

AtkinsRéalis



**Strategic
Environmental
Assessment Report**

Neath Port Talbot County Borough Council

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NEATH PORT TALBOT FLOOD RISK MANAGEMENT STRATEGY PLAN

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Contents

Non-Technical Summary	7
1. Introduction	11
1.1 Purpose of this document	11
1.2 The background and need for the Local Flood Risk Management Strategy and Plan	11
1.3 Need for and approach to the SEA	12
1.4 The SEA Process	12
1.5 Geographical and temporal scope	14
1.6 Technical scope and data limitations	16
2. SEA Methodology	17
2.1 Overview of Approach	17
2.1.1 Stage A: Setting the Context and Objectives, Establishing the Baseline and Deciding on Scope	17
2.1.2 Stage B: Developing and Defining Options	18
2.1.3 Stage C: Preparing the Environmental Report	21
2.1.4 Stage D: Consulting on the Draft Plan and the Environmental Report	21
2.1.5 Consultation	22
3. Review of relevant legislation and other plans and programmes	23
3.1 Introduction	23
4. Baseline information and key environmental issues	28
4.1 Introduction	28
4.2 Key environmental issues and opportunities	28
5. SEA Framework	44
5.1 Introduction	44
5.2 Assessment framework	44
6. Assessment of reasonable alternatives	49
6.1 Introduction	49
6.2 Consideration of Alternatives	49
6.3 Conclusions to consideration of Alternatives	61
7. Compatibility between LFRMSP Objectives and SEA Objectives	62
7.1 Introduction	62
7.2 Compatibility assessment outcomes	63
8. Assessment of policy measure proposals	66
8.1 Introduction	66
8.2 Assessment results	67
8.2.1 Development planning and adaptation	70
8.2.2 Flood forecasting, warning and response	71
8.2.3 Land, cultural and environmental management	72



8.2.4	Asset management and maintenance	73
8.2.5	Construction of flood alleviation schemes.....	74
8.2.6	Studies, assessments and plans	76
8.2.7	High level awareness, engagement and monitoring.....	77
9.	Assessment of catchment proposals.....	79
9.1	Introduction	79
9.2	River Afan Catchment	79
9.3	River Corrwg Catchment.....	81
9.4	Afon Pelenna Catchment	82
9.5	River Ffrwdwyllt Catchment	84
9.6	River Kenfig Catchment	86
9.7	Neath Vale Catchment.....	88
9.8	Afon Pryddin Catchment	91
9.9	River Dulais Catchment	92
9.10	River Neath Catchment.....	93
9.11	River Clydach Catchment	98
9.12	River Tawe Catchment.....	101
9.13	River Twrch Catchment.....	103
9.14	River Clydach (Lower) Catchment	104
9.15	River Clydach (Upper) Catchment	104
9.16	River Amman Catchment.....	105
10.	Mitigation.....	108
10.1	Introduction	108
10.2	Mitigation approaches applied through the SEA.....	108
11.	Cumulative, synergistic and indirect effects	111
11.1	Introduction	111
11.2	Likely effects	111
11.2.1	In Plan effects	111
11.3	Likely effects with other plans and projects	113
11.3.1	Nationally Significant Infrastructure Projects	113
11.3.2	Review of local planning policies and other developments	113
12.	Monitoring.....	115
13.	Summary and conclusions.....	119

Tables

Table 1-1 - LFRMSP and SEA stages and links.....	13
Table 2-1 - Key to compatibility of Objectives	18



Table 2-2 - Assessment of alternatives - scale.....	18
Table 2-3 - Criteria for assessing significance of effect.....	19
Table 2-4 - Schedule of SEA requirements	21
Table 4-1 - Key environmental issues and opportunities for Neath Port Talbot LFRMSP	29
Table 5-1 - SEA Framework	45
Table 6-1 - Consideration of LFRMSP against current approaches	51
Table 7-1 - Key to compatibility of Objectives	63
Table 7-2 - Overview of objectives compatibility	64
Table 8-1 - Flood measures grouped by theme	66
Table 8-2 - Criteria for assessing significance of effect.....	67
Table 8-3 - Measures - Assessment results	68
Table 9-1 - Actions proposed for River Afan Catchment.....	80
Table 9-2 - Actions proposed for River Corrwg Catchment.....	82
Table 9-3 - Actions proposed for Afon Pelenna.....	83
Table 9-4 - Actions proposed for the River Ffrwdwyllt Catchment	85
Table 9-5 - Actions proposed for River Kenfig Catchment	87
Table 9-6 - Actions proposed for Neath Vale Catchment.....	89
Table 9-7 - Actions proposed for Afon Rryddin Catchment.....	91
Table 9-8 - Actions proposed for River Dulais Catchment	92
Table 9-9 - Proposed Actions for River Neath.....	95
Table 9-10 - Proposed Actions for River Clydach Catchment.....	99
Table 9-11 - Proposed Actions for River Tawe Catchment.....	101
Table 9-12 - Actions Proposed for River Twrch Catchment	103
Table 9-13 - Proposed Actions for the River Clydach (Upper)	105
Table 9-14 - Actions proposed for River Amman	106
Table 10-1 - Overview of Mitigation.....	108
Table 11-1 - In plan cumulative effects.....	111



Figures

Figure 1-1 - LFRMSP area	15
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Non-Technical Summary

The SEA process carried out through the development of the LFRMSP has been thorough and comprehensive. Continuous dialogue has taken place between the Plan making team and the SEA team, with a series of discussions held and recommendations made.

The draft LFRMSP was assessed against a set of SEA Objectives and decision making questions, used consistently through the assessment process, across as aspects of the proposed Plan and it is considered this has helped to ensure that environmental issues have been incorporated into the LFRMSP. Based on the findings of the SEA, it is possible to draw a number of key conclusions with regard to LFRMSP.

In terms of the need for the LFRMSP, it was shown that there is a legislative requirement for this to be developed, as well as high level principles and measures in respect of addressing flood risk set out at a national level in Wales. This means there is little flexibility in setting out or considering strategic alternatives to the LFRMSP. As such, consideration of Alternatives was made on the basis of considering implementing a new LFRMSP rather than continuing with the current approach to flood management in Neath Port Talbot. The SEA has shown that this represents a sound approach to managing flood risk, while also recognising that there are potential environmental opportunities (such as NFM and NBS) from the new approach, while also addressing the core requirements.

In the first instance, consideration was made of the LFRMSP Strategic Objectives, which were developed to reflect national objectives, but also reflect the local context and priorities of Neath Port Talbot. It was shown through consideration of how compatible these were to the SEA Objectives that the proposed approach under NPTLFRMSP provided a generally firm underpinning to help ensure that the environmental performance of the Plan could be maximised. While there were some areas of uncertainty, these were not sufficient to preclude progressing with further development of the LFRMSP.

A key area of focus for the SEA was on the series of Measures that were selected to achieve the strategic objectives outlined. It was noted as the foremost outcome intention that implementing these measures would lead to a reduction in flood risk across the LFRMSP area.

The first Measures examined were Measure 1 and 2 which fall under the broader theme of 'Development planning and adaptation'. The main elements of these measures related to the implementation of Sustainable drainage (SuDS) and overall, it is considered that these measures set a good basis for a range of beneficial effects across the SEA objectives. Many of these effects can be anticipated to be significant, notably in respect of biodiversity, soils, water quality and resources, vulnerability of built assets / infrastructure and resilience / adaptation to climate change, landscape and townscape, resource use and waste production. It is also worth noting that the measures Strategies to help with recovery will also limit effects. Better preparation would include through improved infrastructure, early warning systems, and disaster response plans, thereby lessening the immediate impact of floods. It is also anticipated this will lead to lower long-term vulnerability by encouraging sustainable land-use practices and constructing resilient infrastructure that can withstand future flood events. There would also be post-flood recovery strategies to help enable quick restoration of normalcy. Well informed and prepared communities are also anticipated to have enhanced social and community networks, with reduced property damage, lower recovery expenses and livelihoods which are more secure. local communities, as well as support attractive, resilient and viable communities.

The health, economic and social wellbeing of communities is also anticipated to be significantly benefitted by the measures set out in respect of 'flood forecasting, warning and response'. Strategies to help with recovery will also limit effects. Better preparation would include through improved infrastructure, early warning systems, and disaster response plans, thereby lessening the immediate impact of floods. It is also anticipated this will lead to lower long-term vulnerability by encouraging sustainable land-use practices and constructing resilient infrastructure that can withstand future flood events. There would also be post-flood recovery strategies to help enable quick restoration of normalcy. Well informed and prepared communities are also anticipated to have enhanced social and community networks, with reduced property damage, lower recovery expenses and livelihoods which are more secure.



In respect of the broad theme of 'land, cultural and environmental management', the Measures were concerned with Natural Flood Management and Nature Based Solutions (Measure 5) and general Environmental and Biodiversity enhancement (Measure 6). From an SEA perspective, these Measures are of considerable importance and provide a very strong basis for a range of beneficial effects across the SEA objectives. Many of these effects can be anticipated to be significant, notably in respect of biodiversity, designated sites, soils, the water environment, townscape and visual amenity, the health and wellbeing of communities and the ability to minimise resource use and waste production.

The Measures set out under the broad theme of 'Asset management and maintenance' were then assessed. These covered a range of related approaches such as asset surveys (Measure 7), S21 Asset register (Measure 8), Critical flood risk asset inspection (Measure 9) and Critical flood risk asset maintenance and repairs (Measure 10). Overall, it is considered that these measures are beneficial across most environmental aspects, though these benefits will most likely be slight. However, it is considered that those aspects of relevance to health, economic and social wellbeing are of significant benefit. The potential for water quality issues during refurbishment (including desilting operations) could be of adverse effect, though it is considered these could be well managed through pollution prevention measures such as silt mattresses, silt curtains, bunds etc. There could also be other (slight adverse) environmental issues relating to biodiversity, air quality, noise, soils and so on through the general construction type activities that may be involved in maintenance. Again though, it is anticipated that these could be easily managed through standard mitigation techniques.

Another key element of the broad theme of 'Asset management and maintenance' is Measure 11 – Construction of flood alleviation schemes. While this is part of the broad theme, it was considered that there is a particular likelihood of potential significant environmental effects from such a Measure, which is anticipated to require construction of hard engineered infrastructure and as such, this was assessed in isolation. Overall, it was noted that while hard engineered structures can have significant adverse effects, particularly during construction through issues such as a loss of biodiversity, or the amount of carbon emissions or embedded carbon they require to construct. During operation, they could act to prevent or restrict fish passage. Nevertheless, note that any scheme being developed in the fluvial, estuarine or coastal environment should undergo full assessment in respect of implications for the WFD and the objectives of the RBMP. Any design should consider the findings of all such assessments. This is being completed for those schemes progressed to date where it was considered that there were potential implications for the relevant watercourse and this would help inform the consenting process.

Nevertheless, they are very effective at protecting infrastructure from flooding and if well built, can last many decades. As part of a range of catchment wide management, they can have an important role at very specific locations e.g. to protect high worth assets, or assets of cultural importance and as such can be considered a key element to wider sustainable management. They are particularly beneficial to providing reassurance to people that their properties are well protected, or even provide the perception of protection. The benefits to physical and mental well-being from this protection, or perceived protection are significantly beneficial.

In order to begin to address issues related to hard engineered schemes, it was noted that there would be a requirement for further, more detailed assessment, including as required EIA and HRA and design processes should consider the full range of environmental topics set out in those processes. This would include considerations of specialist assessments into specific topics such as fish passage. The development of construction environmental management plans should also be ensured.

In relation to the broad theme of studies, assessment and plans, (this related to Measures 12 – 15 and covered Flood Risk Assessment, flood investigation, feasibility studies and development of business cases), it was considered that these, in themselves, are not anticipated to have direct effects on the environment and are therefore considered neutral for the purposes of this SEA. Nevertheless, they are considered to be a vital part of the overall approach to ensuring flood protection can be achieved, while still protecting people and the environment. It is important to note that further assessment may be required in respect of the findings of any study, assessment or plan, or these could result in the development of some schemes, including those that could have adverse effects such as through the

requirement for large scale engineering and construction. Nevertheless, it is considered that any issues arising could be addressed via other Measures set out in this plan.

Protection of people and their property is a fundamental aim of the LFRMSP. An important aspect of keeping people informed is addressed through the broad theme of 'high level awareness and engagement'. This sets out how risk will be communicated (Measure 16), people will be warned and informed (Measure 17), how partnership working will take place with other organisations (Measure 18) and how emergency response plans will be developed (Measure 19).

Overall, in respect of 'high level awareness and engagement', while beneficial effects are anticipated across the range of SEA Objectives, significant beneficial effects are anticipated in relation to that seek to ensure protection to built infrastructure and assets and how this will have beneficial effects on people through lowering the risk of flooding and reducing the stress involved. Reliable information alleviates anxiety, while training in emergency skills enhances safety. Timely flood warnings enable safe evacuations, property protection, and psychological preparedness, reducing panic and fostering community resilience. Warning and informing residents about flooding is a vital component of disaster risk reduction. It saves lives, protects property, minimises economic losses, enhances community resilience. Working with partner organisations will also be very beneficial and it is recommended that the LFRMSP notes more clearly that this will include organisations concerned with health and social care as well as economic agencies.

Following assessment of the Measures set out in LFRMSP, consideration was then made of the series of Actions based on these measures to alleviate flood risk for each of the locations identified as at risk of flooding across the catchments of the Neath Port Talbot area.

For many areas, it is acknowledged in the LFRMSP that there is a lack of understanding of what is causing the flooding or the precise mechanisms of flooding, the extent of the flood risk and how best to address that risk. As such, for many areas the key actions relate to undertaking assessments, update mapping, liaise with other organisations, undertake feasibility studies and so on. This lack of understanding is reflected in the range of Measures and subsequent Actions, which cover many of the activities that are required to fully understand these issues. The SEA considered that these types of Actions are not likely to result, in themselves, in significant environmental effects.

There are though elements of LFRMSP that could result in adverse environmental effects, some of which may be significant. This partly a reflection of the nature of the geography and topography of parts of Neath Port Talbot – steep sided valleys mean that many watercourses are very flashy in nature and can carry significant amounts of debris down the channel that is often the main cause of flooding to the area. As such, inspections and maintenance form a key element of the Plan.

While for the most part it is anticipated that activities associated with maintenance will be reasonably limited. For example, in the River Tawe catchment, 18 assets are noted, but these are all trash screens and maintenance activities here would mainly involve removing debris from these trash screens. However, there is a potential that some maintenance activities could be more intrusive or of greater extent. For example, note is made under Measure 10 of activities such as grid cleansing, de-silting, and channel clearance to allow for the drainage systems to work at maximum capacity. This raises the potential for pollution incidents such as silt deposition downstream of such activities. Nevertheless, it is considered that such pollution risk can be well managed through the use of silt traps, silt mats, silt curtains and so on. The SEA notes such mitigation measures.

