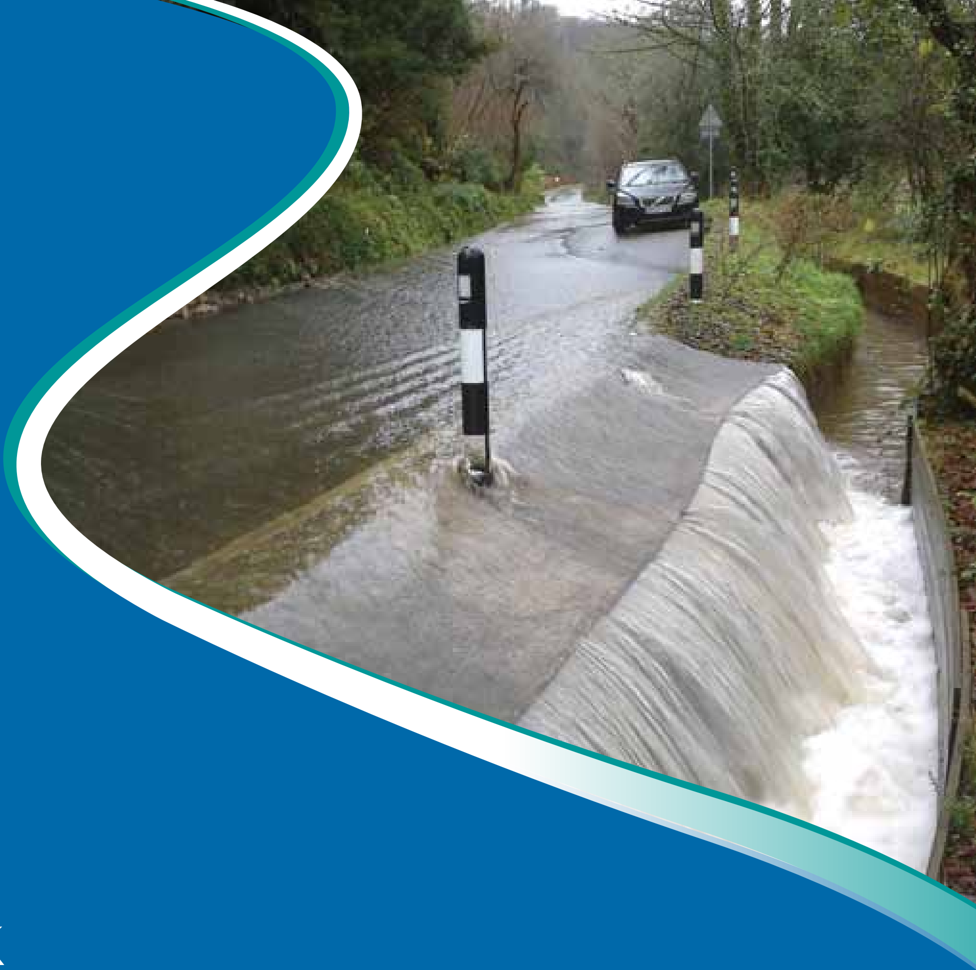


The Cornwall Local Flood Risk Management Strategy:

Part 1 - Strategic Vision

2014

one and all onen hag oll
CORNWALL COUNCIL

Around 1 in 6 properties in Cornwall are in locations that could flood:

From tides - 5,000 properties
From rivers - 12,000 properties
From surface water - 29,000 properties

180 towns, villages or hamlets in Cornwall have 10 or more properties **at risk of flooding**

Multiple significant flood events occurred in:
1992, 1993, 1995, 1997, 1999, 2002, 2003, 2004, 2009, 2010, 2012, 2013

We need to better manage the risk of flooding because:

- It causes distress to the victims of flood
- It causes social upheaval
- There are potential impacts on public health
- Recovery is expensive
- It impacts on the economy

Environment Agency

SOUTH WEST WATER

This document is supported by the Environment Agency and South West Water.

Contents

Part 1 - Strategic Vision

Part 2 - Local Flood Risk Management Profiles

Listed in alphabetical order: Bodmin, Bude, Camborne & Pool, Callington, Camelford, Falmouth & Penryn, Hayle, Helston, Launceston, Liskeard, Looe (East & West), Lostwithiel, Mevagissey, Mousehole, Newquay, Padstow, Penzance & Newlyn, Par & St Blazey, Perranporth, Polperro, Porthleven, Portreath, Redruth, St Agnes, St Austell, St Ives, Truro, Wadebridge.

Available on the Cornwall Council website at www.cornwall.gov.uk/floodrisk

Part 3 - Local Flood Risk Management Action Plan

Available on the Cornwall Council website at www.cornwall.gov.uk/floodrisk

Foreword

Cornwall is at risk of flooding. This can be from intense rainfall overwhelming drainage systems and sewers, from rivers overflowing and along our coasts through high tides and stormy seas.

Development pressures, ageing flood defences and infrastructure vulnerable to flooding increases this risk as does an ever more variable and unpredictable climate.

Cornwall Council recognises that we cannot eliminate these risks so we must try to manage them as best we can.

Cornwall is the first part of the UK to meet the prevailing Atlantic weather systems so we often have limited forecast times. This means we need to be prepared for whatever the weather throws at us.

Cornwall has many steep sided river valleys with small catchments that respond quickly to rainfall. A period of intense rain can result in rapid flooding with little warning, as was seen in Boscastle in 2004.

Many communities are located on exposed coastlines at the bottom of steep river valleys and are at risk of flooding from fast flowing rivers and stormy seas with large waves. The hazard to people and property can be high.

Climate change poses greater future risks with the likelihood of more intense rainfall that increases flood peaks in small rapidly responding catchments. Coastal areas will also be more likely to be affected by rising sea levels and by more frequent and larger storm surges and rougher seas with larger waves.

Cornwall is a popular tourist destination and many visitors may be unaware of local risks.

We need to expect and be prepared for flooding. Effective multi-agency and community flood plans, including vulnerable caravan and camp site plans are an essential part of this preparation.

With all this we also have to recognise that there are future challenges of funding for flood defence projects. These challenges call for a greater emphasis on partnership and alternative funding mechanisms as well as for building resilience within communities.

These communities may be fragile but we have recently seen some fantastic examples of community spirit as people work together to make their neighbourhoods more resilient.

We need to seek interventions that provide the best returns. This may involve alternative approaches to just building more defences, such as allocating space for flood water and working with the natural environment to slow and store water.

By publishing this local Strategy we hope to provide a greater awareness of the issues and to be transparent and open in our approach to interpreting national strategy at an appropriate local level.

Councillor Edwina Hannaford
Portfolio Holder for Environment, Heritage and Planning

Raglavar

Kernow a berth peryl a livans. Hemm a yll bos dhyworth glawas glew a worlenow karthkleudhyansow ha kawghbibow, dhyworth avonyow a fenn, hag a-hys agan arvoryow, dre vortidys ha moryow tewedhek.

Gorholedhow displegyans, defensow liv a gothha, hag isframweyth yw goliadow dhe livans a voghha an peryl ma kepar del wra ynwedh hin yw pup-prys moy chanjus hag andharganadow.

Konsel Kernow a aswon na yllyn dilea an peryllow ma ha rag henna res yw dhyn assaya aga dyghtya gwella gyllyn.

Kernow yw an kynsa rann a'n RU a dheu er-bynn systemow gwarthevyek kewer an Atlantek may ma dhyn spysow darganow yw yn fenowgh berr lowr. Hemm a styr bos edhom dhyn a ombareusi rag pypynag a dewllo er agan pynn ni an gewer.

Kernow a's teves lies downans avon ha dhedha emlow serth ha kreunvaow byhan a dhasober yn skon dhe lawas. Sewyans spys a lawas glew a yll bos livans uskis heb meur a waynyans, del veu gwelys yn Kastel Boterel yn 2004.

Desedhys yw lies kemeneth war arvoryow diglos a-barth woles dhe dhownansow serth avonyow, hag yma peryl dhedha a livans der avonyow serth a fros yn uskis ha moryow tewedhek ha dhedha mordonnow bras. An peryl dhe dus ha dhe gerthow a yll bos sevur.

Chanjyow y'n hin a brof peryllow brassa y'n termyn a dheu, gans chons a lawas glewa a voghha ughboyntow livans yn kreunvaow byhan a dhasober yn uskis. Y fydh moy gwirhaval may fydh morebow nasyes gans nivelyow mor owth uhelhe ha gans brassa hwythfiansow tewedh ha moryow garowa gans mordonnow brassa.

