

2.4 PROTECTING OURSELVES FROM NATURAL AND MAN-MADE DISASTERS

2.4.1 The consequences of climate change, including extreme weather events, are some of the biggest challenges facing the country. Although reducing greenhouse gas emissions is expected to help prevent the worst scenarios, we will still need to adapt to some degree of change, including:

- heavy rainfall and more frequent and severe storms
- increased average sea levels
- warmer, wetter winters and hotter, drier summers
- greater flooding (inland and coastal)
- coastal erosion
- crop failures / agricultural decline
- species and habitats decline
- human health risks from extreme temperatures
- more limited drinking water resources

2.4.2 This part of the chapter covers issues in relating to flooding, coastal erosion, land instability, agricultural land, and contamination.

FLOOD RISK

2.4.3 Flooding usually occurs adjacent to rivers and other watercourses or in low-lying coastal areas, but it can also occur elsewhere, such as groundwater flooding caused by springs, or where buildings or other structures affect the natural drainage of the land. Some areas are at risk from both fluvial and tidal flooding, or have the potential to exacerbate flooding elsewhere through surface water runoff and overland flow. The councils wish to avoid danger to life and damage to property wherever flood risk may exist. Dorset County Council is the lead Local Flood Authority in managing local flood risk and surface water flooding and the take up of sustainable drainage systems.

2.4.4 Flood risk has been mapped in the Strategic Flood Risk Assessments for the area, and updated flood risk maps are also shown on the Environment Agency website. The defined flood zones are:

- **Zone 1: a low probability of flooding** – this zone comprises land as having a less than 1 in 1,000 annual probability of river and sea flooding (<0.1%)
- **Zone 2: a medium probability of flooding** - this zone comprises land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (0.1%-1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.1% - 0.5%) in any year.
- **Zone 3a: a high probability of flooding** – this zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year
- **Zone 3b: the functional flood plain** – this zone comprises land where the water has to flow or be stored in times of flood.

Surface water mapping can be found in the Dorset Strategic Surface Water Management Plan.

2.4.5 Weymouth Town Centre, the Park District and the Chiswell area of Portland are particularly vulnerable to flooding. In West Dorset, Bridport is considered to be the most vulnerable area to flooding. Some uses are more vulnerable than others, and this will also be taken into account in determining the level of risk and acceptability of a proposal. Table 2.3 provides an indicative list of vulnerable development types, please note that this list is not exhaustive.

Table 2.3: Vulnerability Classification

Highly Vulnerable	<ul style="list-style-type: none"> - Basement dwellings - Caravans, mobile homes and park homes intended for permanent residential use - Hazardous substances
More Vulnerable	<ul style="list-style-type: none"> - Hospitals - Living accommodation (including built tourist accommodation) - Drinking establishments and nightclubs - Non-residential uses for health services, nurseries and educational establishments
Less Vulnerable	<ul style="list-style-type: none"> - Buildings used for shops, offices and other businesses - Assembly and leisure - Land and buildings used for agriculture and forestry. - Water treatment works which do not need to remain operational during times of flood - Sewage treatment works (if adequate measures to control pollution and manage sewage during flooding events are in place)

2.4.6 Appropriate surface water management and Sustainable Drainage Systems (SuDs) should be incorporated within development proposals. Proposals for development in medium and higher flood risk areas must be accompanied by a site-specific flood risk assessment, clearly identifying whether the development will be safe for its lifetime taking account of the vulnerability of its users, and whether there may be any potential increase or reduction in flood risk elsewhere.

ENV 5. FLOOD RISK

- i) **New development or the intensification of existing uses should be planned to avoid risk of flooding (from surface water run-off, fluvial and coastal sources) where possible. The risk of flooding will be minimised by:**
 - steering development towards the areas of lowest risk and avoiding inappropriate development in the higher flood risk zones
 - ensuring development will not generate flooding through surface water run-off and/or exacerbate flooding elsewhere
- ii) **In assessing proposals for development in an area with a medium or higher risk of flooding, the council will need to be satisfied that:**
 - there are no reasonably available alternative sites with a lower probability of flooding (where a site has been allocated this test will have been satisfied) adequate measures will be taken to mitigate the risk and ensure that potential occupants will be safe, including measures to ensure the development is appropriately flood resilient and resistant, and
 - safe access and escape routes are provided where required.

In the case of major development on unallocated sites, wider sustainability benefits should not remove the need to consider flood risk or surface water management, or the need to mitigate accordingly.
- iii) **Development will not be permitted where it would adversely impact on the future maintenance, upgrading or replacement of a flood defence scheme.**

Monitoring Indicator – number of planning permissions granted contrary to the advice of the Environment Agency or Dorset County Council on either flood defence grounds or water quality.