Construction of flood alleviation schemes represent the main part of the LFRMSP that are anticipated by the SEA to potentially result in adverse environmental effects, often potentially significant. Such schemes are limited though and if not already in construction, are all in various stages of design and progress. This has included consideration of whether formal EIA is required or not. Where not, consideration of environmental issues has taken place where required, along with the development of Construction Environmental Management Plans. In addition, consideration was made of issues such as community adaptation (recreation or amenity gain), along with liaison with statutory bodies and this has helped inform design. Biodiversity gain has also been considered though this is more difficult to achieve in the relatively constrained urban environment in which the schemes are proposed.



Another key Action set out in the LFRMSP is the need to liaise with other organisations. Clear note is made that flood risk management involves collaboration among various key agencies. Natural Resources Wales (NRW) oversees main rivers, coastal erosion, and reservoir safety, offering strategic guidance. NPTCBC acting as Lead Local Flood Authority (LLFA) manage local flood risks from surface water, groundwater, and watercourses. Water and sewerage company Dwr Cymru Welsh Water (DCWW) ensure drainage systems can handle waste water and combined water floods during periods of heavy rainfall, while highway authorities manage flood risks on road networks. Emergency services, including fire, police, and ambulance services, provide immediate response during floods.

The SEA notes this Action to liaise with such bodies and anticipates a range of beneficial effects can be realised from this. However, it is also noted that dealing with other organisations can bring complexity to issues, or issues with lines of communication, roles and responsibilities. Another factor which is clear in the LFRMSP is the need to deal with private companies or individuals on occasion. For example, note is made that in some areas it will be the responsibility of the land owners to ensure their drainage apparatus is cleansed effectively to deal with rainfall, while the flood authority will ensure the area is mapped out to understand the drainage network serving the area. These details will then be passed onto the residents so that they are aware of the surface water flood risk. Nevertheless, it is anticipated that such issues can be dealt with through existing powers, approaches and policies.

Overall, it is anticipated that the LFRMSP represents a well-balanced approach in terms of environmental performance across the full range of potential key effects delineated in the SEA Framework. It is also important to note that many of the measures noted in the LFRMSP are aligned with the Objectives of the Water Framework Directive and its associated River Basin Management Plans and Opportunity Catchment Areas. In particular, the implementation of SuDS, Natural Flood Management and Nature Based Solutions will provide opportunities for more natural runoff rates in catchments, improvements in water quality, reduction in pollution, reduction in the need for hard infrastructure (or allow for the removal of some man made features) and so on. Those measures that encourage collaboration across a range of organisations would also allow for a more collaborative and integrated approach to catchment management.

1. Introduction

1.1 Purpose of this document

This is the Strategic Environmental Assessment (SEA) Report of the Neath Port Talbot Local Flood Risk Management Strategy and Plan (LFRMSP), which has been prepared by AtkinsRéalis on behalf of Neath Port Talbot County Borough Council (NPTCBC).

This Report fulfils requirements of the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 and sets out to show the anticipated significant effects of implementation of the LFRMSP on the environment of Wales and in particular Neath Port Talbot. This Report also sets out to provide detail on proposed mitigation to minimise significant adverse effects, whilst bolstering those effects considered likely to be beneficial to the environment and a programme for monitoring effects is also proposed.

SEA is considered the first opportunity to provide for a high level of protection of the environment during the development of plans. As such, this Environmental Report (ER) also sets out to provide detail on how environmental protection was considered during the development of the LFRMSP and incorporated into the proposed Strategy.

1.2 The background and need for the Local Flood Risk Management Strategy and Plan

The LFRMSP sets out how NPTCBC intend to deal with flood risk from surface water, ordinary watercourses, and groundwater within the Neath Port Talbot County Borough Council area. It describes how, as the Lead Local Flood Authority (LLFA) NPTCBC will mitigate the risk of flooding to local communities and businesses across the county, with the aim to improve resilience to communities, infrastructure, and the wider environment.

This Strategy and Plan therefore considers how various activities by the LLFA can assist in managing flood risk, including better planning policies to ensure new development does not increase flood risk, the effective management of surrounding landscapes to reduce flooding at source, and to ensure that emergency services respond to where they are needed the most. The LFRMSP will also consider the effects of a changing climate and the associated increased risk of more frequent heavy rainfall events and while it is to be recognised that it is not possible to prevent all flooding, it is possible to consider the risks and take a pro-active approach to manage these risks, likelihoods, and consequences.

LLFAs are responsible for “local flood risk” which is defined as flood risk from:

- Surface water runoff
- Groundwater; and
- Ordinary watercourses (smaller watercourses)

This Local Strategy focuses on these local sources of flood risk but acknowledges and considers other sources of flood risk (including the sea, larger watercourses, and sewers) and associated Risk Management Authorities.

The Local Flood Risk Management Strategy is a statutory document which will impact on activities of all Flood Risk Management Authorities – i.e. Welsh Government, Local Authorities, Natural Resources Wales, Highway Authorities, water companies and Internal Drainage Boards. The Flood and Water Management Act 2010 requires that Neath Port Talbot County Borough Council take a leading role in managing local flood risks, working in partnership with



other relevant authorities and the public. It is also worth noting that water companies are developing Drainage and Wastewater Management Plans (DWMP) and close linkages to water companies will allow for close interaction on related issues.

Whilst previously NPTCBC published the Local Strategy and FRMP separately, this new Local Strategy and Plan integrates the two documents into one. It is the intention that this will reduce complexity, duplication, and enables NPTCBC to communicate and manage local flood risk more effectively. This LFRMSP will work alongside other strategic plans for shoreline management, infrastructure and planning to address flood risk.

1.3 Need for and approach to the SEA

The EU Directive 2001/42/EC on assessment of effects of certain plans and programmes on the environment (the 'SEA Directive') came into force in Wales through the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004. The Directive applies to a variety of plans and programmes including flood management. While Wales, as a country within the United Kingdom, has now left the EU, these SEA Regulations still apply to a wide range of plans and programmes, including flood plans, and modifications to them.

These SEA Regulations still reflect the overarching objective of the SEA Directive which is:

“To provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans...with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans...which are likely to have significant effects on the environment.” (Article 1)

The SEA Directive and the SEA Regulations state that the SEA should consider the following topic areas:

- Biodiversity;
- Population;
- Human health;
- Flora and fauna;
- Soil;
- Water;
- Air;
- Climatic factors;
- Material assets;
- Cultural heritage, including archaeological and built heritage;
- Landscape; and
- the Interrelationship between these factors.

1.4 The SEA Process

The SEA guidance recommends that SEA is undertaken in the following main stages:

Stage A – Setting the context and objectives, establishing the baseline and deciding on scope;

Stage B – Developing and refining options and assessing effects;

Stage C – Preparing the Environmental Report;

Stage D – Consultation on the preferred options of the draft plan and the Environmental Report; and

Stage E – Monitoring implementation of the plan.



SEA is an iterative assessment process that aims to ensure that potential significant environmental effects arising from a plan are identified, assessed, and mitigated.. This allows Plan makers to consider this understanding to help inform development of the Plan. SEA also requires the monitoring of significant effects once the plan/programme is implemented. Through consultation and the involvement of stakeholders and specialist experts in the process, the resulting appraisal should be both robust and fully integrated.

The intention is that SEA is fully integrated into the strategy making process from the earliest stages, both informing and being informed by it. By identifying potential issues at an early stage it is then possible to amend the policies/plans to ensure that they are as sustainable as possible.

This ER will be published for information and consultation alongside the Draft LFRMSP. A SEA Post Adoption Statement will then be published alongside the Final LFRMSP, which will summarise how environmental issues were integrated into the LFRMSP development process; the reasons for choosing the preferred options; the consultation results and the monitoring that is proposed.

Table 1.1 sets out the relationship between the LFRMSP and SEA processes and the SEA tasks, which are being applied to the SEA of the LFRMSP.

The current guidance also sets out a requirement for the preparation of the following reports:

- Scoping Report (summarising Stage A work) which should be used for consultation on the scope of the SEA;
- Draft Environmental Report (documenting Stages A , B and C) work which should be used in the public consultation on the Draft LFRMSP; and
- Environmental Report (documenting Stages A, B, C and D work) which should accompany the LFRMSP.

To date, Stages A - C of the process have been undertaken and this is fully documented under the Methodology in Section 2. This is the ER documenting the SEA work undertaken to inform the preparation of the Draft LFRMSP.

Table 1-1 - LFRMSP and SEA stages and links

LFRMSP	Strategic Environmental Assessment	
	Stage	Tasks
Determining the scope of the project clarifying goals; specifying the problems or challenges the Strategy Plan wants to solve	A. Setting the context and objectives, establishing the baseline and deciding on the scope	Identify related plans/programmes
		Identify environmental protection objectives
		Baseline data and likely future trends
		Identify sustainability issues
		Develop objectives, indicators and targets (Assessment Framework)
		Prepare SEA Scoping Report
Generating options to resolve these challenges; appraising the options and predicting their effects	B. Developing, refining and appraising strategic options	Assess project objectives against the Assessment Framework
		Develop, refine and appraise strategic options
		Evaluate/select preferred options.



LFRMSP	Strategic Environmental Assessment	
	Stage	Tasks
Selecting preferred options for the LFRMSP and deciding priorities	B. Assessing the effects of the projects Preferred Options	Predict and assess effects of options taken forward
		Propose mitigation measures
Production of the draft Strategy		Propose monitoring programme
	C. Prepare Environmental Report	
Consultation on draft Strategy	D. Consultation on the Environmental Report	
Production of final Strategy	D. Take on board consultation comments	Assess significant changes
		Prepare supplementary or revised Environmental Report (if necessary)
Adoption of Strategy	D. SEA Statement	

1.5 Geographical and temporal scope

The LFRMSP will apply to the administrative area of NPTCBC as shown in Figure 1-1. However, watercourses and flood pathways do not respect administrative boundaries; the nature and extent of flood risk management issues means that cross boundary liaison is essential, to ensure that neighbouring LFRMSPs both shape and are shaped by the situation in Neath Port Talbot.

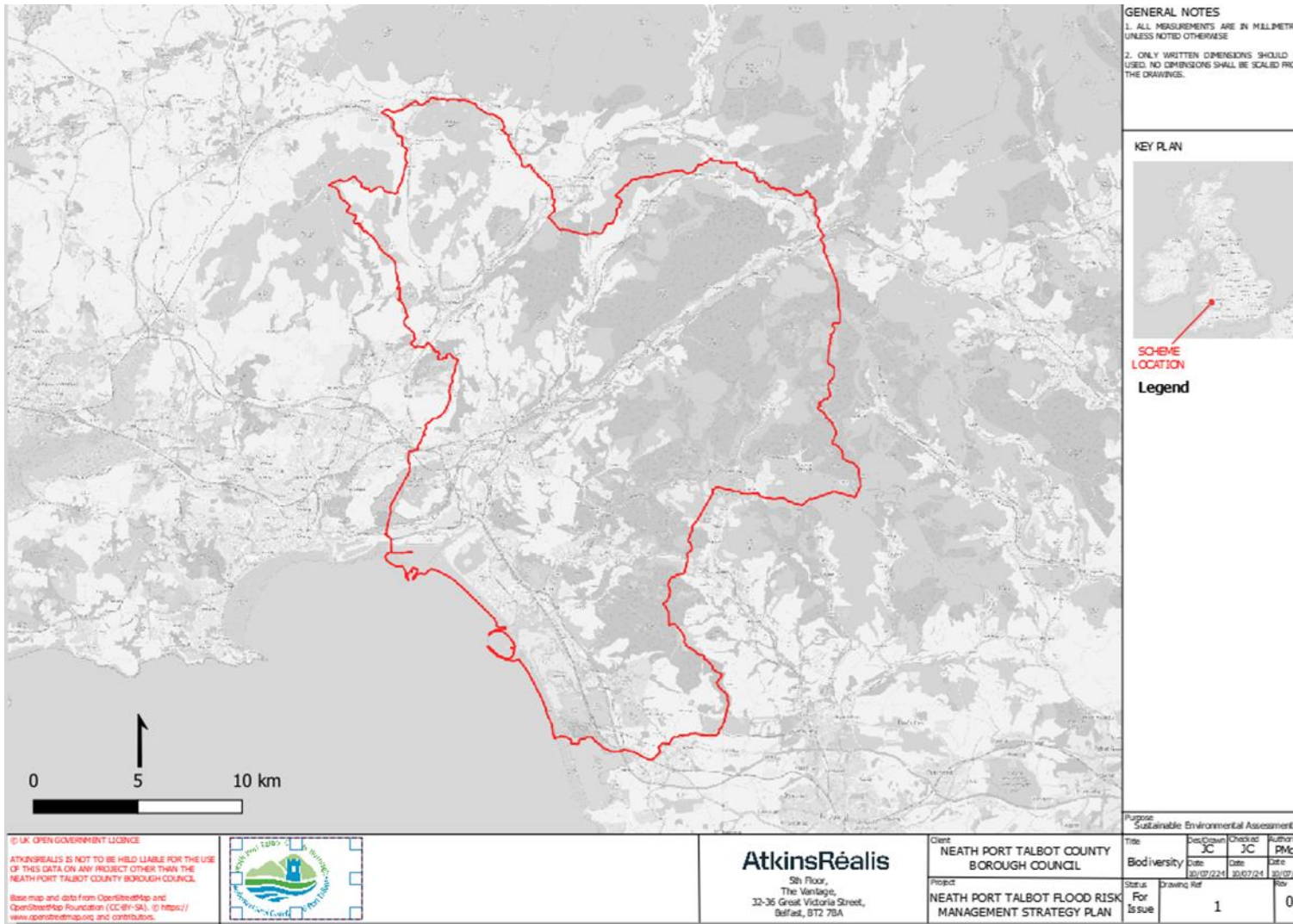
Neighbouring authorities to Neath Port Talbot are:

- City and County of Swansea,
- Carmarthenshire County Council,
- Bridgend County Borough Council
- Rhondda Cynon Taff County Borough Council and
- Powys County Council.

Note that NPTCBC already forms part of a Flood Risk Management partnership in the South West Wales Region comprising of management authorities. These groups are fundamental to the delivery of a coordinated and consistent approach to local flood and coastal risk management ensuring NPTCBC work alongside various stakeholders and the public to make a real difference in the County Borough. Co-ordination also takes place via the Local Resilience Forum (a group responsible for coordination of emergency planning in local areas). It is the intention that this LFRMSP will be reviewed and updated every two (2) years, with a more extensive revision taking place every 6 years.