Tyller meurgerys rag havysi yw Kernow ha martesen ny aswon lies vysytyer an peryllow leel.

Res yw dhyn gwaytyas ha bos parys rag livans. Towlow effeythus liesmayn ha kemenethek rag livans, y'ga mysk towlow rag karavans ha kampvaow, yw rann essensek a'n darbarow ma.

Gans oll a hemma res yw dhyn aswon ynwedh bos chalenjys devedhek yn kever arhasans a-barth ragdresow defens livans. An chalenjys ma a ergh brassa poos war geskowethyans ha maynys ken arhasans keffrys ha gwedhynder drehevyansow yn kemenethow.

Martesen hedor yw an kemenethow ma mes ni re welas a-gynsow ensamplow bryntin a spyrys kemenethek ha tus ow kesoberi rag gul dh'aga hentrevethow moy gwedhynder.

Yma edhom dhyn a hwilas melyansow a brovi an gwella prow. Martesen hemm a wra myska ken maynys a-der drehevel moy defensow yn unnik, kepar ha gorra a-denewen spas rag dowrow liv hag oberi gans an kerhynnedh naturel rag lenthe ha gwitha dowr.

Dre dhyllo an Strateji leel ma govenek a'gan beus previ warneth vrassa a'n maters ha bos ylyn hag igor ha ni ow tisplegya stateji kenedhlek orth nivel leel gwiw.

Konselores Edwina Hannaford
Synsyades Plegel rag Kerhynnedh, Ertach ha Towlennans

Executive Summary

The Local Flood Risk Management Strategy for Cornwall sets out how Cornwall Council and its partner authorities intend to work together to manage flood risk from all sources.

The vision for Cornwall is:

- We will work with our communities and other Flood Risk Management organisations to manage the likelihood and impact of flooding and coastal change for the benefit of our communities, visitors, businesses and environment.
- We will support local people and businesses to take part in managing the risks that affect them.
- We will coordinate information sharing, plan making, prioritising investment and effective project implementation.
- We will prioritise high risk locations for proposed improvement schemes.

This vision for managing flood risks in Cornwall is underpinned by seven overarching and cross-cutting themes:

A Working together

B Evidence

C Communities

D Development planning and regeneration

E Catchment approach

F Prioritising and funding

G Multiple benefits

Each theme is supported by high level objectives, aims and measures and is explained in Section 3 of this document.

This Local Flood Risk Management Strategy for Cornwall covers the period 2014 to 2020 and comprises three parts:

- **Part 1:** Strategic Vision (within this document). This will be reviewed in 2020.
- **Part 2:** Local Flood Risk Management Profiles. These will provide information on high priority communities and will be continually updated.
- **Part 3:** Local Flood Risk Management Action Plan. This will be issued annually.

Cornwall Council has adopted this Local Flood Risk Management Strategy to guide the development of policy and programmes across its operations and in its work with other organisations, communities and stakeholders.

> “We will support local people and businesses to take part in managing the risks that affect them.”

1 An Introduction to the Cornwall Local Flood Risk Management Strategy

1.1 Why we need a flood risk Strategy

Recent legislation designed to rationalise Flood Risk Management (FRM) in the UK has set Cornwall Council as the Lead Local Flood Authority (LLFA) for Cornwall. A number of duties are associated with this role, which includes taking greater ownership of local Flood Risk Management issues.

As a LLFA, Cornwall Council is required to develop, maintain, apply and monitor a Local FRM Strategy. The format and nature of this Strategy has been developed to address Cornwall's particular circumstances. By publishing this local Strategy, Cornwall Council demonstrates a will to drive forward and interpret national strategy at an appropriate local level to achieve the best outcomes for Cornwall.

We are not expected to do this alone. Other authorities and the general public have parts to play.

1.2 The aim of the Local Flood Risk Management Strategy

The aim of the Cornwall Local FRM Strategy is to provide a transparent approach for managing and reducing flood risk in a way that benefits people, property and the environment. It is the focal point for integrating flood risk related actions across Cornwall. This Strategy includes a range of objectives to support this aim – see Section 3.

1.3 Where the Strategy fits

The Cornwall Local FRM Strategy is an important tool to help manage flood risk in Cornwall. It will be used to guide and join up the policies and actions from different organisations and in different parts of Cornwall.

This Strategy provides linkages between national legislation and high level plans with local plans and community level actions. Some of these main linkages are illustrated in Figure 1.

Flood risk also needs to be considered alongside other strategies such as transport plans, strategic planning, environmental and economic objectives and sustainable development as shown in Figure 2.

The Strategy applies to all forms of flooding (Table 3 on page 14), not just those that Cornwall Council is required to address, because the sources of flooding in Cornwall are often interrelated.

1.4 How this Strategy was prepared

It is produced by Cornwall Council in partnership with the Environment Agency and South West Water and in consultation with other local partners. In Cornwall we see this as an opportunity to continue improving the way we work together so that we can provide a shared vision for how flood risk, coastal change and land drainage issues should be managed in the future.

1.5 Overview of Strategy assessments

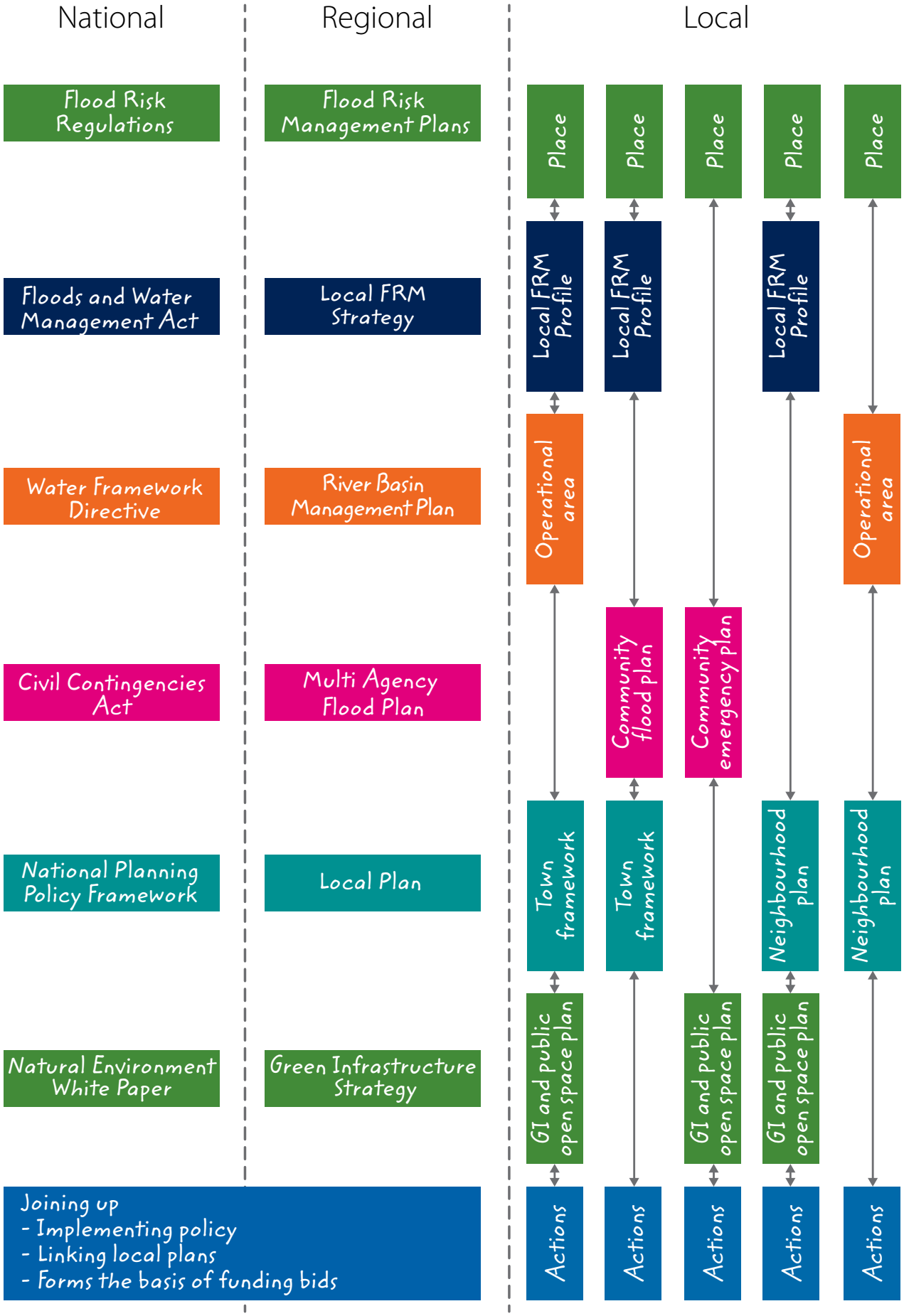
In developing the Local FRM Strategy, Cornwall Council has carried out a range of assessments to identify social, economic and environmental impacts. The Strategy is accompanied by a Comprehensive Impact Assessment, a Habitats Regulations Assessment and a Sustainability Appraisal (which covers the requirements for Strategic Environmental Assessment, Water Framework Directive Compliance and Health Impact Assessment).

