CCMA is defined based on the policies and principles of the adopted Isle of Wight Shoreline Management Plan 2011, the adopted West Wight Coastal Flood and Erosion Risk Management Strategy 2017, and ongoing work into future coastal risks and defence requirements. The CCMA zone also takes account of where adopted shoreline management policies change over time, either in the short, medium or long term.

The CCMA includes the retreating cliff coasts characteristic of the exposed southern coasts of the Isle of Wight along the English Channel, and the typically more gently rising coastal slopes subject to retreat on the more sheltered northern shores of the Island facing the Solent, as well as areas facing multiple risks from erosion and sea flooding, or landsliding. The CCMA therefore covers areas where a known risk to existing features, assets and infrastructure has been identified, where future development should be managed to ensure it is appropriate, and to assist these areas to adapt to future changes in the coastline. Outside the area defined as CCMA, it is important to remember that coastal risks can also occur on defended coastlines with a 'Hold the Line' policy, where significant funding is going to be required to deliver defence improvements and risk reduction in the future; for further information please see the coastal policy documents outlined above and policy EV18 of the Island Planning Strategy.

The CCMA has used the latest available information on: -

- Shoreline management policies in the short, medium and long term (to 2025, 2055 and 2105) from the *Isle of Wight Shoreline Management Plan* (adopted in 2011), or where relevant, more recent work on the *West Wight Coastal Flood and Erosion Risk Management Strategy* (adopted in 2017);
- Calculations of future erosion rates in the short, medium and long term, including allowances for climate change and sea level rise.

The extent of the CCMA also takes account of:

- the residual effect of existing structures until they fail, where relevant.
- landslide failures and cliff retreat patterns.

- Where shoreline management policies change over time. For example, a 'Hold the Line' policy in the short term or medium term, which then transfers to a 'No Active Intervention' (i.e., do nothing) policy for the remainder of the 100 year period.
- Where a 'Managed Realignment' Shoreline Management Policy exists which may reduce but not halt erosion/cliff retreat (for example through use of targeted beach recycling), to reduce the width of the potential erosion zone.

Coastal Erosion Vulnerability Assessments

Policy EV16 specifies that Coastal Change Vulnerability Assessments must be prepared to accompany applications within the CCMA to demonstrate whether or not the requirements of National Planning Policy Framework paragraph 178 can be met, and in accordance with paragraph 074 of the National Planning Practice Guidance. Policy EV16 also provides additional guidance on what the Coastal Change Vulnerability Assessment should contain.

The National Planning Practice Guidance (2022, paragraph 072) allows Local Authorities the discretion to determine how time zones are interpreted in planning terms to define CCMAs.

The CCMA has been mapped to show the area where change is anticipated over the next 100 years, defined for policy EV16 of the Island Planning Strategy.

Policy EV16 then lists certain uses which may be appropriate for 20, 50 and 100 year risk horizons *'from the time of development'*. The information provided below lists the future erosion rates used in the identification of the CCMA. Therefore, these erosion rates should also be used in all **Coastal Erosion Vulnerability Assessments** produced by applicants in support of planning applications within the CCMA, to demonstrate when it is anticipated that a development would become at risk. Local evidence from the application site can also be obtained and should be presented additionally in the Vulnerability Assessment where this is relevant to fully understanding and illustrating the coastal risks at the site. Photos should also be included.

Erosion rates:

The following erosion rates should be used in any Vulnerability Assessment in support of a planning application within the CCMA, to determine the point(s) in time at which the proposed development is anticipated to be at future risk. These potential erosion rates should be applied from the current shoreline position (cliff top) at the date of the application. It should also be noted that erosion often occurs in an episodic manner. Please also consult the latest Shoreline Management Plan (2011) or West Wight Coastal Flood and Erosion Risk Management Strategy (2017) to identify areas of multiple risks.

The future erosion rates take account of predicted sea level rise, and therefore increase gradually over time. For example, a baseline rate of 0.2m/yr erosion becomes a rate of 0.23m/yr in the short term (to 2025), then 0.35m/yr in the medium term (to 2055), then 0.45m/yr in the long term, resulting in a total of approximately 40 metres of erosion over the next 100 years.