Figure 1-1 - LFRMSP area



1.6 Technical scope and data limitations

The SEA Directive and the SEA regulations require that the likely significant effects on the environment are assessed, considering the following factors and interrelationship between them:

- Biodiversity;
- Population;
- Human health (covering noise issues among other effects on local communities and public health);
- Fauna and flora;
- Soil;
- Water;
- Air;
- Noise;
- Climatic factors;
- Material assets (covering infrastructure, waste and other assets);
- Cultural heritage including architectural and archaeological heritage; and
- Landscape.

No topics were scoped out from assessment and it is considered that the data sets available and utilised in this assessment provide a comprehensive overview of the environmental situation in Neath Port Talbot and further afield. No data limitations were noted that were considered to impact on the assessment process or findings.

In addition to the above, a Habitats Regulation Assessment has been undertaken and consideration made of the Water Framework Directive. The results of these other assessments have been used to inform the SEA.

2. SEA Methodology

2.1 Overview of Approach

As noted, SEA is a process that follows a number of sequential stages. This report has been structured to reflect the way in which work has been undertaken, presenting a logical progression through the various tasks that local authorities must complete in order to satisfy formal SEA requirements. This sequence of tasks is presented in Table 1.1 in Chapter 1.

The approach used in the SEA of the LFRMSP is based on the process set out in national guidance, to meet the requirements of the SEA Regulations. Current guidance sets out a requirement for the preparation of the ER (documenting work in Stages A and B) which should be used in the public consultation on the Draft LFRMSP.

2.1.1 Stage A: Setting the Context and Objectives, Establishing the Baseline and Deciding on Scope

Scoping work was undertaken, consulted upon and revised in order to help ensure that the SEA covered the key environmental issues that are relevant to Neath Port Talbot within the context of the LFRMSP. Following consultation on the Scoping Report, the baseline, the Plans, Programmes and Policies (PPPs), key environmental issues and the SEA Framework were updated, in preparation for the assessment of the Draft LFRMSP.

A1: Identifying other relevant policies, plans and programmes and SEA objectives

Both the LFRMSP and the SEA should be set in the context of national, regional and local objectives along with strategic planning and environmental policies. This being the case, a comprehensive review of all relevant plans, policies and programmes (PPPs) was carried out as part of the SEA scoping process. This ensures that the objectives in the ER generally adhere to, and are not in conflict with, objectives found in other PPPs and also assists in the setting of objectives for the SEA. In addition to this, it can also be used to ascertain potential conflicts between objectives which may need to be addressed as part of the process.

The PPPs reviewed are outlined in Section 3 and further described in Appendix A.

A2: Collecting baseline information

To predict accurately how the LFRMSP measures could affect environmental factors, it is first important to understand the current state of these factors and then examine their likely evolution without the implementation of the plan.

Baseline information is summarised in Section 4 and presented in Appendix B. The information has been extracted from a wide range of available publications and datasets. Sources have included, among others, national government and government agency websites. No primary research has been conducted.

A3: Identifying issues and opportunities

Analysis of key issues and opportunities relevant to the LFRMSP was carried out. This work was based on the review of relevant PPPs and an analysis of the baseline data and is presented in Section 4.



A4: Developing the SEA Framework

A framework of objectives and decision making questions, against which the measures in the LFRMSP can be assessed, was drawn up. These were developed using an iterative process, based on the review of relevant PPPs, the evolving baseline and developing analysis of key sustainability issues. This is presented in Section 5.

A5: Consulting on the scope of SEA

At this stage the NPTCBC sought the views of the consultation bodies and others on the scope and level of detail of the ensuing SEA Report. A SEA Scoping Report was prepared to support the process. The consultation results have been taken into account in this report (see Appendix E).

2.1.2 Stage B: Developing and Defining Options

B1: Testing the plan objectives against the SEA objectives

A compatibility matrix was developed to identify to what extent the objectives of the LFRMSP are compatible with the SEA Objectives as set out in the SEA framework. When testing compatibility, the following scale was used as shown in Table 2-1. The results are presented in Section 7.

Table 2-1 - Key to compatibility of Objectives

✓	Objectives are considered broadly compatible
X	There is potential conflict between Objectives
?	Compatibility depends upon the nature of implementation
NR	Not relevant / No relationship

B2: Developing the plan options

Assessment of Strategic alternatives

A high level assessment of reasonable alternatives for the measures developed for the LFRMSP was then conducted. The assessment used a broad-brush and qualitative approach, which is generally accepted as good practice by the SEA guidance for the earlier strategic stages of the appraisal.

Potential environmental effects for each of the identified alternatives were assessed in terms of progress towards achieving the relevant SEA objective using the scoring system presented in Table -2-2.

The high level assessment of the options allowed the most and least sustainable options to be identified, with the aim of, where necessary, amending them in order to promote their likely sustainable effects and reduce their likely unsustainable effects. This assessment also informed the selection of options to be taken forward as preferred options within the LFRMSP. The results of the assessment are presented in Section 6.

Table 2-2 - Assessment of alternatives - scale

	Implementation of the LFRMSP is anticipated to have a negative effect in comparison to existing approach
	Implementation of the LFRMSP may have a beneficial or adverse effect in comparison to existing approach, depending upon implementation

	Implementation of the LFRMSP is anticipated to have a beneficial effect in comparison to existing approach
N/A	Not applicable or not relevant
Neutral	No effect over and above the current approach has been identified / is anticipated

B3 & B4: Predicting & Evaluating the effects of the Preferred Strategy

This assessment stage forms the statutory assessment of the preferred LFRMSP, with the prediction of effects undertaken for each Measure and Action being implemented through the LFRMSP against the SEA Framework.

The next stage of the assessment involved the evaluation of the significant effects. The evaluation involved forming a judgement on whether or not the predicted effects will be environmentally significant. The technique that has primarily been used to assess the significance of effects in this assessment is qualitative and largely based on expert judgement. Other techniques included consultation with stakeholders involved in the SEA process, geographical information systems (GIS) and reference to key legislation, primarily the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004.

The criteria for assessing the significance of a specific effect used in this assessment, as outlined in Annex II of the SEA Directive, has been based on the following parameters to determine the significance:

- scale;
- permanence;
- nature and sensitivity;
- cumulative effects.

In general, this assessment has adopted the scale set in Table 2-3 to assess the effects (and their significance) of the LFRMSP proposals.

Table 2-3 - Criteria for assessing significance of effect

Assessment Scale	Assessment Category	Significance of Effect
+++	Major beneficial	Significant
++	Moderate beneficial	
+	Slight beneficial	
0	Neutral or no obvious effect	Not Significant
-	Slight adverse	
--	Moderate adverse	Significant
---	Major adverse	

Moderately and strongly positive and negative effects have been considered of significance whereas neutral and slightly positive and negative effects have been considered non-significant; noting that there may be mixed beneficial and adverse effects.



Secondary and Cumulative Effects Assessments

Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 required that the assessment of effects include secondary, cumulative and synergistic effects.

Secondary or indirect effects are effects that are not a direct result of the plan, but occur away from the original effect or as a result of the complex pathway e.g. a development that changes a water table and thus affects the ecology of a nearby wetland. These effects are not cumulative and have been identified and assessed primarily through the examination of the relationship between various objectives during the assessment of environmental effects.

Cumulative effects arise where several proposals individually may or may not have a significant effect, but in combination have a significant effect due to spatial crowding or temporal overlap between plans, proposals and actions and repeated removal or addition of resources due to proposals and actions. Cumulative effects can be:

- additive - the simple sum of all the effects;
- neutralising - where effects counteract each other to reduce the overall effect; and
- synergistic – is the effect of two or more effects acting together which is greater than the simple sum of the effects when acting alone (for instance, a wildlife habitat can become progressively fragmented with limited effects on a particular species until the last fragmentation makes the areas too small to support the species at all).

Many environmental problems result from cumulative effects. These effects are very hard to deal with on a project by project basis through Environmental Impact Assessment. It is at the strategic level that they are most effectively identified and addressed.

Cumulative effects assessment is a systematic procedure for identifying and evaluating the significance of effects from multiple activities. The analysis of the causes, pathways and consequences of these effects is an essential part of the process.

Cumulative (including additive, neutralising and synergistic) effects have been considered throughout the entire SEA process, as described below:

- As part of the review of relevant strategies, plans and programmes and the derivation of draft SEA Objectives, key receptors have been identified which may be subject to cumulative effects.
- In the process of collecting baseline information cumulative effects have been considered by identifying key receptors or issues and information on how these have changed with time, and how they are likely to change without the implementation of the LFRMS.
- Through the analysis of environmental issues and problems, receptors have been identified that are particularly sensitive, in decline or near to their threshold (where such information is available).
- The development of the SEA Objectives and decision-making Questions has been influenced by cumulative effects identified through the process above and the SEA Objectives that consider cumulative effects have been identified.
- The likely cumulative effects of the NPTLFRMS policies have been identified.

The results are presented in Section 11.

B5: Consider ways of mitigating adverse effects and maximising beneficial effects

Mitigation measures have been identified during the evaluation process to reduce the scale/importance of significant negative effects.



B6: Proposing measures to monitor the significant effects of the plan's implementation

Monitoring involves measuring indicators which will enable the establishment of a causal link between the implementation of the plan and the likely significant effect (positive or negative) being monitored. It thus helps to ensure that any adverse effects which arise during implementation, whether or not they were foreseen, can be identified and that action can be taken by NPTCBC to deal with them (see Chapter 12).

2.1.3 Stage C: Preparing the Environmental Report

The Environmental Report (this document) is the outcome of Stage C in the SEA Process and informs the LFRMSP Preferred Strategy consultation.

2.1.4 Stage D: Consulting on the Draft Plan and the Environmental Report

Stage D will be undertaken once the LFRMSP Preferred Strategy and Environmental Report consultation has taken place.

Assessing significant changes and the SEA Statement

The results of the formal public consultation exercise on the Draft LFRMSP and Environmental Report to be undertaken by NPTCBC may well result in changes to the Draft LFRMSP, and these may have implications for the Environmental Report. In addition, the consultation exercise may result in direct changes to the contents of the Environmental Report, such as revisions to mitigation or monitoring measures.

The SEA Regulations require that information on the changes to the Environmental Report resulting from the formal consultation is recorded in the SEA statement of how the SEA findings have been taken into account in the final strategy, which should be made available to stakeholders.

Meeting the requirements of the SEA Directive

The SEA is primarily focused on environmental effects and the methodology addresses a number of topic areas namely Biodiversity, Population, Human Health, Flora and Flora, Soil, Water, Air, Climatic Factors, Material Assets, Cultural Heritage and Landscape and the interrelationship between these topics. Table 2-4 sets out where the specific SEA requirements have been met in this Environmental Report. Where they have not yet been completed, this is made clear.

Table 2-4 - Schedule of SEA requirements

Requirements of the SEA Regulations	Where covered in the Report
Preparation of an environmental report in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and geographical scope of the plan or programme, are identified, described and evaluated. The information to be given is:	
a) An outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes	Sections 1 and 3
b) The relevant aspects of the current state of the environment and the likely evolution without implementation of the plan or programme	Section 4 and Appendix B
c) The environmental characteristics of areas likely to be significantly affected	Section 4 and Appendix B
d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular	Section 4 and Appendix B



environmental importance, such as areas designated pursuant to Directive 2009/147/EEC and 92/43/EEC	
e) The environmental protection objectives established at international, community or national level which are relevant to the programme and the way those objectives and any environmental considerations have been taken into account during its preparation	Sections 3 - 9
f) The likely significant effects on the environment, including: short, medium and long term; permanent and temporary; positive and negative; secondary, cumulative and synergistic effects on issues such as: biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors.	Sections 6 - 9
g) The measures envisaged to prevent, reduce and, as fully as possible, offset any significant adverse effects on the environment of implementing the plan or programme.	Section 10
h) An outline of the reasons for selecting the alternatives dealt with and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information	Section 6
i) A description of measures envisaged concerning monitoring (in accordance with regulation 17)	Section 12
j) A non-technical summary of the information provided under the above headings	NTS

2.1.5 Consultation

The aim of the consultation on the ER is to involve and engage with statutory consultees and other key stakeholders on the results of the appraisal.

The requirements for consultation during a SEA are as follows.

Authorities which, because of their environmental responsibilities, are likely to be concerned by the effects of implementing the plan or programme, must be consulted on the scope and level of detail of the information to be included in the Strategic Environmental Assessment. These are termed the statutory Consultation Bodies, and in Wales comprise Cadw and Natural Resource Wales.

The public and Consultation Bodies must be consulted on LFRMSP and the Environmental Report.

The following reports have been consulted upon as part of this SEA process:

- Strategic Environmental Assessment Scoping Report, 16 July 2024 to 27 August 2024.

The organisations that have responded to consultation to date (Scoping Report) are presented in Appendix E.

This Environmental Report, to be subject to consultation, is a statutory part of the SEA process, to be used to further enable the integration of environmentally sustainable principles into the plan making process.



3. Review of relevant legislation and other plans and programmes

3.1 Introduction

The Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 (the SEA Regulations) require that information be provided on:

"The degree to which the plan or programme influences other plans and programmes including those in a hierarchy" (Schedule 1);

"Its relationship with other relevant plans and programmes" (Schedule 2); and

"The environmental protection objectives, established at international, Community or [National] level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation." (Schedule 2)

The project will both influence and be influenced by other plans, policies and programmes (PPPs) produced by local authorities, statutory agencies (at an international, national, regional and local level) and other bodies with plan making responsibilities. Legislation is a further driver that sets the framework for the project, both directly and indirectly

Therefore, the SEA considers the relationship between the LFRMSP and relevant legislation, other relevant plans and programmes and the environmental protection objectives established at various administrative levels. This ensures that the objectives in the LFRMSP generally adhere to, and are not in conflict with, objectives found in other plans, programmes and legislation and also assists in the setting of objectives for the SEA. It can also be used to ascertain potential conflicts between objectives, which will need to be addressed as part of the process.

Appendix A provides the full list of plans, programmes and legislation that were reviewed. Note that cross reference is made to the review of PPPs undertaken for Welsh Government's National Flood and Coast Erosion Risk Management Strategy, the Natural Resources Wales Flood Risk Management Plan (National and South West Wales) as well as the Second Cycle Natural Resources Wales Flood Risk Management Plan Strategic Environmental Assessment.