1.6 Communication

It is particularly important that effective communication takes place with the public to make sure that residents, visitors, employers and others have the knowledge to contribute to their own resilience to flooding and can be actively involved in Flood Risk Management.

Our communication of the key messages should be clear and we will use different methods to raise awareness. However, we will rely heavily on cost free advertising such as the Council's website.

Figure 1: Plans and Actions: How national, regional and local plans link together (see glossary for definitions)



1.7 Structure of this Strategy

The strategy is in three parts:

Part 1. Overarching strategic vision, aims, measures. (This document)

Part 2. Profiles of high priority communities. (Available at www.cornwall.gov.uk/floodrisk)

Part 3. An Action Plan. (Available at www.cornwall.gov.uk/floodrisk)

Part 1 is this document representing the over-arching strategy and vision. It contains a series of objectives, aims and measures, grouped by seven themes within Section 3.

Part 2 of the Strategy consists of a series of community level Local Flood Risk Management Profiles. These contain specific flood risk information for a series of (initially 28) high priority communities. These communities were identified using the Cornwall Preliminary Flood Risk Assessment (PFRA) in 2011. The PFRA was required to comply with recent national and European legislation.

The communities that are currently the subject of Local FRM Profiles are located in Figure 3. Each Profile acts as a focus for flood risk information at a community or town level. They bring together information from a number of national, regional and local sources – including from our partner authorities – and provide interpretations of the main issues, risk management options, constraints, opportunities and actions.

Part 3 of the Strategy is the Flood Risk Management Action Plan. The FRM Action Plan uses the information from the Profiles in Part 2, or other sources for areas where a Local FRM Profile has not been compiled. The Action Plan identifies potential Flood Risk Management schemes, objectives and initiatives to be pursued, along with identifying potential funding sources. The actions and interventions can be cross-referenced with the aims contained within the Strategy Vision (Part 1). The Action Plan is used to inform the Medium Term Plan for flood defence funding. It allows Flood Risk Management actions to be prioritised and for investment plans to be focussed and coordinated.

1.8 Monitoring and review

The timescales for review of the Strategy are set out in Table 1, overleaf. The Local FRM Strategic Vision will be reviewed on a six year cycle, the next review being in 2020. The Local FRM Profiles will be continually amended and updated as further issues and information come to light. The latest versions are available on the Cornwall Council website. The FRM Action Plan will be updated on an annual basis.

Figure 2: The Local Flood Risk Management Strategy's relationship to other strategies and policies

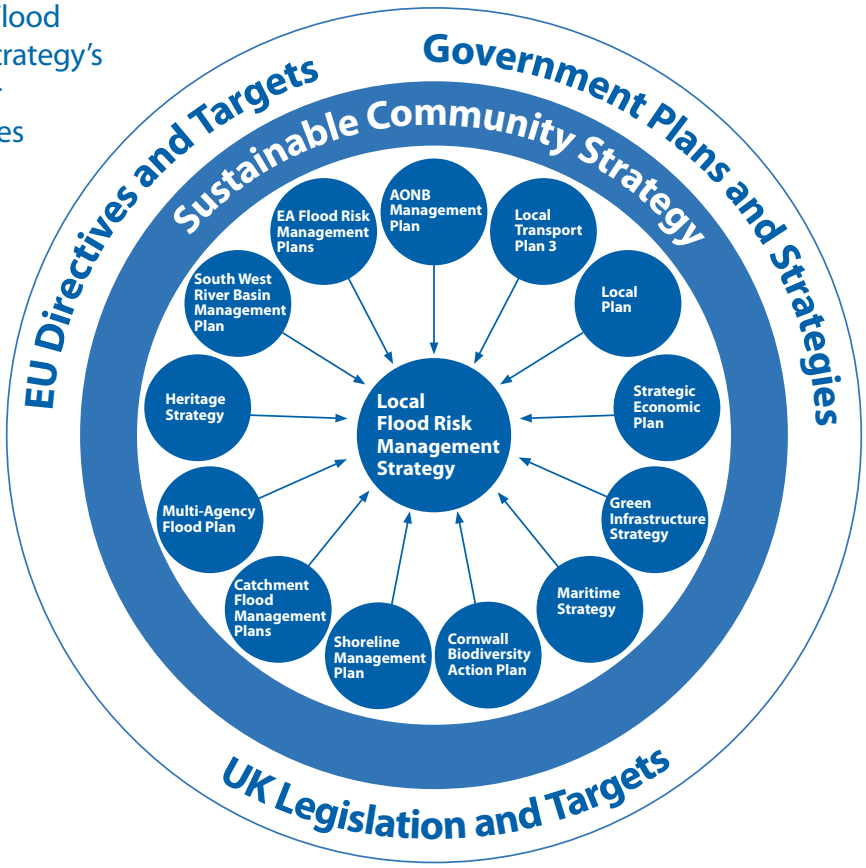


Figure 3: Locations of priority communities identified from the PFRA analysis, 2011

