

Frequently Asked Questions

The West of Wales Shoreline Management Plan (SMP) provides a high level strategy for managing flood and erosion risk for the coastline and is a non-statutory policy document for coastal defence management planning.

The Shoreline Management Plan raises significant concerns over the future sustainability of defence of Fairbourne. There is a need to maintain existing defences and reduce flood risk to the area in the short term. Future changes in sea level, increased rainfall, increase the risk in the future. There is little or no opportunity for adaptation, in the traditional meaning, in terms of defence or local protection to property, with no opportunity for roll back of the community. This makes Fairbourne different to many other areas facing similar increasing risk from flooding and erosion. If not defended, the village as a whole will be lost. While the situation at Fairbourne is at present quite unusual, it will not be unique. This raises many important and complex issues that go beyond the analysis and actions covered by the SMP. These are issues that have to be addressed and it is for this reason that Gwynedd Council are taking this forward as a project. This will involve several organisations working alongside the community and looking at what needs to be done, what additional information is needed and how we need to plan for the future.

There are many questions, some of which we do not have the full answers to at the moment. It is important that the project, as it is taken forward, finds the answers. For the present, frequently asked questions have been addressed below. These are set out under the following headings.



Answering one question will quite probably raise other questions from within the Community. While some answers may come as the project is taken forward, it is essential that individuals feel able to pose questions. In this way all become better informed, allowing better decisions to be made.

What is special about Fairbourne?

Fairbourne has been built on land which was been reclaimed from the sea. The village is defended from the sea by the shingle bank which has developed naturally since the end of the last ice age 14,000 years ago. On the estuary side the village is protected by defences which were built by McDougall in 1868.

In 1891 the village did not exist, by 1901 there were a handful of houses and therefore it is only in the last 100 years that Fairbourne has developed.

- **Why is this important?**

The area of the village, the enclosed between the sea defence, the embankment and the railway line at the back of the village is very flat. The level of the ground is only just above normal sea level. Before it was reclaimed and defended, this land would have regularly flooded on higher tides.

The shingle bank would naturally try and roll in land as it has slowly over thousands of years. The shingle is moved by waves. By fixing the shingle bank by defences, this has meant that the shingle bank has reduced in size. This can be seen particularly at the southern end, where the bank is lowest.

Before the village was there and before defences were built, the streams flowing off the hillside would have flowed across the open marsh. Over high tide, they would back up, draining away as the tide fell. By defending the area, these flows have had to be managed and the land drained. Water flowing off the hillside can still back up within the water courses over high tide and drain through the sluice as the tide goes out.

- **Is Fairbourne unique?**

No. While Fairbourne is built within the natural flood plain, it is not unique in this. There are many areas around the coast of Gwynedd, around the coast of Wales and the UK, where there are communities at risk from flooding.

Many areas of the coast are vulnerable to erosion and there are other areas where by defending the coast, the beach has been lost. There are many areas where erosion and change is occurring.

What does make Fairbourne different to many other areas is that the whole area of the village is built at this low level. There are no significant areas of high ground, major flooding would affect the whole village. Also, while not unique, flooding could arise from several different causes: wave overtopping, sea level, water flowing off the hillside and from rising ground water.

What is the risk of flooding?

Because the village is built on low ground, if it were not defended, then the village would flood. Without the sea wall waves would overtop the shingle bank, without the embankment water would flood in from the estuary, and water building up in the water course could overtop the edges of the drainage channels. But in each case, at the moment, this risk is managed.

Under extreme conditions there could still be flooding but the defences and management of the watercourse stop flooding under all but the very worst conditions.

During the recent storms, there was some wave overtopping. However, the defences have been designed to resist this sort of storm. The defences held and the areas flooded were relatively local. When there has been heavy rainfall, there has been local flooding but the main area of the village was protected. The recent strengthening of the embankment on the estuary side of the village and improvements to the drainage through the village provides Fairbourne with a good standard of protection.

The recent storm was severe, particularly due to extreme wave conditions. Fortunately, the sea level was not as high as it might have been or as high as it has been on occasions in the past.