It should also be noted that legislation, plans, policies etc., are all subject to change. For example, in response to consultation on the Scoping Report, Cadw noted that The Historic Environment (Wales) Act 2023 will be enacted before the SEA is produced. This will replace The Ancient Monuments and Archaeological Areas Act 1979; The Historic Environment (Wales) Act 2016 and The Planning (Listed Building and Conservation Areas) Act 1990. The enactment of the Act will also lead to revisions to Technical Advice Note 24: The Historic Environment 2017 and other guidance notes. Nevertheless, it is considered that the following key themes identified from the review of PPPs remains robust and comprehensive. Key themes

A series of key themes and messages relating to environmental sustainability within the context of water management planning which have emerged from the review of PPPs are presented below.

Air Quality

- Reduce emissions of NO₂
- Reduce emissions from construction traffic and machinery in particular
- Increase use of low emission / zero emission at point of use construction vehicles and machinery



- Reduce emissions of PM10 and PM2.5

Greenhouse Gas (GHG) Emissions

- Reduce GHG emissions, particularly CO2
- Maximise the use of renewable energy
- Increase energy efficiency and make use of new technology
- Minimise use of fossil fuels
- Prioritise options which will not involve the emission of GHGs in the future, through pumping for example
- Contribute to the achievement of national Net Zero target by 2050

Adaptation to a Changing Climate and Flooding

- Prepare for extreme weather events and sea level rise
- Minimise the risk and impact of river, surface and groundwater flooding
- Minimise risk and impact of coastal flooding and erosion damage
- Minimise risk and impact of heatwaves, wildfires, reduced water availability and soil desiccation.

Biodiversity, Fauna and Flora

- Protection of sites designated for nature conservation purposes and areas of irreplaceable habitat
- Protect and enhance endangered or important species and habitats
- Contribute to the delivery of biodiversity strategies and plans
- Increase area of important habitat
- Protect, maintain and enhance natural habitat networks and green infrastructure, to avoid fragmentation and isolation of networks
- Creation of green infrastructure
- Achievement of a Net Benefit for Biodiversity – note this does not set a target, rather it supports a proactive approach that takes a more site specific and qualitative assessment based on DECCA resilience attributes.

Cultural Heritage

- Conserve and protect historic assets (designated and undesignated) and those of cultural note, including archaeology and historic landscapes
- No harm to physical assets and their settings
- Protect and improve setting to historic assets, including buildings and landscapes of value where appropriate

Water Resources

- Protect and improve the quality of ground and surface water and optimise conjunctive use of sources
- Contribute to the objectives of the Water Framework Directive (WFD) Regulations
- Make use of Sustainable Drainage Systems (SuDS)
- Prevent or limit inputs of pollutants into groundwater, including chlorides and nitrates
- Promote efficient use of water
- Accelerate the programme to reduce nutrient overload, particularly from diffuse pollution
- Make space for water and wildlife along rivers and around wetlands
- Restore natural processes in river catchments, including ways to support climate change adaptation and mitigation



- Ensure resilience in river catchments so that they are better able to cope with periods of dry weather / heavy rainfall

Land Use, Soil and Agriculture

- Prioritise development on brownfield sites (though recognising how this can also be important for biodiversity)
- Seek to reclaim derelict and contaminated land
- Prevent soil contamination
- Protect farmland and soils, particularly those considered Best and Most Versatile (BMV) Agricultural Land
- Promote change of agricultural land use to woodland, grassland, restoration of peatland etc. to help with carbon sequestration targets

Landscapes and Townscapes

- Protect and enhance landscape and townscape character and local distinctiveness
- Protect tranquillity from the impacts of noise and light pollution
- Protect and enhance seascapes

Natural Resources and Waste

- Ensure efficient resource use and minimise resource footprint
- Use secondary and recycled materials
- Consider opportunities to maximise on-site re-use of materials
- Employ waste reduction methods to minimise construction and maintenance waste
- Reduce the amount of waste disposed of at landfill
- Promote circular economy
- Avoid the sterilisation of mineral resources

Population and Human Health

- Tackle poor health by improving the health of everyone, and of the worst off in particular
- Create a green economy and promote sustainable growth
- Promote sustainable and healthy communities
- Promote social inclusion and community participation
- Address pockets of deprivation
- Provide for an ageing population

Cross cutting

- South West Wales Area Statement
- NPT's Replacement Local Development Plan
- NPT Decarbonisation and Renewable Energy Strategy
- NPT Well Being Plan 2023-28
- NPT Local Nature Partnership Nature Recovery Action Plan
- Note also that NPT Public Service Board has committed to undertaking a Climate Change Risk Assessment and is currently exploring flood risk as a pilot



Well-being of Future Generations (Wales) Act 2015

In addition, it is to be noted that sustainable development is a key consideration across Wales, with the Well-being of Future Generations (Wales) Act 2015 setting out the need to improve the social, economic, environmental and cultural well-being of Wales. This Act sets out seven well-being goals as follows:

- A prosperous Wales
- A resilient Wales
- A healthier Wales
- A more equal Wales
- A Wales of cohesive communities
- A Wales of vibrant culture and thriving Welsh language
- A globally responsible Wales

This SEA should aim to reflect the above goals and seek to influence the development of the LFRMSP to ensure that opportunities to enhance sustainable development are taken and adverse effects that could compromise achieving the above goals are avoided.

Environment (Wales) Act 2016

Similarly, the Environment (Wales) Act 2016 sets out the requirement to manage the natural resources of Wales in a sustainable and joined up way that delivers real outcomes for the environment, people, economy and communities of Wales. This Act led to the development of the Natural Resources Policy for Wales, which highlights three national priorities:

- Delivering nature-based solutions and places a duty on public authorities to maintain and enhance biodiversity
- Increasing resource efficiency and renewable energy
- Taking a place-based approach – working locally in a joined-up way

As with the requirements of the Well-being of Future Generations (Wales) Act 2015, the SEA needs to recognise the need to reflect and be aligned with the national priorities for Wales and seek to influence the LFRMSP in that regard. It is also to be noted that this would be in keeping with the approach taken during the development of the Second Cycle Flood Risk Management Plan for Wales (March 2023).

The National Strategy for Flood and Coastal Erosion Risk Management in Wales (2020) and Section 18 update (2023)

Across Wales over 245,000 properties are at risk of flooding from rivers, the sea and surface water with almost 400 properties also at risk from coastal erosion. Managing the risk from flooding and coastal erosion is considered a priority for the Welsh Government and as such, a Flood and Coastal Erosion Risk Management (FCERM) national strategy was developed in 2020 and updated in 2023. This strategy sets out how it is intended to manage flood and coastal erosion risk over a 10 year period and details a series of objectives and measures aligned to that ambition.

Allied to the National Strategy, a Strategic Environmental Assessment was carried out to ascertain the implications of implementing the strategy and considers a series of SEA objectives and outlines relevant guide questions.

As required by the National Strategy, Local Flood Risk Management Strategies must be consistent with the National Strategy, aligning with the objectives and measures contained within it, and consistent with the related policies and legislation. As such, it is the intention that the SEA being undertaken of the LFRMSP will align to the national level SEA, though it will also recognise the local context of Neath Port Talbot.



The Wales Flood Risk Management Plan (including the South West Wales Place)

The National Flood Risk Management Plan covers all of Wales and provides information on the scale of flood risk, as well as NRW's priorities for managing the risk of flooding, and measures that it is proposed to take, over the coming years. This FRMP covers flooding from rivers, reservoirs and the sea. It does not include flooding from surface water and smaller watercourses, for which Lead Local Flood Authorities (LLFAs) have powers and take the lead. The South West Wales Place document sets out further detailed information and measures at the local scale – in this instance covering the Neath Port Talbot area. Of particular note are that mitigating and adapting a changing climate, as well as nature based solutions are identified as key issues.



4. Baseline information and key environmental issues

4.1 Introduction

The SEA Regulations state that the Environmental Report should provide information on:

"The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme" and *"The environmental characteristics of areas likely to be significantly affected"* (Schedule 2)

and

"Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC on the conservation of wild birds and the Habitats Directive" (Schedule 2).

In order to assess the potential environmental effects of the project on the Study Area and surrounding areas, it is therefore necessary to establish a baseline against which predicted effects can be assessed, and then to identify issues and trends that are related to each of the environmental, social and economic interests that may be affected by, or affect, the proposed plan. As such, it is first important to understand the current state of the baseline and then examine the likely evolution of the environment without the implementation of the plan.

4.2 Key environmental issues and opportunities

The SEA Regulations state that the Environmental Report should provide information on:

"Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC on the conservation of wild birds and the Habitats Directive." (Schedule 2)

The key environmental issues have been identified from the review of baseline information and other plans and programmes. Note has also been made of the review of Plans and Policies and environmental context set out in the SEA Environmental Report to the Second Cycle Flood Risk Management Plan for Wales (2023)¹. These key issues are summarised in Table 4-1 below. This table also provides a discussion on the implications/opportunities of such issues to the project and provides clear links to the proposed SEA Objectives. The analysis of key environmental issues has influenced the development of the SEA Framework (see Section 6), in particular in formulating decision making questions.

¹ See [sea-frmp2-environmental-report.pdf \(cyfoethnaturiol.cymru\)](#)

Table 4-1 - Key environmental issues and opportunities for Neath Port Talbot LFRMSP

Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>Biodiversity</p> <p>Biodiversity and resilient ecosystems with their suite of habitats and species provide natural solutions that support human well-being and help adapt to the adverse impacts of climate change.</p> <p>Within Neath Port Talbot there are a number of areas designated for nature conservation. While there are no SPAs, but Coedydd Nedd a Mellte SAC and Crymlyn Bog / Cors Crymlyn SAC intersect the plan area, covering areas of 378.607 ha and 299.743 ha respectively. Kenfig / Cynffig SAC is adjacent to the southern boundary of the plan area, covering an area of 1190.898 ha. Crymlyn Bog Ramsar is also located within the plan area, covering an area of 266.699 ha. In addition, Crymlyn Bog And Pant Y Sais NNR is located within the plan area, covering 130.832 ha. There are also five LNRs and 21 SSSIs in the plan area and other such areas adjacent. Some of these areas are also designated as MPA – namely Crymlyn Burrows SSSI, Cynffig / Kenfig SSSI and SAC. Ancient woodland is also notable in the area, with 3375ha to be found.</p> <p>All sites, from those designated with the very highest level of protection, to those areas at the local level, are threatened by a wide range of issues such as habitat loss, human encroachment, poor management practices and invasive species. There are 14 priority habitats identified within the plan area; Marah Fritillary Habitat, Blanket Bog, Lowland Dry Acid Grassland, Lowland Meadows, Lowland Fens and Reedbeds, Lowland Heathland, Open Mosaic Habitat on Previously Developed Land, Parkland, Traditional Orchards, Purple Moor Grass and rush Pastures, Raised Bog, Upland</p>	<p>The LFRMSP should aim to protect and enhance all sites of biodiversity importance and place a particular emphasis on protecting sites designated for nature conservation, as well as candidate and potential sites. This could be achieved by ensuring that planning / design of any flood risk management scheme avoids (or aims to protect) sensitive areas where possible and through the adoption of best practice wildlife friendly designs that deliver multi-functional green infrastructure. Where this is not possible, there should be mitigation and compensation for losses.</p> <p>As such, consideration should be made of protected and priority species and their habitats, including local wildlife sites such as Sites of Improtance for Nature Conservation, as well as consideration of issues such as natural greenspace.</p> <p>Opportunities for new habitat creation and enhancement associated with flood risk management should be maximised e.g. this could be through the use of Natural Flood Management and Nature Based Solutions which would allow for the use of appropriate locally native species. There should be achievement of a Net Benefit for Biodiversity (considering the DECCA Framework outlined by Natural Resources Wales).</p> <p>The LFRMSP should avoid the fragmentation of green infrastructure, by seeking the integration and enhancement of the green infrastructure network to contribute to protecting natural habitats.</p> <p>The LFRMSP should help create cohesive habitat networks to help habitats and species adapt to the consequences of climate change, in particular. consider the support of water-dependent designated sites and priority habitat/species to adapt to climate change more specifically. Potential synergies with the Colliery Spoil Biodiversity Initiative should be explored, given the extensive mining activities that took place in Neath Port Talbot.</p> <p>The “Section 7 list” contains all the habitats and species of principal importance for Wales. Welsh Ministers must take all reasonable steps to maintain and enhance these habitats and species, in addition to encouraging</p>	<p>To protect and enhance biodiversity, priority species, vulnerable habitats, habitat connectivity and resilience with the capacity to adapt to change, and achieve Net Benefit for Biodiversity</p> <p>Protect and enhance areas designated under the Habitats Regulations</p>



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>Flushes Fens and Swamps, Upland Heathland and Wood Pasture.</p> <p>Key pressures and risks in respect of biodiversity and nature conservation that are particularly relevant have been identified from air pollution and climate change, which can change distribution of species and habitats. In addition, invasive non-native species (INNS) pose a serious and growing threat to native fauna and flora, with a changing climate providing opportunity for further expansion of their composition and range. There are other priority habitats within the Study Area that fall inside and outside of designated sites which are likely to be impacted by the project.</p> <p>Likely evolution of the baseline</p> <p>Habitats and species are likely to continue to be protected through legislation and in recognition of the continued threats and alarming levels of biodiversity decline, there are a range of commitments made at the International, National and Local levels to halt biodiversity loss and reverse those losses made to date – this has resulted in the need for new development to deliver a Net Benefit to Biodiversity in Wales. This also includes planning to combat biodiversity loss within Neath Port Talbot, for example through the Biodiversity Duty Plan 2023-2026 and the ‘State of Nature and Nature Recovery Action Plan’.</p> <p>Nevertheless, wildlife habitats across Wales, as with the rest of the UK, have become increasingly degraded, fragmented and isolated, leading to declines in the provision of some ecosystem services, and losses to species populations and this is likely to remain an issue. While some areas have noted improvements, e.g. through the need for Net Benefit for</p>	<p>others to take such steps – as such this has implications for the LFRMSP. Note in particular, the Section 7 fish species including salmonids, european eel and lamprey, as well as other species dependant upon the water environment such as Otter.</p> <p>In parallel with the SEA of the LFRMSP, HRA is being undertaken which will identify the internationally designated nature conservation areas likely to be affected, where possible establish the likelihood of impacts on the integrity of these sites and identify appropriate avoidance and mitigation measures early</p>	