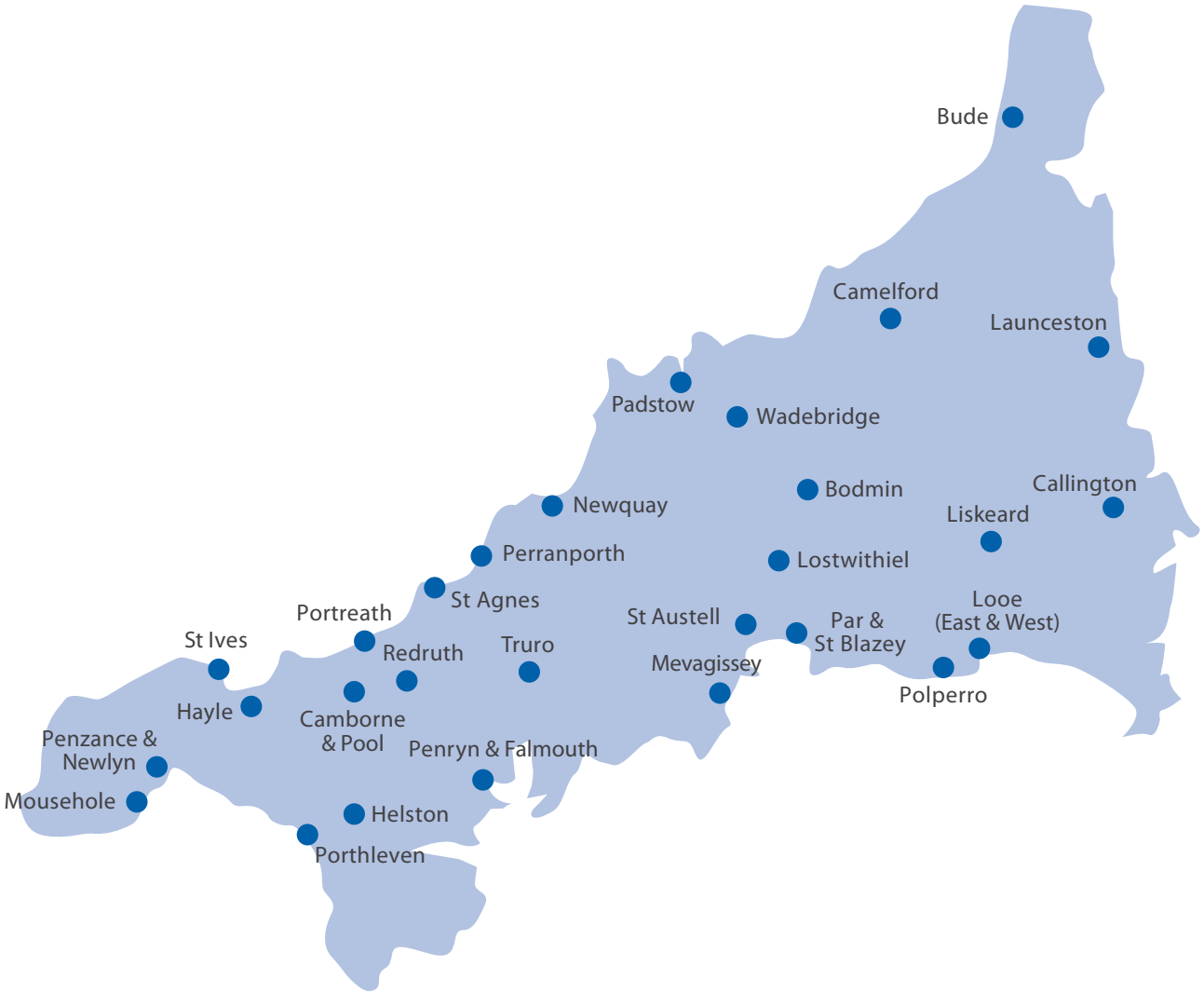


Table 1: Composition and review of the Local Flood Risk Management Strategy

Local Flood Risk Management Strategy for Cornwall	**Part 1:** Local FRM Strategic Vision Section 3 of this document	Reviewed on a 6 year cycle
	Part 2: Local FRM Profiles Evidence base for each community (initially 28: One for each priority community identified from the PFRA process)	Living documents Updated as required
	Part 3: Local FRM Action Plan Supporting flood defence applications and other interventions based on the issues identified in Part 2 for high risk communities and local information for smaller communities	Reviewed annually in alignment with the Medium Term Plan (MTP) process

2 Flood Risk Management in Cornwall

2.1 The wider picture – Flood Risk Management planning

The Cornwall Local FRM Strategy is about implementing national standards and policies by aligning them with local needs and issues (see Figure 2).

Aligning to flood risk legislation

FRM planning is carried out at international, national, regional and local scales. The Local FRM Strategy provides a Cornwall-wide perspective.

In 2008 The Pitt Review reported on the lessons learned from the summer of 2007 floods that affected much of the UK.

Many recommendations of this review are enacted through the Flood & Water Management Act (2010). This Act designated upper tier and unitary authorities in England and Wales as Lead Local Flood Authorities (LLFA). Cornwall Council is therefore the LLFA for Cornwall.

The EU Floods Directive (2007) is implemented in the UK through the Flood Risk Regulations (2009). It requires LLFAs to publish a Preliminary Flood Risk Assessment (PFRA). This measures flood risk nationally to Flood Risk Areas.

At national level ten flood risk areas were identified in England in this round of assessment. The nearest of these to Cornwall is Bristol.

However, the PFRA did identify potential flood risks that should be considered and included in a Local FRM Strategy.

The locations of the Local FRM Profiles comprising Part 2 of this Local FRM Strategy (Figure 3) have been selected using the PFRA process.

The Flood Risk Regulations also require the Environment Agency to produce FRM Plans for main rivers, reservoirs and the sea in accordance with the National FRM Strategy (2011). Actions from the Local FRM Strategy will inform the Environment Agency FRM Plan to be published in 2015. This will create a co-ordinated overview of community flood risk for Cornwall.

Aligning to environmental plans

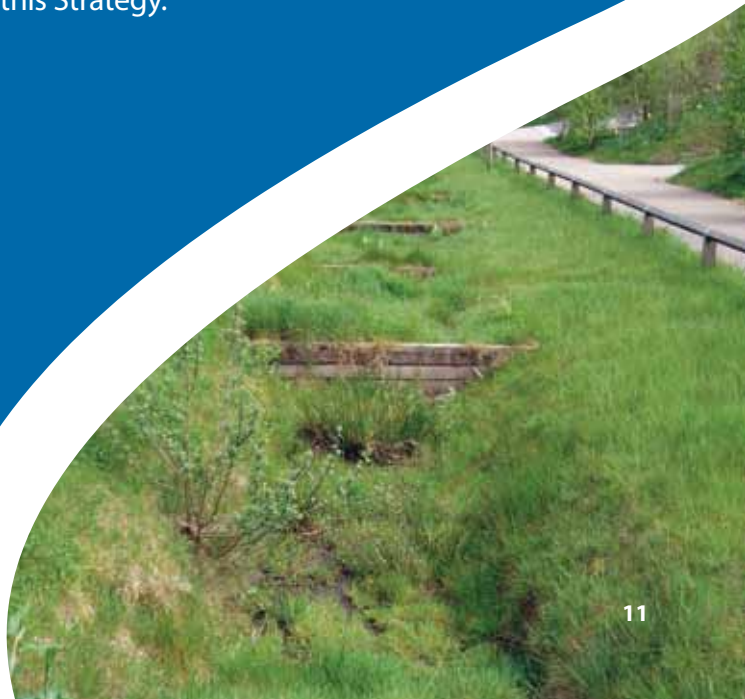
The EU Water Framework Directive (2000) seeks to enhance the natural water environment by setting targets for chemical, biological and physical improvements.

At a regional level it is applied through River Basin Management Plans (RBMP). The South West RBMP was published in 2009 and is due to be republished by the Environment Agency in 2015 in line with a six year cycle set within the EU directive. RBMP actions will be identified in the Local FRM Profiles (Part 2) of this Strategy to inform the Action Plan (Part 3) in order to maximise opportunities for environmental improvements.

Aligning to high level flood and coastal management plans

The Catchment Flood Management Plans (2008) and Shoreline Management Plans (2011) consider medium and long term approaches to managing inland and coastal flooding and erosion.

Actions and objectives arising from these plans are included within the Local FRM Profiles in Part 2 of this Strategy.



Aligning to new development management and planning

Flood risks are considered by planning authorities through the National Planning Policy Framework. New development is directed toward areas with the lowest flood risk and designed so it does not increase flood risks for others.

Planning authorities must consider flood risk in a Level 1 Strategic Flood Risk Assessment (SFRA1). Any areas identified for strategic development within the Development Plan require a Level 2 Strategic Flood Risk Assessment (SFRA2). To avoid duplication, the Local FRM Profiles that form Part 2 of this Strategy will be used as necessary as the SFRA2 for the Site Allocations Development Plan Document accompanying Cornwall Council's Local Plan.

Areas with particular recognised drainage constraints are designated as Critical Drainage Areas. In these areas we expect new development to contribute to improving the general flood risk situation and apply more stringent controls on surface water management through local standards set out in published drainage guidance for Cornwall.

Aligning to incident management

Emergency planning is guided by the Civil Contingencies Act (2004). At times of flooding, Cornwall Council is a Category 1 responder, along with the police, fire and rescue services, the ambulance and health services and the Environment Agency. Category 2 responders are key co-operating organisations such as utility companies and transport services.

Outlet structure in an area designed to flood

Private roof and surface water directed onto the highway

Coordination between these responders is achieved through a Local Resilience Forum covering the Devon and Cornwall Police Authority area.

Cornwall Council's Emergency Management team manage multi-agency flood plans for the highest risk communities and work with the Environment Agency to help and encourage local communities – particularly those in recognised rapid response catchments – to produce local community emergency plans.

This Strategy should enable all people involved in drawing up emergency plans to have access to and make use of the best available data and information on local flood risk. This will also provide the basis for stakeholder engagement including two-way feedback between communities and emergency management authorities.

Policy

Cornwall Council, the Environment Agency and the local communities will have Community Emergency Plans in place by Easter 2015 in all identified high risk locations.

2.2 Factors that may influence the future of local Flood Risk Management

Alongside the national and local policy context, there are a range of other factors that are likely to influence future flood risk in Cornwall. Whilst the future is difficult to predict, trends can help point us to the challenges that are likely to be faced over the lifetime of this Strategy. In developing the Strategy, these key trends or future drivers helped to predict likely future issues and opportunities. The key trends that may affect FRM in Cornwall are summarised in Table 2.

Table 2: Key trends and factors influencing local flood risk in Cornwall

Governance

- Localism provides opportunities for communities to exercise greater control, as underpinned by the Localism Act 2011.
- Devolution and the creation of Cornwall's unitary authority (2009) gives the Council greater powers and gives it more opportunities than ever before to shape the local agenda.

Sustainable communities

- Sustainable communities are places where the needs of all its people, business and environment are met in a balanced way.
- Creating sustainable communities is the focus for changes at the community level, as promoted by the Sustainable Communities Act (2007).

Development and growth

- Development pressure and housing affordability are significant problems related to economic climate, second home ownership, continued migration into Cornwall and people living in smaller households.
- Green spaces are under pressure from both residential and commercial development.
- Existing built up areas tend to become denser with time, for instance by paving over gardens to provide parking areas.