- **What conditions could cause major flooding?**

The new reinforced embankment has been designed so that it would only be overtopped under water levels that might only occur on average every one hundred years. This does not mean that it will not be overtopped for one hundred years. That level could occur this year but it is unlikely. In fact the chance that it would occur this year or in any year is effectively 1 in 100 or a 1% chance.

Defining this standard of defence is harder for water levels in the watercourses and for overtopping of the shingle bank is more difficult. The flood risk depends on a combination of factors. In the case of the watercourses, now that these have been improved, it is the combination of high rain fall and the chance that this might occur when the tide is high. In the case of the coastal defence it depends upon the combination of wave height and the level of the sea. It also depends on the degree to which the shingle bank is eroded during a storm. At present, in both cases, the chance of a major flood occurring in any year is around the 1 in 100 year combined conditions.

This will be reviewed as part of the Project and further information will be provided, taking account of future change.

- **Should we plan for this?**

Yes. Although major flooding might be rare, we need to plan for such an event to ensure that people are safe. An emergency plan is being developed through the Community Council. This is will form an important element considered by the Project.

- **Who is responsible for managing defences?**

Both National Resources Wales (NRW) and Gwynedd Council have permissive powers that allow these organisations to defend communities from flood and coastal erosion. The recent improvements to the embankment and the watercourse were undertaken by NRW. Funding for works is supported by The Welsh Government. These organisations work collaboratively in providing defence and risk management.

Gwynedd Council also undertake monitoring of the coast.

The powers that allow work to be undertaken are permissive. This means that the operating authorities have to take account of the economic justification in undertaking works and also have to consider sustainability of risk management in the future.

- **Has the village ever flooded in the past?**

Although the defences have been continually improved over the years, the village has flooded in the past such as on November 1938 for example.

What is the SMP and what does it say?

The West of Wales Shoreline Management Plan provides a high level strategy for managing flood and erosion risk for the coastline between St Anne's Head, at the entrance to Milford Haven, and the Great Orme.

The Plan assesses these risks to people and the developed, historic and natural environment. It considers the immediate risks and how management of this risk can be developed in to the future in a sustainable manner, to ensure that this does not tie future generations to costly and unsustainable management. Although the Plan focuses on management of risk and defences, it has to take account of the broader issues of coastal management. It provides a framework for broader management and has to identify and highlight issues that need to be addressed. In particular, and most relevant to areas such as Fairbourne, it has highlighted the increasing risk due to climate change and the future difficulties and dangers of attempting to manage the risk in the way in which they are managed at present. Critically, by highlighting the future risk it opens the opportunity to discuss plan for the future.

- **What is the status of the SMP?**

The SMP is a non-statutory policy document for coastal defence management planning. It does not set policy for anything other than flood and coastal erosion risk management. However, from this perspective, it aims to provide the context to, and consequence of, management decisions in other sectors of coastal management. The SMP provides a timeline for policy and management changes; i.e. a 'route map' for decision makers, including individuals and communities, to move from the present situation towards the future. In setting out the approach to management, the SMP has to be realistic about what is likely to be funded and can be sustained. By being adopted by local authorities, the Plan sets out guidance and highlights the need to address issues that have been identified.

- **Has the SMP been adopted by Gwynedd Council.**

Yes. It was adopted by the Gwynedd Council Cabinet in January 2013. Arthog Community Council were given a presentation on the adopted SMP on the 1st May 2013.

- **How did the SMP involved communities?**

A consultation process was followed as detailed in Appendix B of the SMP document. The first round of stakeholder engagement was done by sending an information sheet and questionnaire to key stakeholders including Barmouth Town Council and Arthog Community Council in August/September 2009. This was followed up with meetings around the whole coast line in December 2009. This included a meeting at Barmouth to discuss issues.

On completion of the draft plan a three month public consultation period 6 May 2011 to 8 August 2011 commenced. The draft plan was made available on the website and a meeting was arranged in the Village Hall, Fairbourne on the 20 May 2011. 23 people registered their attendance. This event

was also advertised in the local press. All the above information can be found on the website www.westofwalesmp2.org – Appendices – Appendix B Stakeholder Engagement.

There was no written feedback from the local residents, although concerns were raised and discussed at the meeting. These views were incorporated within the Plan and the Plan highlighted the need for detailed discussion and planning.