Baseline erosion rates (ref. Isle of Wight Shoreline Management Plan, 2011).
Important note: Please first identify the baseline rate for a stretch of coast in the table below (along with any localised slope reactivation potential listed), then secondly refer this figure to the next table following it, which translates this baseline figure into a series of future erosion rates (which increase over time with climate change) which should then be used to inform any development proposals within CCMAs: -

Location	Baseline rate* (metres per year)	Plus potential slope reactivation triggered by erosion:
South-east Coast (Culver Cliff to Blackgang):		
Culver Cliff	0.2	
Yaverland cliffs	0.4	
Yaverland car park to lake cliffs	0.3	
Shanklin Esplanade	0.4	
Luccombe road	0.3	
Luccombe	0.4	Ventnor Undercliff Landslide Complex. See also policy EV19 and the technical reports on the IWC website.
Monks Bay to Steephill Cove	0.4	
St Lawrence Undercliff	0.3	
Castlehaven & St Catherine's	0.6	
Blackgang	1	
South-west Coast (Chale to The Needles):		
Chale to central Compton Bay	0.75	
Compton Bay north	0.5	
Afton Down & Freshwater Bay	0.3	
Tennyson Down and The Needles	0.25	
North-west Coast (Alum Bay to Cowes):		
Alum Bay & Headon Warren	0.3	
Totland to Fort Albert	0.5	
Fort Victoria County Park & Norton	0.3	
Yarmouth and Bouldnor	0.3	
Newtown Estuary western spit	0.6	
Newtown Estuary eastern spit	0.62	
Thorness Bay	0.4	
Gurnard Luck	0.3	
Gurnard Bay & Cowes Esplanade	0.3	Cowes-Gurnard slope instability zone

Location	Baseline rate* (metres per year)	Plus potential slope reactivation triggered by erosion:
North-east Coast (East Cowes to Whitecliff Bay):		
East Cowes Outer Harbour and Esplanade east	0.2	
East Cowes Outer Esplanade west	0.25	Up to 65m
Norris Castle west	0.12	up to 30m
Norris Castle east	0.9	up to 65m
Norris Wood	0.9	
Pier Wood	0.32	up to 125m
Osborne beach	0.2	
Barton Wood	0.2	up to 60m
Barton Hard & Combe Copse	0.24	
Kings Quay	1	
Wallishill Copse west	0.28	
Wallishill Copse east	0.28	up to 50m
Woodside west	1	
Woodside east	0.3	up to 40m
Wootton point	0.15	
Wootton Creek	0.4	
Quarr Abbey west	1	
Quarr Abbey east	0.4	
Pelhamfield	0.4	up to 70m
Ryde	0.4	up to 80m (by boating lake)
Appley & Puckpool	0.5	
Springvale & Seaview Duver	1	
Horestone Point in south Seagrove Bay	0.3	up to 100m
Priory Bay north	0.3	up to 40m
Priory Bay south & Node's Point	0.4	up to 130m

		See also policy EV19 and the technical report on the IWC website.
Cowes parade and harbour	0.3	

St Helen's Duver	0.23	
Bembridge	0.15	
Foreland north	0.2	
Foreland central	0.5	
Foreland south	0.3	
Foreland Fields	0.5	
Bembridge School	0.66	
Whitecliff Bay north	0.5	
Whitecliff Bay south	1.4	

Future predicted erosion rates (ref. Coastal Strategy, 2017*) to be used in CCMAs, which have been calculated to allow for the progressive impacts of sea level rise and climate change:

Baseline rate*	Erosion rate now **to 2025**: (m/year)	Erosion rate **2025 to 2055**: (m/year)	Erosion rate **2055 onwards**: (m/year)	Potential erosion over 100 years (approximate):
0.1	0.11	0.18	0.23	20 metres
0.15	0.17	0.26	0.34	30 metres
0.2	0.23	0.35	0.45	40 metres
0.25	0.28	0.44	0.57	50 metres
0.3	0.34	0.53	0.68	60 metres
0.35	0.40	0.61	0.79	70 metres
0.4	0.46	0.70	0.91	80 metres
0.5	0.57	0.88	1.13	100 metres
0.6	0.68	1.05	1.36	120 metres
0.7	0.80	1.23	1.59	140 metres
0.75	0.85	1.32	1.7	150 metres
0.8	0.91	1.41	1.81	160 metres
0.9	1.02	1.58	2.04	180 metres
1.0	1.14	1.76	2.27	200 metres

**The methodology for future erosion rate predictions is documented in Appendix C, West Wight Coastal Flood and Erosion Risk Management Strategy, sub-appendix C, Future Erosion Predictions.*

Please note: The CCMA is mapped for indicative purposes only. Erosion and cliff retreat occurs in an episodic manner, and therefore the accuracy of the predicted coastal change extent shown on the Proposals Map cannot be guaranteed and will vary. The relevant chapters of the Shoreline Management Plan (2011) or West Wight Coastal Strategy (2017) and the latest local site circumstances should be referred to in all cases where more detailed information on coastal risks is required to make informed decisions on future risks.