Regeneration

- Rejuvenation of old industrial or run-down areas may provide a pressure to build new facilities in flood prone areas.
- Regeneration also provides an opportunity to increase resilience to flooding of modern development schemes.

Leisure and tourism

- More people are choosing to holiday in the UK, and the season is extending, giving rise to increased pressure on Cornwall's coast and seaside towns, with many susceptible to flooding. Caravan and campsites are particularly vulnerable to flood dangers.
- Growth and protection of tourism and leisure assets are expected and are key to Cornwall's economy.

Travel

- In addition to the protection of homes and businesses, infrastructure such as road, rail and air is also at risk of flooding. Travel disruption can have economic and safety implications.

Technology

- Better data collection and modelling can provide an improved understanding, identification and assessment of flood risk.
- Technological advances and innovations, such as those at the National Flood Forecasting Centre, are providing more accurate and detailed flood alerts.

Mining legacy

- Cornwall contains an extensive system of mines with related tunnels, works and drainage adits that alter the natural flow of water.
- These old mines are abandoned and the drainage adits are not maintained. The consequences of a failing mine drainage infrastructure may include wash-out of contaminated sediments, higher groundwater levels and sudden breakouts of minewater.

Climate change

- Global warming may lead to increasingly uncertain weather patterns, with potential for increased rainstorm intensities in the future, as well as potential for increased drought.
- Greater investment in flood defences may be required just to maintain present standards of protection in the future.
- An increase in rainfall intensity of 30% is accepted across a 100 year planning horizon.

Sea level rise

- Sea levels have been rising since the end of the last glaciation around 20,000 years ago. Global warming would appear to be accelerating this process.
- Predictions about how quickly sea levels will respond to global warming are inexact and estimates vary between about 0.3 m and 2.0 m over the next 100 years; with 1.0 m rise considered to be a reasonable estimate for planning purposes.

Coastal change

- Rising sea levels and potentially stormier conditions can lead to increased erosion of the coast and breakdown of existing defences resulting in a squeeze of the coastal zone and putting existing development and infrastructure at greater risk.
- Recognise that natural coastal processes can have an impact on adjacent stretches of coast.
- Long term management of the shoreline will impact on coastal communities.

Insurance

- Household and business insurance against flooding is becoming increasingly expensive for those at highest risk.

Flood Defence Funding

- Government funding is becoming more limited, requires increasing cost-benefit ratios and investment is required from alternative sources.
- Flood defence assets also require ongoing maintenance to avoid deterioration.

Environmental and ecological aspirations

- The Water Framework Directive is a major driver for seeking improvements to the water environment.
- Environmental benefit will increasingly be sought from flood management interventions.
- Habitat recreation and enhancement throughout the catchment can help to alleviate flood risk both beside rivers and at the coast.

Land use changes

- In addition to development, changing agricultural practices can create pressures that increase flood risk.

2.3 Types of flood risk

Flooding is a natural process which shapes the environment and provides important benefits such as improved soil fertility and maintenance of ecosystems. Problems occur when we want to live in, travel across or use areas that occasionally flood. In some areas it is clear that flooding occurs regularly, such as in river floodplains and tidal zones. In other areas flooding may be more sporadic or caused by our intervention, such as changes in land use, construction of roofs, paving or blocked sewers.

The main types of flooding affecting Cornwall are listed in Table 3. These flooding mechanisms often occur at the same time and may interact with each other leading to combined impacts and requiring complex solutions.

Combined sewer overflow (CSO)

Table 3: Types of flooding in Cornwall

Pluvial (Rain)	Caused by intense rainfall accumulating on the ground before it can flow away. An increase in the frequency or intensity of short sharp rainfall events will lead to more pluvial flooding.
Surface water	Rainwater travelling across the surface of the ground or roads on its way to a drainage system, or flowing out of an overloaded drainage system. Usually associated with pluvial flooding and short intense rainfall events.
Fluvial (River)	When the capacity of a watercourse is exceeded and the banks are overtopped. Most rivers would naturally overflow onto their floodplain once every year or so unless walls or embankments are constructed to contain it.
Sewers	Sewers may carry foul water, rainwater or both (combined). If the capacity of a rainwater or combined sewer is exceeded due to heavy rainfall then it can flood onto the surface. Combined sewers flow to sewage treatment works but may overflow into a watercourse through a combined sewer overflow. Rivers and beaches may become polluted by overflows from combined sewers.
Tidal	May occur on the coast or in estuaries and low lying river reaches. High spring tides may be fairly predicable but weather conditions can create storm surges that add significantly to water levels. Both tidal levels and storm surge frequency are expected to increase in the future. Also in Cornwall fluvial flooding may be increased through tide-locking at the river mouth.
Coastal	Associated with high tides but also includes the additional effects of winds and waves. May also interact with coastal erosion issues.
Groundwater	When the water table rises above the ground surface resulting in springs or boggy conditions. In Cornwall this may include break out from mine drainage systems.
Reservoir	Caused by overtopping or breaching of a dam used to impound water. This could result in a large volume of water being released very quickly.

2.4 Responsibilities for local Flood Risk Management

There are a number of partner organisations with which Cornwall Council shares responsibilities for managing flood risks. The main Flood Risk Management Authorities are listed in Table 4.

In addition, many other organisations, public and private bodies and groups have a role to play in delivering this Flood Risk Management Strategy, including but not limited to those listed in Table 6.

2.5 Public engagement

It is recognised that members of the public may also have valuable information to contribute to the FRM process and to the local management of flood risk more generally across Cornwall. Stakeholder engagement can afford significant benefits to local FRM including building trust, gaining access to additional local knowledge and increasing the chances of stakeholder acceptance of options and decisions proposed in FRM strategies.

An interactive internet mapping site for flood risk was developed in 2009 as part of the SFRA1 process. It is envisaged that this will continue to be used as a publicly accessible portal for accessing flood risk information for Cornwall. It is also used by the public to provide feedback to the Council on FRM issues. The site can be accessed at: http://mapping.cornwall.gov.uk/website/sfra/

2.6 Cornwall Community Flood Forum and community groups

Cornwall Council is fully committed to supporting the Cornwall Community Flood Forum (CCFF). This group was born out of the recovery process resulting from the floods of November 2010 that severely affected mid Cornwall and St Austell Bay communities.

The CCFF provides guidance and assistance to local groups and town or parish councils to respond to flooding emergencies and to be resilient to flooding. It also provides a link to the National Flood Forum. More information is available on the Cornwall Community Flood Forum website. http://cornwallcommunityfloodforum.org.uk

Coastal flood risk

Table 4: FRM functions for Cornwall Council and others

Cornwall Council as the Lead Local Flood Authority is responsible for overseeing the flood risk from Ordinary Watercourses (see Glossary), groundwater and surface water runoff. It is also responsible for a number of other actions:

- Investigating flood incidents – investigate and record details of significant flood events within their area.
- Asset Register – maintain a register of structures or features which are considered to have a Flood Risk Management function.
- SuDS Approving Body – evaluate, approve and adopt any new sustainable drainage system (SuDS) within their area.
- Works Powers – undertake works to manage flood risk from surface runoff and groundwater.
- Designation Powers – designate structures and features that affect flooding or coastal erosion in order to safeguard assets.
- Consenting for works on Ordinary Watercourses - this role has been taken over from the Environment Agency.
- Local Flood Risk Management Strategy – develop, maintain, apply and monitor a local strategy for Flood Risk Management in its area (this Strategy).

Cornwall Council as the Land Drainage Authority with powers under the Land Drainage Act (1991), such as the implementation and maintenance of flood defences on ordinary watercourses, to maintain flows and to remove obstructions and any unauthorised structures on ordinary watercourses.

Cornwall Council as the Planning Authority is responsible for the preparation of development plans and making decisions based on planning policy.

Cornwall Council as the Highway Authority is responsible for surface water on the highway and maintaining gullies and culverts to ensure effective highway drainage.

Cornwall Council as an Emergency Management Authority has duties under the Civil Contingencies Act to coordinate the Council's activities both during and after an event such as a major flood and to engage with communities, helping them through the recovery phase.

Cornwall Council as the Coastal Authority is responsible for managing coastal erosion, though the Environment Agency take a strategic overview role.