- **Many of the residents consider the consultation process to be inadequate. How has this been addressed?**

The Council arranged meetings with all Community Councils / Town Councils / City Council within Gwynedd who have a foreshore within their area. In particular at Fairbourne it was agreed that there was a need for a multi-agency board with partners. This was discussed at a meeting on the 7th June 2013, with an initial Project Board meeting on the 28th August 2013. The Community Council attended both meetings. The Community Council also sit as permanent members on the Project Board looking at these issues. It was at the suggestion of the Community Council that one of the first acts in taking the SMP2 agenda forward would be to arrange a meeting, to be organised by the community, so that everyone has a clear understanding of the situation. All parties on the Project Board fully agreed with this. The Council have been working with the Community Council to set up a meeting for the whole community to discuss the issues and this was scheduled for 2014 (although the storms have then occurred). The Project Board are taking advice from the Community Council as to how best to set this up and the 28/8/13 minutes have actions as to how best this should be arranged, to ensure as many people as possible would be able to attend. The Project Board consider it essential that people are able to discuss matters in an informed way.

A draft document of Project Principles has been produced.

- **What are the SMP policies?**

For any area the SMP sets one of four different policies: No Active Intervention, Hold the Line, Managed Realignment and Advance the Line. These define general policies and how they would be applied is discussed in relation to the specific situation in any area.

- **Why do policies change over time and what does this mean?**

The Plan considers how we manage the shoreline now, looking at how, where necessary, this may change in the future. Policies are defined covering three periods of time (epochs); short term, medium term and long term (nominally from now for 20 years, from 20 to 50 years and 50 to 100 years). This has to be seen as a continuous process. While the policy may change from one time period (epoch) to another, this does not mean that on the 1st January 2025 the way in which we manage risk suddenly changes. The change will depend on such things as climate change (e.g. the observed rate of sea level rise) and the degree to which we are prepared for change. The SMPs play an essential role in identifying major issues and problems in managing flood and coastal erosion risk in many parts of Wales and in England as well. Many of the issues are going to be extremely difficult to solve, especially in areas such as Fairbourne, where with sea level rise will put people at greater and greater risk. The Plan encourages thinking about what change will mean and allows time for change to happen.

- **Why have policies changed from those defined in the first SMP?**

Since the first SMP, more detailed strategy studies have been undertaken over large sections of the coastline and these, together with academic research and monitoring by the responsible authorities, have improved our understanding of how the coast behaves. The revised SMP, looking over a longer period of time, has allowed us to consider issues that develop over time.

- **How does the SMP assess climate change?**

Rates of sea level rise will increase due to climate change. Although this is clear, the amount of change is uncertain. At the peak of the last ice age, global water levels were around 120 metres lower than they are today. During the last warm period, it has been estimated that sea level was some 2m higher than at present. The SMP is looking forward over a period of 100 years. Over that period of time the change from present sea levels will have a profound effect on the way in which we may perceive the coast and how we manage important interest on the coast in specific areas.

Due to these uncertainties, the SMP has considered three different scenarios. Over the period of the next 100 years sea level rise of typically 1m might reasonably be anticipated. There is a realistic chance that it might be higher or lower than this. The SMP has, therefore, considered the implications of 0.5m and 2m over the next 100 years, in addition to the 1m value.

The rate at which sea level rises effects how rapidly the coast will change. It also affects the degree to which flood risk will increase. There is also likely to be increased intensity of rainfall and the possibility of increased storminess.

What does this mean for Fairbourne?

The SMP identifies that in the future there will be increased risk to the community:

- The risk that the embankment will be overtopped will increase due directly to rising sea level.
- There would be increased erosion of the shingle bank. Even without sea level rise there is erosion, this will increase as sea level rises. There will be an increased risk that the defence might fail and increased wave overtopping.
- Increased rainfall will mean increased flows in the watercourses, coupled to the risk that water will not drain as quickly due to sea level rise will increase risk of flooding.
- With increasing sea level, there is the possibility that ground water level will be higher. In effect, overtime, the whole area will be below the level of normal tidal levels.

- **Can this risk be managed?**

It is possible to increase the levels of defences. The embankment could be raised, shingle could be brought in to defend the shoreline, and pumps could be installed to deal with increased rainfall and increased ground water. The standard of defences could be maintained.