It is also essential to ensure that any proposals for future land uses within CCMAs are in accordance with the latest approaches to risk management set out in the West Wight Coastal Strategy (2017) and Shoreline Management Plan (2011), ongoing coastal Studies and Schemes, to ensure sustainable future use of the shoreline and coastal communities. These documents are available to view online at www.iow.gov.uk, choose 'Environment and Planning' and select 'Coastal Management' followed by 'Plans and Strategies'.

What alternative policy approaches were considered?

The requirement for identifying Coastal Change Management Areas (CCMA) is established in the National Planning Policy Framework (last updated in December 2023). The local need for CCMAs has been established due to the range of coastal change and coastal risks occurring on the Isle of Wight, and more

particularly it was identified in the West Wight Coastal Flood and Erosion Risk Management Strategy (adopted 2017) which said *'The planning process will also be an essential supporting mechanism to deliver options such as adaptation and risk reduction in proposed Coastal Change Management Areas such as Totland, Colwell and Gurnard Luck. Inappropriate development in risk areas should be avoided to ensure that additional assets or populations are not placed at risk of future erosion or flooding. There may also be opportunities for appropriate or time-limited land uses in such areas.'*

The West Wight Coastal Strategy (2017) and Shoreline Management Plan (2011) outline the process through which a range of alternative shoreline management options were evaluated, and the preferred policies identified. The draft preferred approaches then went through 3-month periods of consultation prior to finalisation, adoption by the Local Authority, and national approval.

CCMAs have been identified through the Island Planning Strategy policy on EV16 on *'Managing Our Coast'*. Care has been taken in defining the extent of the CCMA to use the latest available evidence base and sea level rise allowances in line with the current national appraisal process for coastal flood and erosion risk management.

Paragraph 177 of the National Planning Policy Framework (December 2023) requires Councils to '*make provision for development and infrastructure that needs to be relocated away from Coastal Change Management Areas.* This has been achieved through the Island Planning Strategy policy EV17 on *'Facilitating Relocation from Coastal Change Management Areas'*.

Paragraph 012 of the National Planning Practice Guidance Flood Risk and Coastal Change (2022) also clarifies that Plans can identify *'locations where existing development and infrastructure may not be sustainable in the long term. Such locations could include those which are, or are expected to be in future, subject to coastal erosion (e.g. Coastal Change Management Areas), frequent (e.g. areas likely to be permanently inundated by the sea or tidal estuaries/rivers or with sufficient frequency as to become intertidal, Flood Zone 3b or areas likely to be in 3b in future), disruptive or hazardous flooding, combined with little or no prospect of these risks being adequately mitigated by new or improved flood and coastal erosion risk management infrastructure, or property level resilience measures.'*

The National Planning Practice Guidance Flood Risk and Coastal Change (2022), paragraph 012, notes that, as well as setting out the types of development that will and will not be appropriate in these locations, and considering removal of permitted development rights (as discussed further below), Plans can also consider *'formally allocating additional land in plans for relocation or roll-back of existing development (particularly development completed prior to Shoreline Management Plans) and habitat affected by coastal change or increasing flood risk due to climate change'* and consider *'Including policies in plans and conditions on permissions to ensure identified land is used for this purpose.'* Another option is also to consider *'an approach that takes into account the exceptional circumstances of having to replace existing development at risk of coastal change by granting planning permissions where normally they would be refused.'* However, due to the extensive length of the Isle of Wight coast (approximately 168km of coastline, including estuaries), the notable lengths of CCMAs identified within this varied coastline, and the potential variable timing of future impacts, these exceptions are not currently considered to be required and the current policy to facilitate relocation will be applied equally in all areas of the Isle of Wight coast.

How the policy contributes to addressing the issues

The policy EV16 on 'Managing Our Coast' will allow the local planning authority to reduce risk from coastal change by avoiding inappropriate development in vulnerable areas and not exacerbating the impacts of physical changes to the coast. It will limit the planned lifetime of development in Coastal Change Management Areas through temporary permission and restoration conditions, where this is necessary to reduce a potentially unacceptable level of future risk to people and the development.