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>Biodiversity and habitat regeneration such as replanting of trees, there are many habitats that are essentially irreplaceable such as Ancient Woodland – in short the replacement habitat is frequently not comparable to the ecological value that has been lost.</p> <p>Climate change will also likely result in decline of some habitats and species, and while it may afford opportunities for other species, this could include invasive species.</p>		
<p>Soil and Geodiversity</p> <p>There are a mix of land uses across the LFRMSP area, ranging from rural areas of open countryside or farmland to urbanised. There are also areas of urban fringe associated with the main towns and distinct pockets of ‘isolated’ urban development in the form of villages and small towns.</p> <p>Soils in Wales are already, and continue to be, degraded by human activity including intensive agriculture, historic levels of industrial pollution and urban development, making them vulnerable to erosion (by wind and water), compaction and loss of organic matter. It is notable that across Wales as a whole, there is a scarcity of the highest quality soils, though other areas are of particular environmental importance – for example, peat soils are particularly rich in carbon storage.</p> <p>Mineral extraction has historically been an extremely important element of the local economy in Neath Port Talbot - virtually the whole of the County Borough is underlain by coal resources. Whilst coal outcrops are located throughout the area, this mainly occurs in northern and southern areas where opencast mining is concentrated. The coal is recognised as being of high quality with anthracite in the</p>	<p>Soils and underlying geology play a critical role in the storing and flow of water and are of particular implication for flood management. Soil is a non-renewable resource and is vulnerable to erosion, degradation and contamination. In addition, historic land uses have contributed to contamination across large areas. As such, the LFRMSP must protect soils as they are essential for achieving a range of important ecosystem services and functions.</p> <p>The LFRMSP should seek to make best use of areas that are already urbanised and provide an opportunity for regeneration / improvements to land quality. Where use of agricultural land is unavoidable, measures should be taken to avoid those areas of the highest quality and aim to protect soil and agricultural holdings through avoidance of impacts such as erosion, contamination or severance. Opportunities for enhancing agricultural areas in terms of biodiversity should also be explored in relation to any flood protection Option.</p> <p>Dealing with the past pollution / contamination legacy is a major issue and should be addressed at all opportunities due to its ongoing environmental impact.</p> <p>The LFRMSP should pay particular consideration to areas covered by Mineral Safeguarding Area designations, to prevent the sterilisation of key mineral resources.</p>	<p>To protect and enhance geology, the functionality, quantity and quality of soils as a resource, and to support sustainable use of land for multiple benefits.</p>



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>north of the County Borough and, somewhat less widespread, steam coals in the southeast.</p> <p>In 2005, Neath Port Talbot County Borough Council determined one site as being contaminated after inspecting the area for contaminated land under Part 2A of the Environmental Protection Act 1990 between July 2001 and December 2013. However, given the past and current industrial activity, alongside infrastructure such as roads in the Neath Port Talbot area, it can be anticipated that contaminated areas are much greater than that known – this would be a typical situation across the UK.</p> <p>Likely evolution of the baseline</p> <p>Declining - it is likely that greenfield sites will experience increasing pressure for development in preference to the complexities of redeveloping previously developed and potentially contaminated sites. This could reduce available high quality soil resources and fail to realise the potential of existing capacity within existing urban and previously developed areas. Remediation of contamination is likely to remain sporadic and reflective of individual site requirements.</p> <p>While coal extraction is in decline, the remaining coal resource could still be considered to be a valuable national resource, though exploitation of this would have wider environmental challenges and considerations. As such, it is the Welsh Government’s coal extraction policy objective “to avoid the continued extraction and consumption of fossil fuels” and “to bring a managed end to the extraction and use of coal”. Effectively this means that new coal authority mining operation licences or variations to existing licences are not likely to be granted, unless in exceptional circumstances,</p>	<p>Given the large number within Neath Port Talbot, note should also be made of the importance of coal tip safety for disused coal tips, considering the risks associated with heavy rainfall and the potential implications of extreme weather events caused by a changing climate. It is worth noting that there are a total of 617 disused coal tips in Neath Port Talbot.</p>	



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>whereby each application will be decided on its own merits. Under Welsh Government policy, there is a presumption against new coal extraction operations.</p>		
<p>Water</p> <p>There are considerable pressures on water resources with resulting major impacts on many of the waterbodies across Wales and the UK as a whole. For the purposes of taking a holistic approach to management of water resources and to address the pressures on the water environment, under the Water Framework Directive (WFD) and its associated Regulations, the UK has been divided into a series of River Basin Districts (RBD). The purpose of these RBDs is to allow a strategic approach to be taken to preventing the deterioration of all water bodies (marine/coastal, ground, surface waters etc), and provide a mechanism to improve and enhance their status over time. The regulations include objectives to reduce pollution of water, to lessen the effects of floods and droughts, and improve the chemical, biological and ecological status of water bodies. Under the standards set by the WFD Regulations, 40% of all Wales' surface water bodies in 2021 were at good or better ecological status (in comparison to 31% in 2009).</p> <p>Within the Neath Port Talbot area there are 29 river waterbodies with the following overall quality status' :</p> <ul style="list-style-type: none"> • High - 0 • Good - 15 • Moderate - 12 • Poor - 2 • Bad – 0 	<p>Physical modification is one of the Significant Water Management Issues identified in the third cycle RBMP. Physical modification of natural flows, physical forms and processes (hydromorphology) has a significant impact on reducing freshwater and coastal ecosystem resilience, particularly resilience to climate change. Traditional or historic FRM engineering such as hard bank protection or reinforcement, lowering of riverbeds, culverts and channel straightening are types of physical modification that can have a significant adverse impact on freshwater and coastal ecosystem resilience, particularly resilience to climate change. The WFD Regulations require surface waters to be managed to protect their hydrology and geomorphology ('hydromorphology') and ecology. To achieve good ecological status or potential, there is a need to avoid, minimise (reduce) or mitigate physical modification impacts including those associated with flood risk management. The LFRMSP should seek to implement and maximise opportunities to improve waterbody status through the suite of measures and options proposed.</p> <p>Pollution prevention should also be sought during construction through robust construction management plans and pollution prevention plans.</p> <p>The LFRMSP should ensure that no Flood Measure or Option proposed will be detrimental to the aims and objectives of the Water Framework Directive. The use of SuDS and Green Infrastructure should be one mechanism of protecting and enhancing the water resources of the area.</p>	<p>To protect and enhance the quantity and quality of surface, groundwater, estuarine and coastal waterbodies in line with the requirements of the WFD, and to maximise the sustainable management of water resources.</p>



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>There is one lake waterbody within the plan area which has an overall waterbody quality status of moderate.</p> <p>There are 53 surface water Drinking Water Protected Areas (DrWPA), 22 of which are at risk.</p> <p>There are 25 groundwater DrWPA, 4 of which are at risk.</p> <p>The plan area falls within the Western Wales RBD which has 105 bathing water protected areas, 100% of which are compliant with the RBMP objective.</p> <p>Likely evolution of the baseline</p> <p>Maintained and improving - Surface and ground water quality is predicted to increase through legislation such as WFD and the Environment Act, though significant challenges remain as noted in the River Basin Management Plans.</p>		
<p>Air and Noise</p> <p>Air pollution impacts on public health, the natural environment and the economy.</p> <p>Air quality has improved in the UK over the last sixty years as a result of the switch from coal to gas and electricity for heating of domestic and industrial premises, stricter controls on industrial emissions, higher standards for the composition of fuel and tighter regulations on emissions from motor vehicles.</p> <p>Poor air quality is generally associated with urban/industrial areas and major road infrastructure and this is reflected in the typical location for Air Quality Management Areas (AQMA), many of which have been designated due to high NO2 and PM10 levels. Neath Port Talbot AQMA is located within the plan area , covering the majority of land and properties between the Corus Steel Works and the M4</p>	<p>The LFRMSP should, where possible, encourage flood protection measures which do not result in air emissions – i.e. they should be passive Options, with no pumping, etc requirements.</p> <p>The project should meet Government targets for air quality and noise and be reflective of appropriate legislation and should consider ecological receptors alongside human receptors.</p> <p>There is also potential for the LFRMSP to mitigate any increases in air pollutants as a result of the options and improve air quality in the region.</p>	<p>To reduce and minimise air and noise emissions</p>



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>Motorway in Taibach and Margam. It is declared for Particulate Matter PM10.</p> <p>As of 2017, there are 23 Noise Action Plan Priority / Proximity Areas (Road) within the plan area. The Noise and Soundscape Action Plan 2018-2023 was produced for three agglomerations in Wales. The number of people whose homes are exposed to noise levels above 55 Db for Lden (24-hour period) from major roads, railways and industry, in the Swansea and Neath Port Talbot agglomeration was approximately 46,800.</p>		
<p>Greenhouse Gas Emissions</p> <p>In March 2021 Senedd Cymru approved a net zero target for 2050 for Wales. Wales also has interim targets for 2030 and 2040, and a series of 5-year carbon budgets. As of 2021, Neath Port Talbot local authority area's total territorial greenhouse gas emission estimate was 7,115.4 ktCO₂e and Neath Port Talbot is noted as being among the areas of highest greenhouse gas emissions in the UK, though this is due to the presence of a significant steel works and other manufacturing plants. It is noted that plans for decarbonisation of the steel works are in place.</p> <p>Likely evolution of the baseline</p> <p>In Wales, total greenhouse gas emissions increased by 7% between 2020 and 2021. However, between 1990 and 2021, there has been a decrease of 35%. It is anticipated Carbon and other GHG emissions will continue to be emitted, however regulations and government legislation and</p>	<p>The LFRMSP has an objective to address flood risk, accounting for impacts from a changing climate.</p> <p>As such, the LFRMSP should where possible encourage flood protection measures which do not have the potential to require carbon emissions – i.e. they should be passive, with no pumping etc requirements. The issue of embedded carbon to be considered in the design.</p> <p>The LFRMSP should also ensure that opportunities are taken for maximising tree and hedgerow planting in appropriate areas (recognising other environmental issues such as need to protect soils etc.). Amongst other benefits, such flood protection, biodiversity enhancement and recreation, careful tree species selection can contribute to carbon sequestration by absorbing increased amounts of CO₂ from the atmosphere. Similarly, other elements of NFM should be considered e.g. protecting or reinstating peatlands will help ensure carbon is sequestered (as well as have other benefits relating to water quality and biodiversity). This would be in keeping with elements of Neath Port Talbot Council's aims in relation to creation and sustainable management of Green Infrastructure (GI) and wider ecosystems to sequester carbon, address pollution and flood alleviation and provide wider benefits such as health and well-being.</p>	<p>Contribute to the national (UK) target of Net Zero by 2050</p>



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>incentives will continue to promote the reduction in emissions through national commitments to net zero by 2050.</p> <p>Interventions at the national, regional and local levels have started to reduce the rate of greenhouse gas emissions. However, the underlying trend points towards a slowing of emissions rather than reversal of trends.</p>		
<p>Climate Factors</p> <p>Current observations indicate that the UK is continuing to warm and be subject to a changing climate, with an increased likelihood of and significant risk from extreme weather events.</p> <p>Average mean rainfall in Wales has increased by 2% from the mid-1970's to the mid-2010s. UK wide sea level has risen by around 1.4mm per year since 1901 (16cm to date). The changes in climate that we are already experiencing are projected to continue and intensify. While climate change is a global phenomenon and the amount of change is closely linked to global actions, significant measures can be taken at a local level to help address wider issues.</p> <p>Neath Port Talbot contains 3 flood risk areas out of the 33 identified by Natural Resources Wales (NRW). Flood zones 2 and 3 are located within the plan area, the largest surrounding the River Neath, River Afan / Ffwrdd Wyllt and River Kenfig. Records show 430 properties in Neath Port Talbot have suffered from internal flooding from surface water and ordinary watercourses at various locations around the county borough. It is to be noted that Neath Port Talbot has steep, rapidly responding catchments which makes the area particularly vulnerable to high intensity storm events.</p>	<p>Within Wales, climate change risks have been identified in respect of increased severity and frequency of flooding, with damage to homes, businesses, infrastructure and communities. The objective of the LFRMSP is to reduce the risk of flooding and economic damage that flooding causes, in a sustainable manner. It is also the intention that any flood management activities carried out will aim to enhance the built environment.</p> <p>The LFRMSP should build on existing and developing approaches to flood risk management and promote the use of a wide range of measures to manage risk. Risk should be managed in a co-ordinated way within catchments and balance the needs of communities, the economy and the environment. A particular focus should be placed on nature based solutions and Natural Flood Management (NFM) to flooding as this will be in line with national and local commitments to net zero and to help achieve this through a reduction in the amount of concrete and steel used in flood defences, as well as the requirement for pumping.</p> <p>The LFRMSP should ensure that emergency plans and responses to flood incidents are effective and that communities are able to respond effectively to flood forecasts, warnings and advice; help communities to recover more quickly and effectively after incidents.</p> <p>The LFRMSP should recognise the fact of a changing climate and seek to ensure that existing and future flood measures are resilient. As well as helping to increase resilience, use of NFM can help other biodiversity objectives such as habitat creation, planting of native trees, protection of soils, peatlands, wetlands etc.</p>	<p>To reduce vulnerability of built infrastructure and ensure resilience and adaptation to climate change risks and hazards</p>



Likely evolution of the baseline

The climate is expected to continue to change with annual average temperatures projected to increase, particularly in summer. Winters are projected to be wetter and summers drier. It is anticipated that Wales is likely to experience summer mean temperature increases of 1.1°C by the 2050's and 2.3°C by the 2080's. The projected increases

in winter average rainfalls in Wales are 5% by the 2050s, 13% by the 2080s. Climate change is projected to result in more extreme weather events, potentially causing or exacerbating periods of drought which alongside population and economic growth will impact water availability. Extreme weather is also anticipated to result in greater flood risk – note that in Wales it has been identified that while groundwater flooding has not been a major issue due to ground conditions, this could change at a local level due to climate change.

Out of the communities within South West Wales Place (as defined by NRW), climate change by 2120 projects the below communities to experience the biggest change in danger from the risk of flooding from the sea are:

- Briton Ferry (NPTCBC)
- Llanelli
- Neath (NPTCBC)
- Port Talbot (NPTCBC)
- Swansea

The five communities in South West Wales that are projected to experience the biggest change in danger from the risk of flooding from rivers are:

- Llanelli

Measures within the LFRMSP can help to manage flood risk and increase resilience by ensuring development does not take place in inappropriate areas such as floodplains. Measures associated with preparing for and recovering from flooding will also contribute to resilience – this could include providing information and warnings of flood events and does not necessarily require the construction of new or upgrading of existing defences.

Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<ul style="list-style-type: none"> Margam (NPTCBC) Morfa Glas (NPTCBC) Neath (NPTCBC) Port Talbot (NPTCBC) 	<p>There is potential for the measures within the LFRMSP to have an impact on the landscape. This could include temporary construction effects and permanent effects associated with infrastructure which could affect visual amenity or the character of the area.</p> <p>The LFRMSP should seek to preserve and enhance the character of the Neath Port Talbot landscape by ensuring that its integrity and valuable natural open space is not lost.</p> <p>The LFRMSP should also aim to ensure that sensitive areas are avoided and respect particular landscape settings, with consideration made of design quality in both an urban or rural or sea setting. It is to be noted that views from adjacent areas should be considered.</p> <p>Opportunities for landscape enhancement should be explored, e.g. through sympathetic design and enhancements to existing landscape improvement areas, or through new planting opportunities. These could be undertaken as part of development of Green Infrastructure.</p> <p>Where the LFRMSP would result in physical development within a Conservation Area or similar area for which a character appraisal has been undertaken, the design of the scheme should take account of relevant guidance for the Conservation Area / character area.</p>	<p>To conserve, protect and enhance landscape, townscape and seascape character and visual amenity</p>
<p>Landscape</p> <p>Neath Port Talbot has a varied landscape and a number of distinctive habitats ranging from coastal salt marsh and sand dunes through to ancient woodlands and upland areas of purple moor grass. Some of these habitats are of European, National or local importance. Large areas of the County Borough contain conifer plantations and the area also contains important geological features including glaciated valleys and rock formations.</p> <p>While no National Landscapes (formerly AONB) have been identified in the plan area, the Brecon Beacons National Park is located adjacent to the north east of the plan area. Two of the 28 NLCAs intersect the plan area :</p> <ul style="list-style-type: none"> South Wales Valleys Swansea Bay <p>One of the 29 National Marine Character Areas intersects the plan area :</p> <ul style="list-style-type: none"> Swansea Bay and Porthcawl 		
<p>Likely evolution of the baseline</p> <p>Stable - Many of the region's most exceptional landscape and townscapes benefit from protection through designations that will persist in the absence of the LFRMSP. In general terms, modern design / landscaping principles and</p>		



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>interested parties expectations are promoting a renewed focus on the quality of scheme design and this trend is likely to continue, though risks from increased urbanisation and infrastructure development remain.</p>		
<p>Cultural Heritage</p> <p>Neath Port Talbot has a wealth of historical, archaeological and architectural assets, in particular relating to the area's industrial history in coal, iron, steel and copper. It also has many older archaeological remains dating back to pre-Roman times. All of these are important characteristics of the area that provide local distinctiveness. Many, such as Margam Park and the canal network, also provide opportunities for tourism and recreation.</p> <p>No World Heritage Sites have been identified in the plan area, though, there are approximately 86 Scheduled Monuments, six conservation areas and one Roman road. Across the plan area there are approximately 398 listed buildings as follows:</p> <ul style="list-style-type: none"> • 7 Grade I • 354 Grade II • 37 Grade II* <p>There are approximately 65 sites within the plan area (21 Agricultural, 9 Industrial, 23 Non- Agricultural, 9 Other Built Environment, 3 Settlement) on note for the historic environment. Three historic landscapes have also been identified:</p> <ul style="list-style-type: none"> • Margam Mountain • Merthyr Mawr, Kenfig & Margam Burrows • The Rhondda 	<p>The LFRMSP should aim to protect and preserve designated and non-designated heritage assets and their contexts and settings. Reducing the risk of flooding would provide benefits to the heritage of the area through protecting known assets.</p> <p>The measures within the LFRMSP have the potential to directly or indirect impact the historic environment through effecting the asset's fabric or setting. It is to be noted that some heritage features can be affected by changes to hydrological conditions.</p> <p>The setting of heritage assets is also of importance - Infrastructure should be sensitively designed to be sympathetic to existing character and quality and opportunities for improving settings should be examined.</p> <p>Where implementation of the LFRMSP would involve physical development that could affect previously undiscovered archaeological assets the design of the proposed scheme and site selection should be informed by early investigation of the potential archaeological interest of the affected land. This can have the beneficial effect of increasing knowledge of the heritage of the area.</p>	<p>To conserve, protect, sustainably manage and enhance the historic environment and assets, including archaeology</p>



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>There are also substantial numbers of undesignated heritage features and it is known that the Welsh valleys have always been important areas for human habitation - it is important to note that the nature of cultural heritage features means that not all are known at present; in particular, buried archaeological remains. The significance of this area in terms of heritage indicates that such buried remains are likely.</p> <p>Likely evolution of the baseline</p> <p>Stable / Declining – across the UK it is widely recognised that heritage assets continue to be at risk. While designated heritage assets benefit from protection that will continue without the LFRMSP, there is a risk of uncoordinated and piecemeal development resulting in the successive erosion of the quantum and integrity of the region’s cultural heritage resource. There is a potential risk on the setting of heritage assets from development of schemes within the LFRMSP.</p>		
<p>Population and Human Health</p> <p>Neath Port Talbot has a population of approximately 142,158. As of March 2021, Neath Port Talbot had a population density of 323 persons per square kilometre . The more densely populated areas are in settlements towards the south coast in Port Talbot, Britton Ferry, Neath, Skewen, as well as settlements further North in Pontardawe and Glynneath. As of December 2023, Neath Port Talbot had an unemployment rate of 3.4% for ages 16+</p> <p>Within the plan area, the most deprived Lower Layer Super Output Areas (LSOA) with decile scores of 10 are as follows:</p> <ul style="list-style-type: none"> • Aberavon 1 	<p>The options within the LFRMSP have the potential to result in temporary disturbance effects during the construction phase and disturbance effects for the local community must be prevented.</p> <p>The LFRMSP should also ensure that the potential for flooding to cause stress / mental health issues or more direct physical danger is reduced / mitigated as much as possible.</p> <p>There is also potential for impacts on the water or natural environment which could have impacts on recreation and wellbeing. The LFRMSP should aim to protect public health and promote wellbeing.</p> <p>There is an opportunity for the LFRMSP to engage with the local community and maximise opportunities for recreation through enhancing access and the condition of the water environment, greenspaces or areas of the natural</p>	<p>To maintain and enhance the health, economic and social wellbeing of the local community and support attractive, resilient and viable communities.</p>



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<ul style="list-style-type: none"> • Bryn and Cwmavon 2 • Llansamlet 2 • Gwaun-Cae-Gurwen 1 • Baglan 2 <p>Neath Port Talbot has a profile of health largely worse than the average for Wales. The majority of small areas in Neath Port Talbot are more deprived than the average for Wales however, there are some pockets of relative low deprivation. There is a growing older population that will have an impact on demand for health services in the future. Access to areas which could benefit health and wellbeing include walking and cycling routes, as well as two country parks at Afan Argoed and Margam Park.</p> <p>In 2021, 45.9% of Neath Port Talbot residents described their health as "very good", increasing from 44.7% in 2011. Those describing their health as "good" rose from 28.5% to 30.5%. These are age-standardised proportions. The proportion of Neath Port Talbot residents describing their health as "very bad" decreased from 2.6% to 2.1%, while those describing their health as "bad" fell from 7.9% to 6.4%</p> <p>Potential measures within the Study Area have the potential to result in temporary disturbance effects during the construction phase. There is also potential for impacts on the water or natural environment which could have impacts on recreation and wellbeing.</p> <p>Likely evolution of the baseline</p> <p>Stable / Uncertain – while population levels are likely to continue to rise, there is uncertainty over migration levels due to a lack of clarity on wider issues such as economic performance and global events. Population profiles are also</p>	<p>environment. Thus, improving the inclusivity of and connection to the local natural environment.</p> <p>The LFRMSP should ensure that any flood protection measure does not favour or disadvantage any particular group of the population or any particular ward / neighbourhood.</p> <p>It is notable that the Environment Strategy for Wales indicates that in order to deliver high quality places for people to live, a high quality built environment is required, with opportunities to access green space and biodiversity, where environmental nuisances are minimised and where food risk is understood and managed. The LFRSMP needs to be aligned with this ambition.</p>	



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
<p>likely to continue to get older – this will likely result in changes to overall health outcomes with an increased number of long-term conditions.</p> <p>Neath Port Talbot has a worse life expectancy compared with Wales for both males and females. Education and unemployment, key determinants of individual health, are significantly worse than Wales as is alcohol consumption, premature death from heart disease and suicide.</p>		
<p>Material Assets</p> <p>Within the LFRMSP area there are significant areas of built infrastructure / assets, ranging from individual properties / assets to larger urban settlements, with associated transport, services and utility infrastructure. Key urban areas include the areas of Port Talbot and Neath, Briton Ferry and Pontardawe with infrastructure of note including the M4 corridor, rail lines, Port Talbot docks, the Steel plant and various other industrial and commercial facilities. Educational and health facilities are as would be expected, with a range of provision made for different age groups and include elements of University campuses and hospital facilities. Modern settlement and associated infrastructure is typically reflective of past industrial heritage and located along the coastal strip and within valleys.</p> <p>Flood risk assets include earth embankments, walls, inlets, outlets, hydrometric stations, pumping stations. Properties that benefit from these assets are not removed from risk entirely because flood defences do not remove the chance of flooding as they can be overtopped or fail, but the risk is significantly reduced.</p>	<p>The LFRMSP should seek to reduce consumption of resources in any flood protection measure such as construction materials e.g. through encouraging the use of recycled or secondary materials. This will also reduce the need to transport these materials and transport the waste by-products. Reducing material use / using low carbon material will also help meet any commitment to Net Zero – at present the typical use of concrete and steel in flood defences results in substantial embedded carbon.</p> <p>Ensure that the LFRMSP does not promote measures which may impact on public transport. Consideration should be given to enhancing flood protection measures which will allow sustainable modes of transport such as walking / cycling and therefore help reduce congestion and promote healthy lifestyles. These could also utilise any PROW.</p> <p>The LFRMSP should ensure that public transport routes are protected from extreme weather events, including flooding.</p> <p>Sustainable procurement of materials, construction and waste management practices, taking into account the whole lifecycle of products from purchase to disposal, will help to promote the efficient use of resources and reduce waste.</p> <p>There are also opportunities relating to improving resilience to flooding (see above) which may reduce the need for material use e.g. by providing information / communication to communities on flood risk.</p>	<p>To minimise resource use and waste production</p> <p>To avoid negative effects on and / or protect and / or promote the sustainable management and resilience of built assets / infrastructure</p>



Key Environmental Issue	Implications / Opportunities for NPT LFRMSP	SEA Objective
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Likely evolution of the baseline

Regeneration and future investment and demand are likely to increase the number and quality of material assets such as housing, transport infrastructure, waste facilities, and community facilities.



5. SEA Framework

5.1 Introduction

Following good practice, a number of bespoke SEA objectives were developed for the project. These SEA objectives reflect the environmental sustainability objectives the project should be aiming to achieve and the areas that the project is expected to impact upon or have an influence on. The expectation was that even though some objectives may not be within the project direct remit, it should be able to influence the direction of change through setting out clear policies and approaches which could inform the work of projects partners and other stakeholders.

5.2 Assessment framework

The SEA Framework is a key component in completing the SEA, through providing a set of SEA objectives against which the performance of the project can be predicted and evaluated.

An SEA Framework of 13 objectives and associated decision-making / assessment aid questions (see Table 5-1) was drawn up for the assessment of the project, developed through the analysis of baseline information and identification of key environmental sustainability issues and opportunities, as well as the review of relevant plans, policies and legislation.

In order to assess how each aspect of the project performs against each of the SEA objectives, a series of decision-making criteria / assessment aid questions were also developed. The decision-making criteria are a way of guiding the assessment. They are not the only considerations to be taken into account when determining likely effects arising from the project, as it is unlikely that every relevant question can be known at this stage. Nevertheless, they do provide a useful starting point and a transparent structure to help demonstrate how the assessment of the effects arising from the implementation of the project will be undertaken. As the SEA progresses, they will also help in the development of a set of indicators to be included in the monitoring programme at a later stage of the assessment process.

It should be noted that, from an assessment perspective, all SEA objectives are considered equally important to be achieved by the project and that there is no inherent prioritisation of objectives. The ultimate aim is for the project to achieve net sustainability benefits.

It is also to be noted that there is a certain degree of cross-over of Decision Aid Questions within the SEA Framework i.e. the same question may be asked across a number of Objectives. The rationale for this is that while the question may be the same, it is considered from a differing viewpoint and within a different context. This is the role of the Decision Aid Questions i.e. to help consider all aspects of an Objective in arriving at an assessment of the performance.



Table 5-1 - SEA Framework

SEA Topic	SEA Objective	Decision Aid Questions
Biodiversity	To protect and enhance biodiversity, priority species, vulnerable habitats, habitat connectivity and resilience with the capacity to adapt to change, and achieve Net Benefit for Biodiversity	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Protect and enhance the conservation status of designated sites and their qualifying features (MCZs, MPAs, SSSIs, National Nature Reserves, Local Nature Reserves and Ancient Woodland)? • Affect directly or indirectly a priority habitat or species on the priority habitat inventory? • Protect and enhance priority habitats and species, including surface and ground water-dependent habitats and species? • Affect the marine environment, habitats and species (including MCZs and MPAs)? • Contribute to the loss or gain in habitat connectivity at local, regional and national scale? • Create or restore habitat delivering a Net Benefit for biodiversity? • Avoid the possibility for INNS to be spread/ introduced? • Create an opportunity to improve biodiversity value through removal of INNS?
	Protect and enhance areas designated under the Habitats Regulations	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Protect (directly or indirectly) European and International sites identified as part of the HRA screening process? • Take on board the HRA findings and recommendations?
Soil	To protect and enhance geology, the functionality, quantity and quality of soils as a resource, and to support sustainable use of land for multiple benefits.	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Affect high grade agricultural land? • Promote the efficient use of land? • Prevent soil erosion and retain soil stocks as a natural resource? • Involve use of brownfield or greenfield land? • Prevent mineral sterilisation? • Result in soil contamination or involve soil remediation? • Affect SSSIs of geological importance?
Water	To protect and enhance the quantity and quality of surface, groundwater,	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Affect surface water quality or quantity?



	estuarine and coastal waterbodies in line with the requirements of the WFD, and to maximise the sustainable management of water resources.	<ul style="list-style-type: none"> • Affect groundwater quality or quantity? • Affect estuarine or coastal water quality or quantity? • Affect bathing waters? • Affect shellfish water protected areas? • Reduce the flashy nature of surface waters? • Slow the flow in upper catchments and reduce soil losses to river systems? • Support achievement of environmental objectives set out in River Basin Management Plans and Shoreline Management Plans? • Protect and enhance the environmental resilience of the water environment to climate change? • Contribute to the achievement of WFD objectives?
Air and Noise	To reduce and minimise air and noise emissions	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Minimise air emissions (pollutants and noise) that affect human health and biodiversity? • Affect an existing air quality management area (AQMA) or lead to the creation of a new one? • Promote enhancements to green infrastructure networks to help improve air quality?
Greenhouse Emissions	Gas Contribute to the national (UK) target of Net Zero by 2050	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Reduce direct and indirect emissions of all greenhouse gases, including carbon dioxide, during construction, operation and decommissioning of Options? • Use negative carbon emissions technologies to offset residual emissions such Nature Based Solutions? • Create new carbon sinks/removals through natural sequestration including that provided by green infrastructure and soils which contribute to carbon sequestration?
Climate Factors	To reduce vulnerability of built infrastructure and ensure resilience and adaption to climate change risks and hazards	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Protect areas likely to be affected by flooding? • Allow protection of people, businesses and infrastructure from flooding during extreme weather? • Protect from flooding in existing developed areas - including homes, businesses and areas of critical infrastructure? • Manage the risks associated with heatwaves and wildfires over the lifetime of the infrastructure? • Manage the risks of flooding and erosion, particularly through working with nature-based solutions?