The Environment Agency is responsible for managing the risk from the sea, Main Rivers (see Glossary) and reservoirs and has a strategic overview role for all Flood Risk Management, making it a key local partner for Cornwall Council, especially when managing the risk from combined sources and in the event of a large flood incident. The Environment Agency also provides a flood warning service throughout England and Wales in areas at risk of flooding from rivers or the sea. The Environment Agency also set high level and long term strategies and is responsible for producing its own FRM Plans

South West Water as the relevant Water and Sewerage Company in Cornwall is responsible for supplying clean drinking water and for removing and processing waste water. SWW own and maintain the public sewerage system and are responsible for managing flooding from these sewers. SWW is governed by the Water Industry Act (1991), where the duty of the sewerage undertaker is to provide, improve and extend public sewers to ensure that the area is and continues to be effectually drained.

The Highways Agency is responsible for managing, maintaining and improving motorways and trunk roads and their associated drainage and flood risk across England. In Cornwall the Highways Agency has responsibility for the A30 and A38 trunk roads.

Land/Property Owners that have a watercourse in or adjacent to their land have riparian responsibilities on that watercourse. This means the landowner must:

- Let water flow through their land without any obstruction, pollution or diversion which affects the rights of others.
- Accept flood flows through their land, even if these are caused by inadequate capacity downstream.
- Keep the banks clear of anything that could cause an obstruction and increase flood risk, either on their land or downstream if it is washed away.
- Maintain the bed and banks of the watercourse and the trees and shrubs growing on the banks and clear any litter or debris from the channel and banks, even if it did not come from their land.
- Keep any structures such as culverts, trash screens, weirs and mill gates clear of debris.

All Risk Management Authorities have a duty to co-operate and to share information in relation to their Flood Risk Management functions.

Cornwall Council, working with its partners, is currently pursuing funding totalling over £55m for major strategic projects, including:

Table 5: Locations for prioritised actions

Where	What	Protecting	Lead Authority
Bude	Improving flood defence infrastructure.	70 residential and 70 commercial properties.	EA, CC
Hayle	Improving flood defence infrastructure.	300 residential and 120 commercial properties.	EA, CC
Helston	Improve flood defence infrastructure and upper catchment land management.	150 residential and 50 commercial properties.	EA
Looe	Construct flood walls, demountable defences and pump systems.	110 residential and 180 commercial properties.	EA, CC
Newlyn	Making major improvements to the harbour and provision of waterfront defences such as walls, gates and tide flaps.	150 residential and 70 commercial properties.	EA, CC, SWW
Par and St Blazey	Multiple projects including highway improvements, water sensitive regeneration, green infrastructure improvements and catchment-based approaches.	560 residential and 260 commercial properties.	EA, CC, SWW
Penryn	Reducing the risk of tidal flooding by undertaking works to defence assets including walls, gates and tide flaps.	20 residential and 15 commercial properties.	CC
Penzance	Undertake shoreline protection works.	106 residential and 20 commercial properties plus the strategic highway route and the mainline railway.	CC
Redruth	Managing floodwaters through the Brewery Quarter to allow regeneration to happen.	New housing, businesses and Archive Centre.	CC
St Austell	Realignment of the banks of the White River to increase storage and create new habitat.	45 residential and 60 commercial properties, including the sewage treatment works.	CC
Wadebridge	Delivery of new flood schemes, upgrading of existing defences and habitat creation.	170 residential and 80 commercial properties.	EA, CC
Cornwall-wide	Provision of property level protection to increase resilience of buildings where flooding cannot be avoided.	50-60 residential properties each year.	CC

3 The Strategy

3.1 Vision for Local Flood Risk Management in Cornwall

We will aim to manage flood risk so that no new flood risk is created and flood risk is reduced wherever possible. This will help to reduce the number of people, homes and properties at risk of flooding and coastal change.

- We will work with our communities and other Flood Risk Management organisations to manage the likelihood and impact of flooding and coastal change for the benefit of our communities, visitors, businesses and environment.
- We will support local people and businesses to take part in managing the risks that affect them.
- We will coordinate information sharing, plan making, prioritising investment and effective project implementation.
- We will maintain an ambitious ongoing programme of capital flood defence projects.

This vision for managing flood risks in Cornwall is underpinned by seven overarching and cross-cutting themes:

A Working together

B Evidence

C Communities

D Development planning and regeneration

E Catchment approach

F Prioritising and funding

G Multiple benefits

Each theme is supported by high level objectives, aims and measures and is explained in turn over the next few pages.

A: Working together

Objective A. Take a collaborative approach to flood risk and coastal change management in Cornwall.

Aims

A1 Encourage communities to work together to understand flood risk, the various roles and responsibilities of themselves and others and play their role in Flood Risk Management.

A2 Optimise communication between Flood Risk Management partners and communities and ensure that flood risk and coastal change messages to communities are clear and consistent.

A3 Encourage a collaborative interpretation of evidence to provide a clear understanding of flood risk from all sources and how they interact.

A4 Actively encourage skills and capacity building amongst flood risk partners and communities at risk of flooding.

Measures

A5 Establish a Flood Risk Partnership of Flood Risk Management authorities and communities to share intelligence and coordinate actions.

A6 Adopt transparent and mutually accepted decision making procedures between flood risk partners.

A7 Deliver a coordinated strategy, policy and action plan showing how different flood risk organisations and local communities work together to reduce flood risk from all sources.

A8 Establish clear and simple data sharing and collection procedures between partners that increase efficiency and avoid duplication.

A9 Work with research establishments to discover innovative approaches to manage flood risk and increase resilience to flood risk and coastal change.

We know we are achieving this when:

- Cornwall Council, The Environment Agency, South West Water, the community and other partners work together to deliver FRM interventions for the benefit of all.
- A common understanding of issues, risks and opportunities are used to align priorities, funding and delivery.

Table 6: Examples of organisations with a role to play in effective Flood Risk Management in Cornwall

Risk Management Authority

- Cornwall Council
- Environment Agency
- South West Water
- Highways Agency

Cornwall Council Roles

- Flood and Drainage
- Emergency Management
- Highways
- Historic Environment
- Public Health and Protection
- Planning and Regeneration
- Public Open Spaces
- Maritime
- Localism and Devolution
- Natural Environment
- Arms length companies and contractors

Governmental Bodies

- Department for Energy and Climate Change
- Department for Environment, Food and Rural Affairs
- Department for Communities and Local Government
- Local Government Association

External Stakeholders, such as

- The public
- Town and parish councils
- Academia
- Natural England
- English Heritage
- Port and Harbour Authorities
- Local Resilience Forum
- Public Health England
- NHS
- Health and Wellbeing Board
- Network Rail
- National Trust
- Cornwall Wildlife Trust
- AONB Partnership
- Westcountry Rivers Trust
- RSPB
- Local Enterprise Partnership
- Local Nature Partnership
- Surfers Against Sewage
- Cornwall Community Flood Forum
- National Farmers Union
- Country Land and Business Association
- Voluntary and Community Sector

B: Evidence

Objective B. Evidence is collated and interpreted to inform the delivery of appropriate Flood Risk Management

Aims

B1 Ensure that sound evidence, including on socio-economic, health and environmental impacts is used to underpin decisions about managing and reducing flood risk, taking into account the impacts of climate change.

B2 Flood defence and drainage systems are understood so that they can be managed and developed in a sustainable and cost effective way.

B3 Identify the impacts of climate change on flood risk and coastal change and identify actions to mitigate and manage its impact.

Measures

B4 Work with the latest available research and modelling to understand flood risk from all sources, how they interact and the impact of climate change on flood risk and a changing coast.

B5 All partners share a consistent and coordinated evidence base.

B6 Work with academic establishments and researchers to better understand the complexities of managing flood risks in Cornwall.

We know we are achieving this when:

- The wellbeing, economic, social and environmental costs of flooding reduce over time despite the pressures for these to increase.
- The risk management solutions take account of potential risks that may arise in the future and are adaptable to climate change. To do this the sources, pathways, receptors and consequences of risk are understood and communicated to enable management of all the factors that combine to create risk.

Flood damage

C: Communities

Objective C. Communities are supported to be resilient and participate in reducing flood risk

Aims

C1 Ensure that communities and individuals are aware of flood risk and have easy access to clear information on flood risk, how it affects them and how they can protect themselves, their properties and businesses.

C2 Raise awareness with communities and local landowners of their responsibilities and the effects of their actions on flood risk.

C3 Ensure that there are clear and effective lines of communication between Cornwall Council and the communities of Cornwall.

Communtiy involvement

Measures

C4 Empower communities with enough knowledge and skills to effectively increase their resilience against flooding and are aware of health protection issues.