The role of CCMAs is to avoid inappropriate development, and to allow the vulnerability of development proposals to be tested to ensure that only appropriate development takes place. The Local Planning Authority has to be confident that the degree of risk to the site and elsewhere has been assessed prior to the granting of planning permission within a CCMA.

Run off of surface water and ground water is a concern in relation to the soft cliffs and slopes forming the Isle of Wight coast, as this can add to coastal erosion problems. Therefore, development in the CCMA

must demonstrate how water can be discharged without exacerbating erosion and/or having an adverse effect upon the stability of nearby cliffs. This would typically preclude the use of soakaways. This is stated in the policy.

The policy highlights that developers within the Coastal Change Management Area and in other areas close to the CCMA should consider whether any essential infrastructure which will support the proposed development is at risk from being lost to erosion or coastal change, for example, the only access road or utility supplies.

The Island Planning Strategy policy defines certain development types which may be appropriate for 20, 50 and 100 year risk horizons *'from the time of development'* within the CCMA. The use of these rolling time bands allows decision-making to remain up to date as the coast changes, and therefore future erosion rates have been provided for use in support of planning applications within the CCMA, which can be used to demonstrate when an anticipated a development would become at risk.

The majority of properties at risk from coastal change are not anticipated to be at risk until the longer term. Development plans have a lifetime of 15 years, considering the 100 year timespan of the CCMA, and the uncertainties in predicting future coastal retreat, future coastal change the role of the CCMAs will continue to be considered and reviewed at appropriate times.

The policy for CCMAs will utilise time-limited planning permissions to reduce risk, in accordance with paragraph 050 of the National Planning Practice Guidance (2022), as follows:

> *'How can planning limit the planned lifetime of development?*
>
> *'This can be achieved by time-limited planning permissions that can contain conditions relating to the review of that permission in relation to factors that may mean the development will need to relocate, for example:*
>
> - *Rates of coastal erosion and change.*
> - *Rate of increased flood risk due to climate change.*
>
> *The Local Planning Authority should be satisfied that adequate and secure financial arrangements are in place for the removal of time-limited development.'*

'The National Planning Practice Guidance (2022) issues the following advice regarding permitted development rights in areas at risk from coastal change (paragraph 075):

> *'What issues do local planning authorities need to consider in relation to permitted development rights in coastal change areas?*
>
> *Where development is permitted development under the Town and Country Planning (General Permitted Development) (England) (Order) 2015 and is likely to result in an increase in the scale of property or the number or vulnerability of occupants at risk from coastal change, local planning authorities may want to consider whether to make use of their powers under Article 4 of the Order to require planning permission to be sought in each case.'*

The Isle of Wight Council notes this advice regarding permitted development rights which are likely to result in an increase in the scale of property or number or vulnerability of occupants at risk from coastal change. The progress of coastal erosion and vulnerability of properties will remain under review.

The National Planning Policy Framework (2023), paragraph 177, requires Councils to '*make provision for development and infrastructure that needs to be relocated away from Coastal Change Management Areas.* Policy EV17 on 'Facilitating Relocation from Coastal Change Management Areas' addresses the relocation of properties due to be lost to coastal erosion in the next 20 years, with the aim of providing assistance to existing development within the CCMA when it is at risk in the short-term.

If there are changes in future government funding formulas for coastal and flood defences, this could affect the affordability of some current 'Hold the Line' SMP policy areas and may raise the requirement in the future to consider identifying further CCMAs or additional approaches to assist adaptation.

Key reference:
The Isle of Wight Shoreline Management Plan (2011), the West Wight Coastal Flood and Erosion Risk Management Strategy (2017) and the latest coastal risk management documents can be accessed online at www.iow.gov.uk, choose 'Environment and Planning' then 'Coastal Management'.

EV18–IMPROVING RESILIENCE TO COASTAL FLOODING AND COASTAL RISKS

Explaining the issues faced

Many of the Isle of Wight's largest urban areas are situated on its coasts and estuaries, as well as a range of smaller settlements. This includes significant numbers residential and commercial properties, which currently benefit from a coastal location but are also vulnerable to increasing coastal risks. The coastal communities are linked by key infrastructure which is also at risk from coastal change, including strategic and local roads, ferry transport links and a range of essential utilities, which typically benefit much wider communities than just those properties directly at risk.