	To reduce or manage flood risk by limiting the causes and effects of climate change	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Protect development in flood risk areas (whether existing or future) when possible? • Lead to infrastructure development that is flood resilient over its lifetime, considering the effects of climate change, without increasing the flood risk elsewhere and identifying opportunities to reduce the risk overall? • Protect overland flow paths?
Landscape	To conserve, protect and enhance landscape, townscape and seascape character and visual amenity	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Protect and enhance designated landscapes and features? • Affect the character of the landscape, townscape or seascape, including tranquillity and views? • Protect conservation areas or historic landscape/townscape areas? • Minimise noise and light pollution from construction on residential amenity and on sensitive locations, receptors and views? • Improve access to the countryside? • Create or improve green infrastructure which contributes to access to the landscape?
Cultural Heritage	To conserve, protect, sustainably manage and enhance the historic environment and assets, including archaeology	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Protect designated historic assets, sites and features? • Protect heritage assets at risk? • Protect historic assets and their settings? • Protect important archaeology (including unknown archaeology)? • Alter the hydrological conditions of water-dependent heritage assets, including organic remains?
Population and Human Health	To maintain and enhance the health, economic and social wellbeing of the local community and support attractive, resilient and viable communities	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Lead to significant social impacts? • Allow for green economic development? • Protect and enhance green infrastructure, a network of linked, multifunctional green spaces in and around the area's towns and cities, thus creating new or improved public green space? • Provide employment opportunities and economic diversity? • Minimise disturbance from noise, light, visual, and transport due to construction activities? • Minimise disturbance to active travel (pedestrian and cycle routes, Public Rights of Way) during construction and operational activities?



		<ul style="list-style-type: none"> • Contribute to improvements of public realm and levels of natural surveillance to create a more welcoming environment for travel, physical activity, and accessing key facilities? • Allow the development of Options that will protect the health and well-being of the wider population (residents, workers, commuters, tourists and visitors)? • Decrease the proportion of the population at risk from flooding? • Allow protection of people, businesses and infrastructure from flooding during extreme weather?
Material Assets	To minimise resource use and waste production	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Minimise the use of materials, energy and resources? • Promote water efficiency and encourage a reduction in water consumption? • Minimise the production of waste? • Promote sustainable waste management practices in line with the waste hierarchy? • Encourage the use of recycled and / or secondary materials? • Promote the use of low carbon materials and technologies? • Promote the use of local suppliers that use sustainably-sourced and locally produced materials?
	To avoid negative effects on and / or protect and / or promote the sustainable management and resilience of built assets / infrastructure	<p>Will the Neath Port Talbot Strategy:</p> <ul style="list-style-type: none"> • Reuse existing infrastructure? • Affect (including protect) major built assets and infrastructure?



6. Assessment of reasonable alternatives

6.1 Introduction

The Environmental Assessment of Plans and Programmes Regulations 2004 (“the SEA Regulations”) require that when an environmental report on a proposed plan or programme is prepared, it must identify, describe and evaluate the likely significant effects of implementing reasonable alternatives to the plan or programme which it assesses, as well as the likely significant effects of the plan or programme itself. Note is made that the SEA should provide detail on:

‘reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme’ and give ‘an outline of the reasons for selecting the alternatives dealt with’ (Article 5.1 and Annex I (h)).

It is normal practice when developing a plan or strategy to propose different ways (options) of fulfilling its objectives. In this instance, the Flood and Water Management Act 2010 requires all 22 Lead Local Flood Authorities (LLFAs) in Wales to produce Flood Risk Management Strategies (Local Strategy). It is also the case that the approach adopted in the formulation of the LFRMSP must respond to the key objectives, high level principles and measures set out in the Welsh Government’s National Strategy for Flood and Coastal Erosion Risk Management (FCERM), which sets out the legislative context to FCERM activities in Wales.

It is also the case that the National Strategy begins to set out the issues which a Flood Plan must consider. For example, it explains that, as the climate changes, it can be expected that flood risks are likely to increase with more frequent and severe floods, rising sea levels and faster rates of erosion of the coast. Similarly, the Well-being of Future Generations (Wales) Act 2015 and Planning (Wales) Act 2015 encourage partnership working, collaboration and a long-term approach, while the Environment (Wales) Act 2016 introduced the sustainable management of natural resources approach and duties to enhance biodiversity, reduce carbon emissions, promote natural measures and catchment approaches.

In addition, it is important to note that the LFRMSP is not starting from a ‘blank sheet of paper’. The first Local Strategy was developed in 2014 and set out the overarching approach to managing local flood risk. Alongside the Local Strategy, a Flood Risk Management Plan (FRMP) was adopted in 2015. The FRMP developed the objectives, measures and actions outlined in the Local Strategy into a more detailed plan for managing flooding in Neath Port Talbot. It is now the intention that the LFRMSP will integrate the two previous documents into one, i.e. the Plan and the Strategy. It is the intention that this reduces complexity, duplication, and will enable NPTCBC to communicate and manage local flood risk more effectively. It is the intention that the LFRMSP will work alongside other strategic plans for shoreline management, infrastructure and planning to set out the direction NPTCBC want to take.

As such, these requirements leave little flexibility to develop ‘real’ strategic options for the LFRMSP as the overall strategy has already been defined nationally and this local Strategy Plan builds upon previous work in a local context. In reality, the LFRMSP is a case of pursuing a series of alternative measures in parallel with the national measures. Some of these will be pursued to a greater extent, others to a lesser extent, depending on local priorities for each of the identified LFRMSP objectives.

6.2 Consideration of Alternatives

In line with the approach taken at a national level, consideration was made of the following alternatives:

- Do Nothing – this is not considered as a reasonable alternative as the Flood and Water Management Act 2010 requires that the Strategy specifies how and when it will be reviewed



- Continue with the existing approach to flood management in Neath Port Talbot.
- A new Plan and Strategy prepared in light of legislation which has been enacted since development of the previous Plan and Strategy

As noted, the new LFRMSP builds upon the previous Plan and Strategy. As such many elements will be similar across both. This is anticipated to result in many effects on the environment being similar. Nevertheless, there are a few key areas where differences are identifiable. These are as follows:

- Making evidence more accessible to promote transparent, evidence-based decisions
- Better inform communities and influence behaviours.
- Promotion of collaborative working between RMA's and key stakeholders.
- Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement
- Improvements to preparation, response and recovery performance

In this high level overview of alternatives, the following scale has been used:

	Implementation of the LFRMSP is anticipated to have a negative effect in comparison to existing approach
	Implementation of the LFRMSP may have a beneficial or adverse effect in comparison to existing approach, depending upon implementation
	Implementation of the LFRMSP is anticipated to have a beneficial effect in comparison to existing approach
N/A	Not applicable or not relevant
Neutral	No effect over and above the current approach has been identified / is anticipated

Table 6-1 - Consideration of LFRMSP against current approaches

	Key new elements of approach in LFRMSP				
SEA Objective	Making evidence more accessible to promote transparent, evidence-based decisions	Better inform communities and influence behaviours.	Promotion of collaborative working between RMA's and key stakeholders.	Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement	Improvements to preparation, response and recovery performance
To protect and enhance biodiversity, priority species, vulnerable habitats, habitat connectivity and resilience with the capacity to adapt to change, and achieve Net Benefit for Biodiversity	No additional effect identified over and above current approach.	Measures to better inform and influence behaviours could make people more aware of where risk lies, with a beneficial effect for biodiversity. For example, a better awareness of risk posed by / to fuel stores could avoid pollution in the event of a flood.	The incorporation of specific Measures to ensure better collaboration with other stakeholders could potentially allow for beneficial effects through recovery to take place quicker, or helping to avoid effects in the first place.	The incorporation of specific Measures to ensure NFM, NBS as well as general environmental and biodiversity enhancement mean that the new approach will provide opportunities for protection and enhancement of biodiversity, priority species etc as well as net benefit to biodiversity. There is a potential for significant beneficial effects in this approach.	The incorporation of specific Measures to ensure better preparation, response and recovery performance could potentially benefit biodiversity by helping to avoid pollution on sensitive areas, or by cleaning pollution more quickly / effectively. This could include for example, the removal of invasive species.
Protect and enhance areas designated under the Habitats Regulations	No additional effect identified over and above current approach – the need to protect such designated sites was a requirement in place	Measures to better inform and influence behaviours could make people more aware of where risk lies, with a beneficial effect for biodiversity. For example,	The incorporation of specific Measures to ensure better collaboration with other stakeholders could potentially allow for	The incorporation of specific Measures to ensure NFM, NBS as well as general environmental and biodiversity enhancement mean that	The incorporation of specific Measures to ensure better preparation, response and recovery performance could potentially benefit



Key new elements of approach in LFRMSP

SEA Objective	Making evidence more accessible to promote transparent, evidence-based decisions	Better inform communities and influence behaviours.	Promotion of collaborative working between RMA's and key stakeholders.	Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement	Improvements to preparation, response and recovery performance
	during development of last Plan and Strategy.	a better awareness of risk posed by / to fuel stores could avoid pollution in the event of a flood. This could have indirect beneficial effects on sites designated for nature conservation.	beneficial effects through for example helping recovery to take place quicker, or helping to avoid effects in the first place.	the new approach will provide opportunities for protection and enhancement of biodiversity, priority species etc as well as net benefit to biodiversity. There is a potential for significant beneficial effects in this approach, though note such effects are likely to be indirect in respect of designated sites.	biodiversity by helping to avoid pollution on sensitive areas, or by cleaning pollution more quickly / effectively. This could include for example, the removal of invasive species.
To protect and enhance geology, the functionality, quantity and quality of soils as a resource, and to support sustainable use of land for multiple benefits.	No additional effect identified over and above current approach.	Measures to better inform and influence behaviours could make people more aware of where risk lies, with a beneficial effect for soils. For example, a better awareness of risk posed by / to fuel stores could avoid pollution in the event of a flood. Preventative measures	The incorporation of specific Measures to ensure better collaboration with other stakeholders could potentially allow for beneficial effects through for example helping recovery to take place quicker, or helping to	The incorporation of specific Measures to ensure NFM, NBS as well as general environmental and biodiversity enhancement mean that the new approach will provide opportunities for protection and enhancement of soils.	The incorporation of specific Measures to ensure better preparation, response and recovery performance could potentially benefit soils by helping to avoid pollution, or by cleaning pollution more quickly / effectively. This could include for example, the removal of



Key new elements of approach in LFRMSP

SEA Objective	Making evidence more accessible to promote transparent, evidence-based decisions	Better communities and influence behaviours.	Promotion of collaborative working between RMA's and key stakeholders.	Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement	Improvements to preparation, response and recovery performance
To protect and enhance the quantity and quality of surface, groundwater, estuarine and coastal waterbodies in line with the requirements of the WFD, and to maximise the sustainable management of water resources.	No additional effect identified over and above current approach.	Timely flood warnings could provide people opportunities to prepare for floods and this could include the removal from harm items that could lead to a water pollution event such as fuel tanks, vehicles etc.	The incorporation of specific Measures to ensure better collaboration with other stakeholders could potentially allow for beneficial effects through sharing of knowledge and equipment to deal with threat to water quality, or to aid recovery. This would also allow better understanding of the range of risks identified in RBMP and how best to address these to allow watercourses to meet water quality objectives.	The incorporation of specific Measures to ensure NFM, NBS as well as general environmental and biodiversity enhancement mean that the new approach will provide opportunities for protection and enhancement of the water environment. This could also include measures such as introduction of SuDS.	invasive species or removal of detritus or contamination from areas of high quality soil. Enhanced preparation and response, leading to better recovery performance will act to help protect and improve the water environment – any pollution events can be prevented in the first place or addressed more efficiently, with ultimately better outcomes



Key new elements of approach in LFRMSP

SEA Objective	Making evidence more accessible to promote transparent, evidence-based decisions	Better inform communities and influence behaviours.	Promotion of collaborative working between RMA's and key stakeholders.	Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement	Improvements to preparation, response and recovery performance
To reduce and minimise air and noise emissions	No additional effect identified over and above current approach.	Timely flood warnings could provide people opportunities to prepare for floods and this could reduce the extent of flooding or the damage it causes. This would lead to less requirement for post flood recovery and lessen the need for the use of generators, pumps, drying equipment, thereby reducing air and noise emissions.	No additional effect identified over and above current approach.	NFM and NBS may allow for less need for construction of hard engineered schemes. This could lead to less requirement for construction or maintenance activities with consequent less air and noise emissions. Similarly there may be less requirement for pumping or water treatment.	Better preparation could reduce the extent of floods or the damage caused, thereby reducing the need for post flood recovery. However, more efficient recovery performance may lead to quicker / greater air and noise emissions.
Contribute to the national (UK) target of Net Zero by 2050	No additional effect identified over and above current approach.	Timely flood warnings could provide people opportunities to prepare for floods and this could reduce the extent of flooding or the damage it causes. This would lead to less requirement for post flood recovery and lessen the need for the use of generators, pumps, drying	No additional effect identified over and above current approach.	NFM and NBS, as well as general environmental and biodiversity enhancements will involve planting. This would provide opportunities to sequester some carbon emissions and help to achieve Net Zero targets,	Better preparation could reduce the extent of floods or the damage caused, thereby reducing the need for post flood recovery. However, more efficient recovery performance may lead to quicker / greater carbon emissions.