C5 Assist communities in coordinating their own actions to manage flood risk and increase resilience and involve them in actions taken by Flood Risk Management authorities.

C6 Work with communities and their representatives to ensure that their knowledge and views on flood risk and how to increase their resilience are considered.

C7 Ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond effectively and safely to flood forecasts, warnings and advice.

C8 Recognise the different character and requirements of scheduled monuments, historic buildings, conservation areas, other designated sites, sensitive historic assets and environments when appropriate flood resilience measures are designed.

C9 Provide advice on communication through a Frequently Asked Questions section on the Flood Risk pages of the Cornwall Council website.

We know we are achieving this when:

- All communities with significant flood risk develop and apply a Community Emergency/ Flood Plan that helps to safeguard vulnerable residents during a flood emergency.
- Communities living and working in areas at risk are represented on local Flood Risk Management partnerships. They are involved in community resilience initiatives and the views of those living and working in areas at risk are represented. As a result householders, businesses and communities better understand and manage any flood and coastal erosion risks they face.

D: Development planning and regeneration

Objective D. Local planning and regeneration enables sustainable development that integrates and delivers Flood Risk Management and coastal change solutions

Aims

D1 Achieve greater engagement between planners, developers, communities and other stakeholders about planning for flood risk and coastal change.

D2 Coordinate and support sustainable solutions to the regeneration of development, infrastructure and town centres that are vulnerable to flood risk and coastal change, including innovative design or relocation.

D3 Recognise that surface water drainage systems will occasionally become overwhelmed and that such exceedance flow should be managed to minimise danger and damage.

Measures

D4 Integrate sustainable Flood Risk Management solutions into the delivery of sustainable development, including planning for exceedance flows and allocating open spaces for temporarily storing water.

D5 Ensure that new developments do not increase flood risk to themselves or elsewhere, whilst managing the effects of climate change and further reduce flood risk where possible.

D6 Ensure that new development and infrastructure is located to maximise resilience to flood risk and coastal change over the long term.

D7 Use regeneration of brownfield sites to maximise the benefit of the natural environment for both managing flood risks and minimising pollution associated with uncontrolled water runoff.

D8 Promote the concept that developers contribute to funding the flood defences that they benefit from.

D9 Ensure that only development with an appropriate lifetime takes place within Coastal Change Management Areas.

D10 Develop planning advice on flood risk, flood resilience, coastal change and the impacts of historical mining based on sound strategic and community flood risk.

D11 Provide appropriate local standards, specifications and guidance for surface water drainage including recognition of the need to reduce flood risk in Critical Drainage Areas.

We know we are achieving this when:

- Sustainable development helps to ensure that flood risk is effectively managed in communities.
- Development delivers FRM solutions.
- Surface water from new developments is managed using Sustainable Drainage Systems as standard.

SuDS attenuation basin

E Catchment approach

Objective E. Ensure that flood risk within catchments is managed in a coordinated manner

A sub-soiler for reducing runoff from agricultural land

Aims

E1 Coordinate actions that affect flood risk within catchments and ensure that they work together to reduce flooding in the catchment.

E2 Ensure that different actions within a catchment and their pollution and flood risk impact on the catchment are understood by communities in the catchment.

E3 Encourage and facilitate the use of sustainable drainage systems for managing surface water runoff from new and existing developments and land use practices.

E4 Create new and maximise existing opportunities to reduce flood risk and surface water runoff and integrate drainage systems to decrease the burden on sewers by enhancing the natural environment.

E5 Take into account and promote awareness of the potential impacts of mining and the aging infrastructure associated with mine drainage.

Measures

E6 Align objectives in catchments to coordinate actions and delivery in a joined up manner and through multiple funding streams.

E7 Develop effective relationships between communities, businesses, environment and heritage organisations and the flood risk partnership within catchments.

E8 Make available intelligence, actions and programmes for catchments and report on information, issues, options and actions in a coordinated manner.

E9 Water quality is considered in all FRM actions including implications for bathing waters and the Water Framework Directive.

E10 Support approaches such as catchment sensitive farming and South West Water's Upstream and Downstream Thinking initiatives, tree planting and habitat improvement measures within the catchment.

E11 Developers are informed through the planning process if their proposals are in an area likely to contain historic mining features and be potentially influenced by unmanaged mine drainage infrastructure.

We know we are achieving this when:

- Flood Risk Management is not considered in isolation from other issues associated with water management and land use practices.
- A 'one catchment or coastal cell' approach is introduced for integrated water management to deliver multiple benefits.
- Stakeholders and communities are aware of the catchment in which they are located and successfully work with others in the area to reduce flood risk within the catchment.

F Prioritising and funding

Objective F. Effectively prioritise the resources for Flood Risk Management projects, maximise funding and join resources in the most efficient and effective way to deliver Flood Risk Management interventions

Aims

F1 Undertake an innovative, cost efficient approach to flood risk and coastal change management.

F2 Make every effort to attract new funding and other support, through a variety of means, and where possible seek multiple benefits from these resources.

F3 Identify areas where alternative means of improving resilience are needed without the injection of external financial contributions.

F4 Coordinate and join resources between partners and communities where possible.

F5 Encourage and assist communities to be proactive in seeking funding or in-kind resources from external and local community sources.

F6 Maximise opportunities for developers to contribute to the creation and maintenance of any flood defences that they benefit from.

F7 Prioritise between different sources of flood risk and investment options in a transparent manner.

Measures

F8 Prioritise flood risk and coastal change management resources and actions based on

- flood risk improvement
- adaptability to climate change, and
- whether they provide a proportionate balance between social, economic and environmental benefits

F9 Create business cases for external contributions and local investment by demonstrating the long term impact of funding on properties, land values and insurance costs and recognise the impacts on vulnerable communities and critical services.

F10 Coordinate funding bids between partners and with communities.

F11 Monitor and report on funds and spending in a transparent manner.

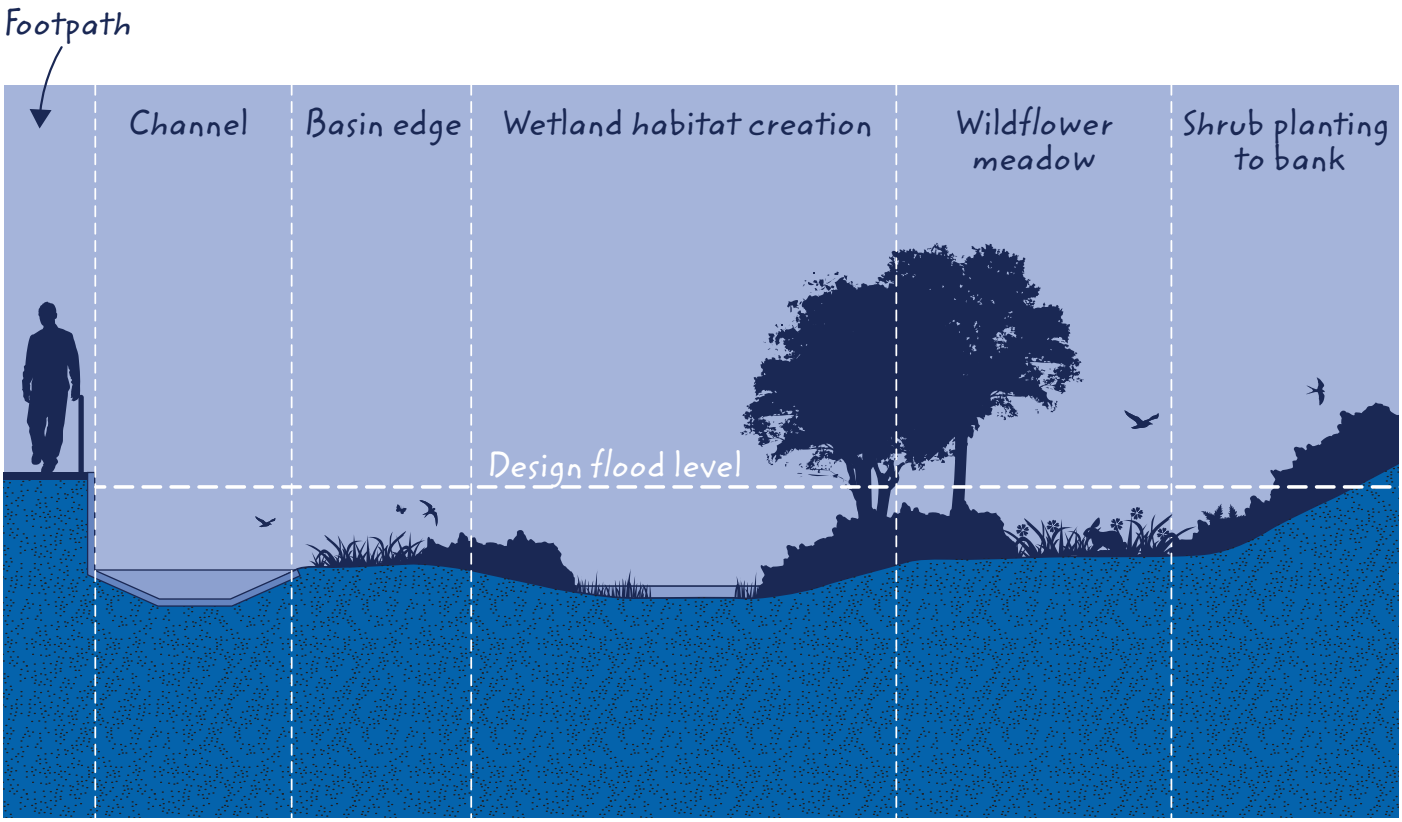
We know we are achieving this when:

- The overall level of investment in flood and coastal erosion risk management is increased as other forms of funding are used to supplement central government expenditure.
- We are delivering more benefit for every pound of government expenditure.