With many communities, features of interest and marine and tourism industries situated around the shoreline of the Isle of Wight, future coastal flooding and erosion presents a significant risk.

The Isle of Wight benefits from a legacy of existing coastal defences around the coastline which help prevent erosion and reduce flood risks. However, these ageing defences were often built in times of greater economic prosperity and the future maintenance or replacement of these structures presents a significant problem in these more challenging economic times. National funding to reduce coastal flood and erosion risks is available to help fund defence works in the areas most at risk nationally and has been focussed on reducing risks to residential properties rather than businesses or to provide tourism or recreational benefits.

There is therefore the realisation that future public investment in coastal defences will have to be rationalised and prioritised in key areas. However, it is recognised that there are significant opportunities to help pay for new coastal defences through a partnership approach, an approach required by national government. This includes involving developers and the potential beneficiaries of future schemes to help fund future defences and contribute to broader outcomes for communities at risk. This kind of approach is key to a sustainable future for coastal settlements at risk of coastal flooding and coastal change.

The evidence used

The *Isle of Wight Shoreline Management Plan* (2011) provides a comprehensive strategic-level assessment of the future coastal risks to the coastal communities of the Isle of Wight and identified that 'Hold the Line' policies are appropriate and were set along many coastal towns and settlements on the Isle of Wight. This shoreline management policy is defined as follows:

- *'Hold the Line'* –Coastal defences are maintained and upgraded or replaced in their current position, where funding permits.

Past coastal defences have been constructed at both public and private expense. Coastal defences, seawalls and seafront esplanades often also provide access, infrastructure, utility, tourism and recreation benefits and opportunities, not solely a coastal erosion protection or a flood defence.

In recent years (and since the Isle of Wight Shoreline Management Plan was produced) there has been a change in the national approach to the way coastal defences get funding. The new system, referred to as a payment for outcomes approach, encourages the 'partnership funding' of schemes by seeking those benefitting from coastal defence schemes to contribute to their cost.

The Isle of Wight Council's adopted *West Wight Coastal Flood and Erosion Risks Management Strategy* (2017) for 84km of coastline highlights the importance of addressing the challenge of increasing coastal risks through the planning process. It states: *'In the larger urban areas including West Cowes, East Cowes, Newport and Yarmouth, redevelopment and regeneration will need to play an integral role in delivering sustainable longer term flood risk management and ensure the continued prosperity of these areas. Through the Isle of Wight Council planning policy, future development should implement raised ground levels or provide new defences to protect the development area from future flooding or erosion. In the*

future, incorporating these new defences into wider defence schemes it will help reduce the current funding gap between what is needed, and what can currently be afforded and ensure broader outcomes are delivered.'

The 'Hold the Line' shoreline management policy areas (as established in the current Shoreline Management Plan and updated in the West Wight Coastal Strategy) are used to identify the lengths of coastline along which policy EV18 will apply.

What alternative policy approaches were considered?

The West Wight Coastal Strategy (2017) and Shoreline Management Plan (2011) outline the process through which a range of alternative shoreline management approaches and options were evaluated and preferred policies identified, prior to the 'Hold the Line' policies being set. The draft preferred approaches then went through 3-month periods of consultation prior to finalisation, adoption by the local authority, and national approval.

In the Island Planning Strategy policy EV14 on 'Managing Flood Risk in New Development' outlines approaches for managing flood risk. This policy EV18 on 'Improving Resilience to Coastal Flooding and Coastal Risks' supplements that policy on the coastline by highlighting that improvements that can be achieved through development and redevelopment will play an integral role in delivering sustainable longer-term flood and coastal risk management for the continued prosperity of the coastal towns and villages on the Island, including through providing new coastal defences or land-raising along the shorelines with a 'Hold the Line' policy in the SMP and Coastal Strategy.

A settlement-specific level of detail is not currently considered necessary at planning policy level due to the extensive length of the Isle of Wight coast (approximately 168km of coastline, including estuaries) and the widespread lengths of developed areas with 'Hold the Line' policies along this varied coastline; therefore this policy will be applied equally in all areas of the Isle of Wight coast, as reference can be made to the appropriate latest supporting coastal management policy documents for a settlement specific (and individual unit) level of detail (available online online at www.iow.gov.uk, choose 'Environment and Planning' then 'Coastal Management' and select 'Plans and Strategies').