Target: 0

Monitoring Indicator – The extent of the plan area that lies within flood zone 3. **Target:** no net increase.

LOCAL FLOOD ALLEVIATION SCHEMES

2.4.7 Work involving DEFRA, the Environment Agency, Dorset County Council, West Dorset District Council and the Burton Bradstock Flood Action Group has led to the outline design of a scheme to divert surface water run-off from the fields to the north and west of the village, because a number of properties in the centre of the village are liable to frequent flooding (one to two years). Although funding is not currently available to implement the works, the land identified for an alleviation scheme needs to be kept free of built development to ensure that when funding is secured the scheme can go ahead. A similar approach may need to be taken elsewhere in the plan area of as other schemes are progressed.

ENV 6. LOCAL FLOOD ALLEVIATION SCHEMES

- i) **Land to the north of Barrowfield Close and North Hill Close, as shown on the Proposals Map, will be reserved for the implementation of the Burton Bradstock Flood Alleviation Scheme. Any development that would significantly undermine its delivery will not be permitted.**
- ii) **Where schemes are drawn up in consultation with the local community and agreed by DEFRA, the Environment Agency and Dorset County Council, development that would significantly undermine their delivery will be resisted.**

COASTAL EROSION AND LAND INSTABILITY

2.4.8 As a first principle, new development should be directed away from areas vulnerable to coastal erosion and land instability, to avoid putting people at risk. Where there is development close to the coast in areas where there is risk, a sustainable and well informed approach will be taken. Coastal erosion and land instability will have an impact on our existing coastal communities, as there are only limited funds available for new or improved coastal defences. And even if there were sufficient funds, we also need to consider wider impacts of coastal defences on the natural environment. The status of the World Heritage Site depends on allowing these ongoing coastal processes. The introduction of tidal flows in an area can also provide opportunities to re-create inter-tidal habitats, although in places this may have an adverse impact on the integrity of valuable freshwater habitats. Managing coastal erosion is about finding the right balance between the needs of local communities, the economy and the environment, to secure a sustainable and affordable approach to the threat while protecting natural interests.

2.4.9 Although there are uncertainties regarding the extent and pace of sea level rise and coastal change, the Shoreline Management Plan has defined the over-arching strategy for managing the coast, identifying which sections of the coast are to be protected in the short (0 to 20 years), medium (20 to 50 years) and long term (50 to 100 years). However its delivery will be dependent on the funding available at the time. In addition to this, Coastal

Risk Planning Guidance for West Dorset and Weymouth & Portland has been prepared which sets out the nature of risks posed to coastal areas from future coastal change and a detailed exploration of planning for, and managing, adaptation has been undertaken through the Dorset Coastal Change Pathfinder project on the 'Jurassic Coast'. Marine Plans are also to be written, covering defined inshore and off-shore areas, and will help establish where planning conditions or restrictions may be placed on what developers do.

- 2.4.10 Additional coastal defences are currently planned at Lyme Regis and Weymouth Town Centre to continue to defend these areas. Although existing defences will continue to protect the majority of other coastal areas in the medium term, a number of smaller communities will not be defended because of the ongoing sustainability of maintenance and the associated costs. The coastline is expected to continue to erode in areas such as Old Castle Road in Wyke, Bowleaze Cove and Furzy Cliffs, and parts of Ringstead Bay and the river mouth at Charmouth.
- 2.4.11 Managing the risk from coastal change will require further work to be undertaken to identify all the areas likely to be affected by physical changes to the coast, and what limited development may be appropriate according to local circumstances. These areas will be identified as Coastal Change Management Areas (CCMAs).
- 2.4.12 The councils will undertake more detailed studies to inform policy development in these areas using the Coastal Risk Planning Guidance and the Dorset Coastal Change Pathfinder Project. In some locations, the relocation and rollback inland of existing coastal development and infrastructure will also need to be considered carefully alongside landscape, wildlife and visual impacts.
- 2.4.13 Unstable ground conditions may occur on the coast or inland, and can be caused by a variety of factors including coastal erosion and the local geology. Known land instability zones within Lyme Regis and Charmouth are shown on the Proposals Map. Where unstable ground conditions exist, landslides and subsidence may be triggered by natural processes (such as excess rainfall) or manmade processes (such as through excavation or local drainage systems). It is important that proposals for development do not trigger ground movements either within or beyond a development site. The submission of a ground stability report or coastal erosion study may be necessary, depending on the scope and scale of the proposed development.

A ground stability report will not be necessary if the development is unlikely to have the potential to trigger the occurrence of subsidence or land instability either by significantly altering groundwater conditions or by way of a significant change in magnitude of loads applied to the ground (as can reasonably be assessed). The proposed development would also need to meet the following tests:

- i. Surface water run-off is accommodated within existing, fully functioning, piped water disposal systems.
- ii. The combined dead, imposed and wind loads are sustained and transmitted by the development to the ground by use of suitably designed foundations (without requiring adaptation, underpinning, extension or replacement of these foundations at a later stage).
- iii. There is no significant filling or excavation of the ground.