- This would incur very significant cost, with on-going increase in costs.
- As important, should the standard of defence be exceeded at any time in the future, the consequences would be worse. Should defences be overwhelmed, flooding across the whole area could be in excess of 2m in depth. With climate change, even if defences are improved, the consequence and risk to life would be severe.

Even in attempting to defend people, this risk is such that should defences be overtopped, or worse still breached, then the consequences would be immense and put people's lives at risk.

- What is the SMP policy?

The SMP sets out a series of policies over time. In the immediate and over the short term defences would be maintained. The SMP makes clear recommendations for the village to be protected during epoch 1. In the medium term over the next 50 years plans have to have been put in place and implemented to abandon defences and for the people to relocate. In the long term defences would not be maintained.

- It has been urged that the policy for Hold the Line is urgently reinstated. Is this reasonable?

No. The updated SMP, based on existing evidence, has emphasised that at present and over the next 40 years we can defend and that we should defend. This will need to be reviewed as more information about sea level rise is obtained (see below). As such, the present policy and approach is not far different from the policy set in 2000 by SMP1. The big difference is that the current SMP is looking further into the future. This provides the opportunity to plan for that future. This opportunity has to be taken now, if we are to deal with the major issues that the future holds.

What will change and when?

It is re-emphasised that the SMP recommends that at present we can defend and that NRW should defend. But the community should not be sitting back. All agencies and the community have to plan for the future and we have to involve those most affected in this process. It is this that the SMP has promoted, recognising that the issues go well beyond the normal scale of flood risk management. It is through the concerns raised by the SMP that the Council has been made fully aware of the issues and has provided the impetus for the Council to talk about these difficult issues with the communities.

- It has been reported that the Village will be abandoned in 2025. Is this true?

No. While the recent media coverage of the storms has been beneficial in raising the profile of decisions that have to be made, all partners are very conscious that it has also raised alarm and some reports have created miss-information that urgently needs to be addressed. In the future it has been correctly reported that the SMP says it will not be sustainable to defend Fairbourne in terms of flood defence. The best estimate at present is that this point occurs in 40 to 50 years' time (2052 – 2062). The range of uncertainty is considered to be between 2042 and 2072.

- How have these dates been arrived at?

Based on existing information, the SMP estimates that with 0.5m sea level rise, there would need to be a major change in the way in which defences need to be managed. One of the tasks identified for the Project would be to examine this in more detail. Critically, however, it is not whether such a change would be needed, it is when.

- When will 0.5m sea level rise occur?

As discussed earlier, there is uncertainty over the rate of sea level rise. Sea level, relative the land levels have been raising over the last century. There is good evidence that the rate of sea level rise is

accelerating. The most pessimistic, but still realistic, estimate is that sea level could rise by 2m over the next 100 years. This would mean that 0.5m sea level rise would have happened by 2042. At present it seems more likely that 0.5m would occur over the next 40 to 50 years. There is the possibility that it might not occur until 2072.

As we move forward in time, these estimates will become more reliable. The Project aims to monitor this so that the timeline for change becomes more certain. The aim of the Project Board is to identify what actions are needed from the present so that as more information is gained implementation of change has already been discussed and a plan is in place.

What will this mean for me and what do we need to do?

Clearly the storms in the early part of 2014 have caused concern and this, coupled to the media coverage and the on-going longer term issues highlighted through the SMP, and being taken forward through the Project, have all raised the profile of the situation at Fairbourne.

It is hoped that the questions and answers given above help clarify some of these issues. However, it has raised other questions more specific to the community and individuals within the community.

The present situation.

- **There was damage and overtopping at the coast. How is this being dealt with?**

The intention for the present and in the immediate future is to continue to defend the village. The damage, overtopping and loss of areas the beach is being considered by the Council and their partners NRW to consider what action may be required. The 2014 storm was exceptional in terms of the wave heights and some damage would have been expected. Work to maintain the defences will be undertaken in parallel with developing the Project. The Project will consider the longer term issues alongside what is needed in the short term.