How the policy contributes to addressing the issues

Areas within coastal settlements such as Cowes, East Cowes and Yarmouth and at Newport harbour are low-lying at risk of tidal flooding, which will increase in extent, depth and frequency over time. In these locations a large-scale built solution to provide a higher standard of protection is not currently affordable, along these highly intricate coastlines with multiple ownership and individual waterfront access. Therefore, in the short and medium term (up to 20 and 40 years, in adopted policy terms) reduction of risks to those most at risk is proposed through use of Temporary Flood Barriers and provision of Property Level Protection measures to residential properties, where eligible. Over this same time period, future development along the waterfront or in the risk area should play a key role in actively reducing risks by implementing raised ground levels and/or providing new coastal defences on site, to protect the development area from future flooding or erosion and to avoid placing further people at risk. This policy is designed to ensure incremental improvements can be gained over time, as well as the risks be reduced in the interim. In the future (in the longer-term, from 40 to 100 years), incorporating these new defences into wider defence schemes, by potentially connecting them together, will help reduce the current funding gap between what is needed, and what can currently be afforded, to seek a more sustainable future for these towns, and support the communities at risk. This approach was set out in the Isle of Wight Council's adopted *West Wight Coastal Flood and Erosion Risk Management Strategy* (2017).

There are similar challenges along the other developed coastlines of the Isle of Wight which have 'Hold the Line' policies (as set out in the Shoreline Management Plan) facing risks of erosion, coastal landsliding and coastal flooding, where development and redevelopment opportunities can contribute to reducing future risks.

Developments in areas with a 'Hold the Line' policy in the SMP (or seeking to benefit from existing coastal defences) should provide appropriate coastal defences or land raise to a height suitable to reduce risks for the lifetime of the development and contribute to implementing the future shoreline management policy and defences required to sustain the Isle of Wight's coastal communities, economy and infrastructure.

Key reference:
The Isle of Wight Shoreline Management Plan (2011), the West Wight Coastal Flood and Erosion Risk Management Strategy (2017) and the latest coastal risk management documents can be accessed online at www.iow.gov.uk, choose 'Environment and Planning' and 'Coastal Management' and select 'Plans and Strategies').

EV19 –MANAGING GROUND STABILITY IN NEW DEVELOPMENT

Explaining the issues faced

Paragraphs 189-190 and paragraph 180 of the National Planning Policy Framework (NPPF, December 2023) state the following regarding land instability:

> *'189. Planning policies and decisions should ensure that:*
>
> *a) a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation);' …*
> *'c) adequate site investigation information, prepared by a competent person, is available to inform these assessments.'*
>
> *'190. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.'*
>
> *'180. Planning policies and decisions should contribute to and enhance the natural and local environment by:*
>
> *e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
> *f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.'*

The town of Ventnor and surrounding villages are located on the south coast of the Isle of Wight on the south-facing terraces of a complex of ancient landslides, known as the Ventnor Undercliff. It is the largest coastal landslide complex in the United Kingdom and the largest urban landslide complex in north-western Europe. The unusual landscape of the Undercliff, with its relatively warm micro-climate, lush vegetation, south-facing aspect and sea views provides a considerable attraction for residents and visitors and supports important habitats for plants and animals. In addition to the town of Ventnor, there are also important villages located within the Undercliff, including Bonchurch, St Lawrence, Niton and Blackgang, and the adjacent village of Luccombe.

The Ventnor Undercliff is recognised as the most significant ground instability problem in Great Britain. The landslide is deep-seated and generally slow moving, which has allowed the historical development of the area, particularly since the mid-19th century. However, the impact of coastal landsliding and the long term effect of ground movement on the urban environment can be considerable. There is ongoing damage to the urban infrastructure including buildings, roads, retaining walls and underground services. Over the years a number of properties have had to be demolished due to the impacts of ground movement, whilst others have sustained significant damage. Despite this, some locations within the Undercliff remain quite stable with ancient structures including churches dating from the 11th century and earlier, as well as stone farmhouses and substantial Victorian buildings, which have remained relatively unaffected. Patterns of ground movement vary throughout the Undercliff.

The landsliding risks affecting the area are unique in scale in England but share similar issues with other significant communities affected by landsliding such as Lyme Regis in Dorset and Scarborough in North Yorkshire.

In recent decades, landslide management activities have sought to reduce the impact of ground movement on the community, including through improving knowledge of the area and the patterns of risks, developing planning and building controls, implementing coastal engineering measures, undertaking ground movement monitoring, reducing water in the ground and careful slope management, and providing public information.