Below: Reconnecting a river with its floodplain

G Multiple benefits

Objective G. Seek added value for Flood Risk Management actions and interventions



Aims

G1 Flood management and coastal change actions should aim to work with natural processes where possible, seeking to achieve multiple benefits such as environmental, ecological and amenity enhancements.

G2 Flood Risk Management helps to deliver economic prosperity and growth

G3 Optimise funding potential by underpinning funding bids for Flood Risk Management actions with information on benefits and beneficiaries.

Measures

G4 Increase the resilience of the natural environment within the catchment, floodplain and on the coast to maximise the potential to help alleviate flood risk and provide multiple benefits for community and economy.

G5 Ensure that the Flood Risk Management Strategy is aligned with the Cornwall Green Infrastructure Strategy to enable the achievement of joint objectives and benefits of access to open spaces.

G6 Ensure that co-benefits arise from FRM projects in terms of delivering social inclusion, public health, amenity, understanding of the natural and historic environments and adaptation to climate change, for example.

G7 Clearly set out all benefits and risks of the options for Flood Risk Management and coastal change actions and communicate them to communities and other stakeholders.

G8 Ensure that flood risk management actions take due regard of the Water Framework Directive requirements so that a positive impact is achieved for water quality, fisheries and bathing waters.

G9 Adopt a partnership approach where Flood Risk Management benefits are aligned with the priorities of others

We know we are achieving this when:

- The effort spent on Flood Risk Management delivers additional benefits.
- Flood Risk Management promotes unconventional flood risk actions, such as making space for water, that deliver wider benefits to communities, businesses and the environment.

Glossary and Abbreviations

Aim	A general statement about what you want to achieve
Area of Outstanding Natural Beauty (AONB)	An area of countryside considered to have significant landscape value in England, Wales or Northern Ireland. Designated under the 1949 National Parks and Access to the Countryside Act.
Catchment	The area of land that contributes to the flow in a watercourse. A catchment boundary is usually a ridge of high land, a watershed, from which the water can flow either way, into one catchment or another.
Catchment Flood Management Plan (CFMP)	These give an overview of the flood risk across each river catchment. They recommend ways of managing those risks now and over the next 50-100 years.
Coastal cell	A coastline unit within which sediment movement is self-contained. This is used to define policy areas within Shoreline Management Plans.
Coastal Change	Physical change to the shoreline by erosion, coastal landslip, permanent inundation or coastal accretion.
Coastal Change Management Area (CCMA)	This is an area identified in Local Plans as likely to be affected by coastal change.
Combined Sewer Overflow (CSO)	A combined sewer carries a combination of foul water and rainwater. During heavy rainfall events the flow may exceed the capacity of the sewer and overflows are allowed to spill into the environment at designated locations .
Community Flood Plan	A document based on a template provided by the Environment Agency that enables local community volunteers to use local knowledge and resources during a flood emergency.
Cornwall Community Flood Forum (CCFF)	A community-led initiative committed to supporting communities, households and businesses at risk of flooding.
Critical Drainage Area	An area that has critical drainage problems and which has been notified to the local planning authority by the Environment Agency.
Exceedance flow	Flow that is conveyed or stored on the surface because the capacity of a drainage system carrying surface water (including as a result of a blockage to an inlet) has been exceeded.
Flood receptors	The item that receives the consequence of flooding, such as people, property, infrastructure or ecosystems.
Flood resilience	A measure that can reduce the damage that occurs to flood receptors.
Flood Risk	The combination of the probability of occurrence of a flood event and its potential negative consequences.
Flood Risk Area	Areas where the risk of flooding from local flood risks is significant as designated under the Flood Risk Regulations.
Flood Risk Management (FRM)	Holistic and continuous analysis, assessment and reduction of flood risk.
Flood Risk Measure	An action that is taken to reduce either the probability of flooding or the consequences of flooding or some combination of the two.
Lead Local Flood Authority (LLFA)	Upper tier or unitary local authority with duties as defined within the Flood and Water Management Act and the Flood Risk Regulations. For Cornwall this is Cornwall Council .
Local Enterprise Partnership (LEP)	Locally-owned partnership between local authorities and businesses. LEPs aim to play a central role in determining local economic priorities and undertaking activities to drive economic growth and the creation of local jobs.
Local Flood Risk Management Profile	A review of the flood risk issues relevant to a particular community, including options and measures to manage flood risks. Part 2 of this Strategy.

Local Flood Risk Management Action Plan	An investment plan detailing FRM actions, interventions and measures to manage flood risk. The Action Plan may be implemented through the Medium Term Plan and other funding sources. Part 3 of this Strategy.
Local Plan	This sets planning policies in a local authority area.
Local Transport Plan	Sets out a Council's transport strategy and policies for maintaining and improving all aspects of the area's transport system.
Main River	A Main River is a river that has been designated as such by the Environment Agency. These tend to be the larger arterial watercourses that are considered to pose a significant flood risk.
Measure	A course of action taken to achieve a particular purpose.
Medium Term Plan (MTP)	Each year Risk Management Authorities submit details of proposed flood and coastal erosion management works which require funding from Government.
Ordinary watercourse	Ordinary watercourses include all rivers and streams not designated as a Main River and all ditches, drains, cuts, culverts, dikes, sluices, sewers (other than public sewers) and passages, through which water flows.
Operational Area	A collection of catchments defined by the Environment Agency for management purposes under the Water Framework Directive.
Preliminary Flood Risk Assessment (PFRA)	An assessment of vulnerability to flooding across a LLFA area. These were required to be published by December 2011 and were the first stage in delivering the Flood Risk Regulations.
Riparian owner	One who owns land bounding or including a lake, river or other body of water.
Risk Management Authority (RMA)	An organisation with specific responsibility for managing flood risks as defined by Section 6 (13) of the Flood & Water Management Act 2010. Within Cornwall the RMAs are Cornwall Council, the Environment Agency, South West Water and the Highways Agency.
River Basin Management Plan (RBMP)	River Basin Management Plans describe the regional river basin district and the pressures facing the water environment within it. It shows what this means for the current state of the water environment in the river basin district, and what actions will be taken to address the pressures.
Shoreline Management Plan (SMP)	A high level assessment of the risks associated with coastal processes. It helps reduce these risks to people and the developed, historic and natural environments by setting short, medium and long term policy options.
Strategic Flood Risk Assessment (SFRA)	A study carried out by the local planning authority to assess the risk to an area from flooding from all sources, now and in the future, taking account of the impacts of climate change, and to assess the impact that land use changes and development in the area will have on flood risk.
Sustainable development	That which meets the needs of the present without compromising the ability of future generations to meet their own needs. Refers to the processes by which sustainability may be achieved.
Sustainable Drainage System (SuDS)	Techniques used for managing rainwater and flood risks in an environmentally friendly way by mimicking natural water systems such as ponds, wetlands and basins or by infiltration into the ground.
Town framework	Town framework plans were developed to provide a framework for the future development of our towns. They show how the vision, objectives and policy for the area may be achieved and illustrates the implications of the proposed vision, objectives and policy for the area.
Water Framework Directive	A legislative act of the European Union to establish a framework for the protection of inland surface waters (rivers and lakes), transitional waters (estuaries), coastal waters (to one nautical mile) and groundwater.

If you would like this information in another format or language please contact:

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