If these tests are not met then the developer will be required to submit to a ground stability or coastal erosion vulnerability report. The report should be prepared by a suitably

qualified and experienced geotechnical specialist, to provide sufficient evidence to demonstrate that the proposed development will not unacceptably adversely affect ground stability or that ground instability can be satisfactorily mitigated in the design of the development. The report should show whether the land / site is stable or could be made stable to support the loads imposed over the expected lifetime of the development, whether the development would threaten land stability in the wider local area, and whether any instability could be reduced to an acceptable level by mitigation and stabilisation measures. Any potential impacts on the character of the area, environmental designations, and public rights of way should also be highlighted.

- 2.4.14 Where necessary to reduce potential risk, a temporary permission may be used to limit the planned lifetime of the proposed development. Restoration conditions may also be imposed.

ENV 7. COASTAL EROSION AND LAND INSTABILITY

- i) New development will be directed away from areas vulnerable to coastal erosion and land instability to avoid putting people at risk unless it can be demonstrated that the site is stable or could be made stable, and that the development is unlikely to trigger landsliding, subsidence, or exacerbate erosion within or beyond the boundaries of the site.**
- ii) The council will identify Coastal Change Management Areas through a supplementary planning document, based on the Shoreline Management Plan and supporting evidence. Within these areas no new development will be permitted for residential or similarly occupied uses. The replacement of properties affected by coastal change may be permitted within a defined area agreed through a community relocation strategy as an exception to normal policy.**

Monitoring Indicator – number of planning applications granted to support roll back in areas of coastal erosion and land instability.

AGRICULTURAL LAND AND FARMING RESILIENCE

- 2.4.15 Agricultural land is an important resource for current and future populations. The production of local food and energy crops can be supported through community initiatives such as allotments, community orchards and community woodland planting. Safeguarding farmland for future local food and energy crop production is an important consideration in planning. Where development of agricultural land is unavoidable, poorer quality land should be used in preference to higher quality land, except where this would be inconsistent with other policy and sustainability considerations. However it is recognised that many settlements would have located in the more productive agricultural areas, and as such options to expand these settlements to meet local needs may inevitably be on higher quality agricultural land.

ENV 8. AGRICULTURAL LAND AND FARMING RESILIENCE

- i) Community schemes providing local food, or crops for local energy production, will be encouraged.**
- ii) Where possible, the council will steer built development towards areas of poorer quality agricultural land where this is available, except where this would be inconsistent with other policy and sustainability considerations.**

Monitoring Indicator – amount of high quality agricultural land lost to development (Grade 1, 2, 3a).

POLLUTION AND CONTAMINATION

- 2.4.16 Past developments and processes, such as old gas works and landfill, may have resulted in contamination of land and water resources, which can pose a threat to human health, the natural environment and general amenity. Few sites are so badly contaminated that they cannot be re-used at all, but the contamination may limit the range of potential future uses and impact on the cost and viability of development. The councils will encourage proposals that help bring contaminated sites into productive use. Where a site is affected by contamination, responsibility for securing safe development rests with the developer and/or landowner .
- 2.4.17 Where it is anticipated that contamination may be present near or on a proposed development area, a contaminated land assessment will need to be submitted. This should establish the likely sources, pathways (such as seepage or air-borne transmission) and risks (including cumulative risks) posed to possible receptors (such as humans, wildlife and public water supplies). In assessing the level of risk, the councils will take into account any remedial works or mitigation included as part of the application.
- 2.4.18 Controls on developments that pose a risk to groundwater are essential in order to ensure an adequate, safe water supply across much of our area. Groundwater feeds into both the public water supply and over 500 private water supplies. This supply may be adversely affected through pollution and may also be depleted through surface water and drainage systems that do not allow water to percolate into the soils. The most vulnerable groundwater sources have been defined as Groundwater Source Protection Areas, and are identified on the Proposals Map.
- 2.4.19 See also Policy ENV 16 which safeguards against development that is likely to result in contaminated land and considers the effects of water pollution on amenity, health and the natural environment.

ENV 9. POLLUTION AND CONTAMINATED LAND

- i) **Development will not be permitted which would result in a significant risk of pollution to ground water sources.**

Planning permission for development on or adjoining land that is suspected to be contaminated will not be granted unless it can be demonstrated that there is no unacceptable risk to future occupiers of the development, neighbouring uses and the environment from the contamination.

Monitoring Indicator – annual change in chemical & biological quality of waterways throughout the plan area. **Target:** no decrease in quality.