The landslide complex is sensitive to future climate change (i.e. sea-level rise that promotes increased toe erosion and unlocking, and increased winter rainfall promoting higher pore water pressures within the landslide units). The implications of climate change predictions for the Undercliff are both spatial and temporal. There are concerns that hitherto marginally stable areas of the Undercliff may become unstable due to reactivation of ground movement and the occurrence of new landslides; and also, in areas previously affected by ground movement or landslides, the frequency and rate of ground movement and landsliding is expected to increase. The main consequence of predicted climate change on the stability of the Undercliff is likely to be an increased risk of damage to assets due to ground movement, particularly in built up areas, such as Ventnor. Currently, risks are reduced by the presence of coastal defences along the steepest and most developed parts of the town. The future risks in the area are discussed in the Isle of Wight Shoreline Management Plan (2011, Chapter 4.5) and further work is currently underway exploring how future risks can be managed. Further key sources of information on the ground movement (including technical and non-technical reports and maps) are available on the Isle of Wight Council's website and are outlined below.

Elsewhere on the Isle of Wight, at the northern tip of the Island, the north-facing coastal slopes extending under the towns of Cowes and Gurnard form a prominent headland separating the Medina Estuary from the western Solent and are affected by significant slope stability and landslide problems.

Behind the long seafront esplanade from Cowes to Gurnard the coastal slopes underlying the residential area are at risk from underlying landslide phenomena with potential for reactivation by coastal erosion, exacerbated by water in the ground. The coastal slopes have, historically, been extensively developed for residential, leisure and retail purposes. Initially, development was focussed at Cowes on the more accessible gently sloping ground. As the demand and opportunities for development sites increased, development spread further west towards Gurnard. The spread of development has, in places, occurred on steeper ground of marginal stability. The increase in winter rainfall (effective precipitation) that is likely to result from future climate change could have significant implications as it would raise groundwater levels, potentially causing more widespread reactivation of the coastal slope along this frontage. Currently, risks are reduced by the presence of coastal defences preventing erosion at the toe of the slope. The *West Wight Coastal Flood and Erosion Risk Management Strategy* (2017, Chapters 9 and 11) provides further information about the future of these defences and future risks in the area. A further key source of information on the ground movement (including technical report and maps) is discussed below.

Sustainable development within these risk areas requires wise decision-making taking full account of ground conditions. This can be achieved most effectively by means of a coordinated approach to instability management, minimising risks by:

- identifying and understanding the nature and extent of instability.
- guiding development towards suitable locations.
- ensuring that existing and future developments are not exposed to unacceptable risks.
- ensuring that development does not increase the risk for the rest of the community.

Away from the landslide risk areas, sustainable urban drainage systems are typically encouraged to manage runoff and stormwater locally (as close its source as possible), to mimic natural drainage and encourage its infiltration into the ground. Such an approach is *not* suitable for these coastal landslide risk areas identified in policy EV19. Here the opposite is true, and the important principle is instead to *keep water out of the ground* to increase ground stability. Water should be put into piped disposal systems and leaks from properties and utilities should be swiftly repaired and sealed.

Paragraph 056 of the National Planning Practice Guidance on Flood Risk and Coastal Change (NPPG, August 2022, where regarding on Sustainable Urban Drainage Systems) recognises that *'Particular types of sustainable drainage features may not be practicable or appropriate in some locations'* and recommends that *'Local planning authorities may find it helpful to set out those local situations where they anticipate particular sustainable drainage features -being inappropriate.'*

The evidence used

The National Planning Practice Guidance on Land Stability (NPPG, 2019, paragraph 003) outlines that *'planning authorities may need to consider -identifying specific areas where particular consideration of landslides, mining hazards or subsidence will be needed.'*

Technical reports and 1:2,500 scale maps of Geomorphology, Ground Behaviour and Planning Guidance exist for the areas identified in this local policy supported by latest risk information. Within the maps, areas are identified which are likely to be physically capable of development along with areas which are either subject to significant constraints or are likely to be unsuitable.

a) **Ventnor Undercliff** (approx.12km from Bonchurch to Blackgang, and also the area of Luccombe): Technical reports and geomorphological landslide mapping systematically extending from central Ventnor out along the Ventnor Undercliff Landslide complex has been produced over a number of years for the Isle of Wight Council, including key reports published in 1991, 1995 and 2007. A technical report and geomorphological landslide mapping were produced for Luccombe in 1989.

b) **Cowes-Gurnard** (approx. 2.5km coastal slopes). The Cowes to Gurnard Coastal Slope Stability Study Ground Behaviour Assessment including geomorphological landslide mapping was produced in 2000 for the Isle of Wight Council.