- **Is the situation being monitored?**

Yes. The Council and NRW have been monitoring the beach and defences for many years. This information was very useful in developing the SMP. It was this monitoring that identified the need to improve the embankment and the watercourse. It is also vital in understanding future change. The intention, through the Project is to monitor other aspects as well, such as ground water levels. All this will feed into the Project and information will be openly available to the community so that individuals can understand the changes occurring. Part of the project will be to examine what else needs to be considered so that future decisions are well informed; building on the information that already exists.

- **How will emergency planning be taken forward?**

As discussed earlier, the Community Council are working with other agencies in developing an emergency plan should very exceptional storm conditions be predicted. This will be co-ordinated with flood warnings, as at present. The plan will be discussed and the community will be involved and kept aware.

Looking to the longer term and the questions this poses for the present.

- **Is the village instantly blighted due to the change between SMP1 and SMP2 policies?**

This is a concern in many areas of the coast where longer term policies have changed. The evidence is still unclear from these areas. This is one aspect that the Project is looking at. The Project Board is working with Welsh Government to examine how house prices are affected by change in policy. The implications of this would feed in to Project and into national policy.

- **Will it be more difficult to obtain insurance?**

Welsh Government is in discussion with the insurance industry. The issues at Fairbourne form part of this. It will be important to record any incident where insurance cannot be obtained and the Community Council will gather this evidence. This will be an aspect that will be taken up through the Project.

- **If change is inevitable, people and businesses need to know so that they can plan.
Why were people not informed earlier?**

This is always a difficult question. It is only by doing the SMP that the issues have been brought out for discussion. The Project is the start of this process. It is why; despite the present uncertainties associated with things such as climate change, the decision has been made to involve the Community at this stage. It is accepted that the uncertainty over timescales can itself raise concerns. Even so, it is essential that these issues are highlighted now and are discussed openly. In this way, individuals and businesses can be part of the process and can start to plan for their future.

- **Who will decide when and how the community will be relocated?**

This is a fundamental issue that the Project will be looking at. It will involve all partners on the Project Board, including representatives of the Community.

- **In the intervening years what will happen to the Community?**

This, again, is why the Project has been set up. Accepting the need for change, the principles upon which the project is established are to ensure that the community remains viable, providing a secure place to live, that businesses continue to thrive and that the basic infrastructure and services are maintained. The Project will be looking at each of these aspects.

- **Will property owners be compensated for loss of their properties?**

At present there are no measures in place for this. Council support for 'relocation' would probably be limited to help with finding a private sector property to rent and with applying for housing benefit. There is a national debate over this. The Project will consider and investigate this more fully and will raise this issue with Welsh Government. In other areas of the country, in particular on the east coast of England, the ideas of purchase and lease back have been looked at. This along with other ideas will be considered through the Project.

- **How will people know what is happening?**

The Community Council will have a permanent position on the Project Board. In addition meetings to discuss matters and raise concerns will be organised and other ideas for communication will be considered.

What is being done?

- The first steps have already been taken in setting up the Project Board.
- Through the Community Council arrangements are being made for a meeting of the Project Board so that questions coming from the community can be answered.

These are the first steps.

- What will the Project cover?

In principle the project will have two main elements:

- Examining and building further information on the existing and future flood and coastal erosion risk management. This will include monitoring, undertaking a review of the combined risk from different sources, ensuring an appropriate flood warning service and looking to where existing defences can be improved.
- Adaptation and social risk management. This will consider the existing emergency planning, communication, social issues such as housing and businesses alongside identifying the most vulnerable to long term changes. In addition, it will consider the legal position with respect to matters such as compensation and defence. It will consider what might be needed to allow change to happen and consider what happens after people are relocated.

- How long will this take.

In effect the Project will continue to run until changes are implemented, taking account of new information on such things as climate change predictions, ensuring that there is continuing communication between agencies and the community. The main stage of the Project might typically run over the next five years. Some issues will be addressed as soon as possible but other matters can only be resolved as monitoring or other data is collected. The aim of this initial stage is to develop in detail a Fairbourne Management Plan.

Who to contact for more information?

Alun Jones

YGC, Flood and Coastal Erosion Risk Management Unit,
Gwynedd Council, Ffordd Y Cob, Pwllheli, Gwynedd, LL53 5AA

Tel: 01758 704 016

Email: SMP2@gwynedd.gov.uk