These maps and reports are an invaluable source of knowledge in these complex risk areas.

Please note, the published information should be viewed alongside obtaining suitable expert advice on the latest ground movements in the area.

Published information is available at www.iow.gov.uk, choose 'Environment and Planning' and 'Coastal Management' then select 'Landslides and Ground Movement', and also 'Plans and Strategies'.

The extent of the existing set of detailed ground stability maps supported by latest risk information is the basis on which the limits of the policy area mapped for EV19 has been defined.

The cause of ground movement problems can be linked to a combination of high groundwater levels and erosion by the sea. Measures which control these factors reduce the likelihood of future movements; they will not, however eliminate all future risk. Although little can be done to prevent some rainfall seeping into the ground, artificial surcharge of water levels through poorly designed or connected drainage systems or leaking pipes can be controlled. Soakaway drains are not suited to the ground conditions in these areas because of the need to control water entering the ground.

The technical reports outlined above highlight the importance of controlling water in the ground, and advice leaflets have also been issued to homeowners in the past (now available online) containing this advice, encouraging everyone in the areas to contribute to minimising future risks.

What alternative policy approaches were considered?

This policy formalises and clarifies a process which has been in place for a number of years for development applications in these known areas of landsliding and potential unstable ground. Planning and building control measures aim to ensure the location is suitable for development, and also that the development proposed is suitable for the location. This policy is intended to ensure this, and that development is guided to the most appropriate locations, it avoids unsuitable locations, it takes full account of the individual local circumstances of each plot (including variable patterns of terraces and slopes and any patterns of movement), it does not have an adverse effect on ground stability upslope, downslope or elsewhere, it takes account of the ground conditions in its design and construction, and, importantly, it controls water to avoid adding water into the ground. Advice to homeowners in these areas of unstable ground is available, including recommending practical measures to control water, manage slopes and retaining walls and how to manage vegetation on slopes to improve slope stability.

This policy approach is based on the knowledge obtained in a series of past ground stability reports and maps which have been developed and published over a number of years in these risk areas.

Back in the late 1980s, the former Department of the Environment (DOE) commissioned a pilot study of central Ventnor to assist the preparation of national planning policy guidance for development on unstable land, and further local studies and landslide risk management have continued since, as outlined above.

How the policy contributes to addressing the issues

In accordance with the principles relating to land stability in the National Planning Policy Framework (December 2023), the National Planning Practice Guidance (July 2019), and in accordance with local experience and publications, the policy will ensure that development is compatible with ground conditions and is not encouraged where the likelihood of movement is high. New property within the areas of potential ground movement must be capable of withstanding movement and not lead to a worsening of slope stability at the site or on adjoining land.

The main aims of considering potential landslide problems during the planning process are:

- to minimise the risks and effects of landsliding on adjoining property, services, structures and the public.
- to help ensure that various types of development should not be placed in unstable locations, without appropriate precautions.
- to enable unstable land to be appropriately used.
- to assist in safeguarding public and private investment by a proper appreciation of site conditions and the necessary precautionary measures.

The intention is not to prevent development (although in some cases this may be the best response) but to ensure that development is suitable and to minimise undesirable consequences such as property damage or degradation of the physical environment. However, the responsibility for determining whether land is physically suitable for a proposed development and the appropriate technical measures to protect that development lies with the developer and/or the landowner.

Applications for development will generally need to be accompanied by a ground stability report prepared by a competent person. The detail required within the report will vary depending upon many factors, including the type/scale of development and the location of the development within a geotechnical context.

Development of areas known to suffer from instability will not normally be permitted, unless the local planning authority can be satisfied that the site can be developed and used safely and not add to the instability of the site or adjoining land.

The authority will determine whether a proposed development should proceed, taking into account all material considerations, of which instability is only one. The authority may insist on particular conditions being met before planning permission is granted.

Key reference:
Advice and information for areas of potential ground instability can be found at www.iow.gov.uk, choose ‘Environment and Planning’, and ‘Coastal Management’ then select ‘Landslides and Ground Movement’; and also, additional information in the section on ‘Plans and Strategies’.