Key new elements of approach in LFRMSP

SEA Objective	Making evidence more accessible to promote transparent, evidence-based decisions	Better communities and influence behaviours.	inform and	Promotion of collaborative working between RMA's and key stakeholders.	Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement	Improvements to preparation, response and recovery performance
		equipment, reducing emissions.	thereby carbon		though overall effects would likely be slight.	
To reduce vulnerability of built infrastructure and ensure resilience and adaption to climate change risks and hazards	No additional effect identified over and above current approach.	Vulnerability will be reduced through good communication to inform people of the increased risk and allow them to take measures to adapt to new risks and hazards. This would be beneficial both for individuals and their properties as well as across communities as a whole.		Strategic planning and sharing of information across organisations will allow for a much greater and more comprehensive understanding of where new risks may arise and how best to address these. This should increase resilience.	Nature based solutions are more likely to be resilient to a changing climate and place less reliance on built infrastructure.	Improvements to preparation, response and recovery performance would allow a more efficient and effective response to greater frequency and intensity of storm events that are anticipated with climate change. Resource sharing will help to ensure the best and latest equipment is available where it is needed to further reduce vulnerability and greater joint training will be invaluable to ensure emergency personnel are fully up to date with changing threats and the best response.



Key new elements of approach in LFRMSP

SEA Objective	Making evidence more accessible to promote transparent, evidence-based decisions	Better communities and influence behaviours.	Promotion of collaborative working between RMA's and key stakeholders.	Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement	Improvements to preparation, response and recovery performance
To reduce or manage flood risk by limiting the causes and effects of climate change	No additional effect identified over and above current approach.	No additional effect identified over and above current approach.	No additional effect identified over and above current approach.	Nature based solutions allow for opportunities for carbon sequestration, thereby reducing the causes of climate change. They also require less embedded carbon and are likely to require less carbon emissions in construction.	No additional effect identified over and above current approach.
To conserve, protect and enhance landscape, townscape and seascape character and visual amenity	No additional effect identified over and above current approach.	No additional effect identified over and above current approach.	No additional effect identified over and above current approach.	NFM, NBS, general environmental enhancement and a focus on biodiversity, would allow opportunities for enhancing landscapes, townscapes and general visual amenity by protecting from development those areas of importance to the management of water – it is anticipated this would frequently be upland areas or hillsides with high	Protection of property (and a quicker recovery) are likely to have beneficial effects in relation to landscape / townscape and overall visual amenity.



Key new elements of approach in LFRMSP

SEA Objective	Making evidence more accessible to promote transparent, evidence-based decisions	Better communities and influence behaviours.	Promotion of collaborative working between RMA's and key stakeholders.	Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement	Improvements to preparation, response and recovery performance
To conserve, protect, sustainably manage and enhance the historic environment and assets, including archaeology	No additional effect identified over and above current approach.	No additional effect identified over and above current approach.	Collaborative working with organisations concerned with the protection of cultural heritage assets will allow for a greater understanding of which assets are a priority for protection and how best to protect them and would also allow a better understanding of how flood risk might change.	landscape / visual prominence. NFM and NBS may allow opportunities to enhance the setting of individual heritage assets or wider heritage landscapes. A focus on natural hydrological processes could help to preserve those archaeological remains which are reliant on waterlogged conditions. A reduced need for 'hard engineered' infrastructure would reduce the potential for loss or damage to heritage assets.	Protection of property (and a quicker recovery) will also have beneficial effects in relation to heritage assets. Emergency response plans and effective early warning that allows emergency preventative action to protect sites or assets of heritage interest from floods can result in reduced damage. This will help to preserve the historic environment.
To maintain and enhance the health, economic and social wellbeing of the local community and	Making evidence more accessible to promote transparent, evidence based decisions will help local people to feel more	Effective communication significantly benefits flood-prone communities by enhancing preparedness and	Working with organisations involved in social care, as well as the emergency services can help to protect people's	NFM and NBS will allow for opportunities that would be of benefit to health and wellbeing – for example it may allow for	Improvements to response and recovery performance will reduce the effect of flooding on



Key new elements of approach in LFRMSP

SEA Objective	Making evidence more accessible to promote transparent, evidence-based decisions	Better communities and influence behaviours.	inform and collaborative working between RMA's and key stakeholders.	Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement	Improvements to preparation, and response and recovery performance
support attractive, resilient and viable communities	empowered in the decision making process. This can improve community resilience by keeping people informed of flood risk and the measures that are going to be taken to address this. It also provides an opportunity for intimate local knowledge to be brought into the decision making process.	ensuring timely responses. It increases awareness of risks and provides practical preparation steps, leading to better evacuation readiness and reduced property damage. Reliable information alleviates anxiety, while training in emergency skills enhances safety. Timely flood warnings enable safe evacuations, property protection, and psychological preparedness, reducing panic and fostering community resilience. Warning and informing residents about flooding is a vital component of disaster risk reduction.	physical and mental wellbeing, as well as increase the resilience of communities. It would also allow a greater understanding to be developed of the need to protect those more vulnerable members of the community.	the development or protection of green / open space.	people's physical and mental wellbeing.



Key new elements of approach in LFRMSP

SEA Objective	Making evidence more accessible to promote transparent, evidence-based decisions	Better inform communities and influence behaviours.	Promotion of collaborative working between RMA's and key stakeholders.	Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement	Improvements to preparation, response and recovery performance
To minimise resource use and waste production	No additional effect identified over and above current approach.	Preventing damage through influencing behaviours can result in less requirement for material to repair / replace and will reduce waste generation.	No additional effect identified over and above current approach.	NFM and NBS would allow for a much greater use of natural materials and would help remove or reduce the need for 'hard' engineered drainage solutions and thereby would reduce the need for plastic pipes, as well as other materials such as concrete, pipe bedding etc.	No additional effect identified over and above current approach.
To avoid negative effects on and / or protect and / or promote the sustainable management and resilience of built assets / infrastructure	No additional effect identified over and above current approach.	No additional effect identified over and above current approach.	Strategic planning and sharing of information across organisations will allow for a much greater and more comprehensive understanding of where new risks may arise in respect of assets and built infrastructure and how best to address these.	Nature based solutions are more likely place less reliance on built infrastructure.	Improvements to preparation, response and recovery performance would allow a more efficient and effective response to flood events. Resource sharing will help to ensure the best and latest equipment is available where it is needed to help protect or



Key new elements of approach in LFRMSP

SEA Objective	Making evidence more accessible to promote transparent, evidence-based decisions	Better communities and influence behaviours.	inform and collaborative working between RMA's and key stakeholders.	Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement	Improvements to preparation, response and recovery performance
					repair built assets and infrastructure.



6.3 Conclusions to consideration of Alternatives

The legislative requirement to develop a Flood Risk Management Strategy and Plan, alongside the key objectives, high level principles and measures set out at a national level in Wales means that there is little flexibility in setting out or considering strategic alternatives to the LFRMSP. As such, consideration of Alternatives was made on the basis of considering implementing a new LFRMSP rather than continuing with the current approach to flood management in Neath Port Talbot. It was considered that the new LFRMSP will contain a number of elements that build upon the current approach. These elements are:

- Making evidence more accessible to promote transparent, evidence-based decisions
- Better inform communities and influence behaviours.
- Promotion of collaborative working between RMA's and key stakeholders.
- Promotion of NFM and NBS, alongside general environmental and biodiversity enhancement
- Improvements to preparation, response and recovery performance

In consideration of implementing a new LFRMSP rather than continuing with the current approach it can be seen that the new elements, which have been derived from requirements of new legislation and new approaches, are anticipated to result in a Strategy that will have the potential to deliver environmental benefits across a range of SEA Objectives.

Of particular note are the incorporation of specific Measures to ensure Natural Flood Management and Nature Based Solutions as well as general environmental and biodiversity enhancement, which are anticipated to result in beneficial effects across all SEA Objectives. Other aspects of note include promotion of collaborative working and improvements to preparation, response and recovery performance, though it should be noted that, depending on how implementation is carried out, there is a potential that increased and rapid flood response could result in additional air and carbon emissions.

It is also worth noting that, although not included as part of the consideration of Alternatives, both the current approach and the new proposed NPTLFRMS are likely to include options that include heavy engineering and or construction activities – these are anticipated areas where significant adverse effects are most likely, though the new approach, through the emphasis on NFM, NBS and environmental enhancement may provide greater opportunities to address any adverse effects arising.

All new elements are anticipated to be beneficial in respect of the objective to maintain and enhance the health, economic and social wellbeing of the local community and support attractive, resilient and viable communities.

7. Compatibility between LFRMSP Objectives and SEA Objectives

7.1 Introduction

This section sets out the consideration of how well the LFRMSP objectives align with the SEA Objectives. This is important to understand at early stages of assessment as it allows an early overview of how well the LFRMSP is likely to 'perform' in environmental terms. If it is shown that on the whole there is broad alignment / compatibility between both sets of objectives, then it is considered worthwhile to note where there may be some areas of uncertainty and potential areas of conflict that may require addressing through recommendations at the assessment stage. If, on the other hand, it is shown that there is overall potential conflict between both sets of objectives, then it is considered worthwhile at this early stage to understand why that might be and to make early recommendations to how the Plan objectives can be better aligned with the SEA Objectives – this would increase confidence that the Plan, when developed, would perform well in respect of environmental considerations.

The LFRMSP objectives considered were as follows:

1. Reducing the threat to life by reducing the number of properties at risk of flooding.
2. Reducing the consequences for individuals, communities, businesses, and the environment from flooding and coastal erosion.
3. Provide strategic leadership and direction at a local level.
4. Improve our understanding of local flood risk and how climate change will affect standards of protection in the future.
5. Ensure RMA's & Stakeholders work together to effectively manage Flood Risk & Coastal Erosion
6. Prioritising projects and investment using a risk-based approach
7. Reduce disruption to critical services, transport, and infrastructure network within the county borough
8. Raise awareness of flooding and engaging with people in the response to flood and coastal erosion risk
9. Develop policies for effective land use management and enhanced development control procedures to ensure future developments incorporate effective surface water management
10. Improve regular maintenance schedules and improve existing flood and coastal erosion risk management assets.
11. Providing an effective and sustained response to flood and coastal erosion events.
12. Develop a local programme of investment for flood and coastal erosion risk management.
13. Ensure Flood Risk Management Projects are delivered in a responsibly sustainable way with a focus on environmental benefits and enhancements.
14. Identify locations where flood risk can be reduced by working with or enhancing the natural environment.

The above objectives were considered, at a high level, against those SEA Objectives set out in the assessment framework – see Section 5. Note it is to be stressed that the considerations made are done so at an early stage of assessment, without full knowledge of the Plan development – as such, considerations may change as the assessment process continues. The rationale though is that this early assessment gives a broad indication of whether the Plan development is aligned to the SEA or not and allows for early corrective action if required. The following key to compatibility was utilised to provide an indication of broad compatibility:



Table 7-1 - Key to compatibility of Objectives

✓	Objectives are considered broadly compatible
X	There is potential conflict between Objectives
?	Compatibility depends upon the nature of implementation
NR	Not relevant / No relationship

7.2 Compatibility assessment outcomes

An overview of how compatible the two sets of Objectives is as follows on Table 7-2.

From the overview it can be seen that the two sets of Objectives are broadly compatible across many aspects of the SEA Framework. Of particular note, in relation to the SEA are the clear signs that elements of the LFRMSP are to be developed with objectives that have a focus on environmental protection. This can be seen for example in a number of the objectives that specifically note environment such as 'reduce the consequences for individuals, communities, businesses, and the environment from flooding and coastal erosion' (Objective 2), 'ensure Flood Risk Management Projects are delivered in a responsibly sustainable way with a focus on environmental benefits and enhancements' (Objective 13) and 'Identify locations where flood risk can be reduced by working with or enhancing the natural environment' (Objective 14). Other areas are also considered compatible in discrete elements of the SEA Objectives, such as linkages to biodiversity, or surface water management.

There are also areas where there is a certain amount of uncertainty as to how implementation of the LFRMSP will transpire in practice – elements could, upon implementation, have beneficial or adverse effects on the environment, or could result in Actions which are at odds with the overall aims of the SEA. One element where this can be seen is in respect of 'reducing the threat to life by reducing the number of properties at risk of flooding'. Clearly this is an important aim of the LFRMSP, but may result in schemes that require heavy engineering or construction activities, with resulting risk of adverse environmental effects, or which have high levels of embedded carbon.

It should be borne in mind though, that areas of uncertainty are to be expected at this stage of Plan Strategy development and it is the nature of such a Plan that there could be elements that are less sustainable e.g. heavy engineering requirements. It is anticipated that these issues would be explored in detail within the LFRMSP via Measures and Actions. It is also considered likely that such Schemes are well known in their effect and it should be possible to mitigate such effects through good planning, design and construction practices.

Finally, there are elements of the LFRMSP which are of little or no relevance to the SEA. Issues such as financial considerations and timing of investment (such as Objective 12) are best explored through other mechanisms and the SEA does not comment on these.

For further information on the Compatibility Assessment, see Appendix C.

Table 7-2 - Overview of objectives compatibility

LFRMSP Objectives	SEA Objective												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Reducing the threat to life by reducing the number of properties at risk of flooding.	✓	?	?	✓	✓	?	✓	✓	?	?	✓	✓	✓
Reducing the consequences for individuals, communities, businesses, and the environment from flooding and coastal erosion.	✓	✓	✓	✓	✓	✓	✓	✓	?	✓	✓	✓	✓
Provide strategic leadership and direction at a local level.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Improve our understanding of local flood risk and how climate change will affect standards of protection in the future.	NR	NR	NR	NR	NR	NR	✓	✓	NR	NR	?	NR	NR
Ensure RMA's & Stakeholders work together to effectively manage Flood Risk & Coastal Erosion	✓	✓	✓	✓	?	?	NR	✓	✓	✓	✓	?	✓
Prioritising projects and investment using a risk-based approach	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	✓	NR	✓
Reduce disruption to critical services, transport, and infrastructure network within the county borough	NR	NR	NR	NR	NR	NR	✓	✓	NR	NR	✓	✓	✓
Raise awareness of flooding and engaging with people in the response to flood and coastal erosion risk	✓	✓	✓	NR	NR	NR	✓	NR	✓	✓	✓	NR	✓
Develop policies for effective land use management and enhanced development control procedures to ensure future	✓	✓	✓	✓	NR	NR	✓	✓	✓	✓	✓	NR	✓



LFRMSP Objectives	SEA Objective												
	1	2	3	4	5	6	7	8	9	10	11	12	13
developments incorporate effective surface water management													
Improve regular maintenance schedules and improve existing flood and coastal erosion risk management assets.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Providing an effective and sustained response to flood and coastal erosion events.	NR	NR	NR	NR	NR	NR	✓	✓	NR	NR	✓	✓	✓
Develop a local programme of investment for flood and coastal erosion risk management.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Ensure Flood Risk Management Projects are delivered in a responsibly sustainable way with a focus on environmental benefits and enhancements.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Identify locations where flood risk can be reduced by working with or enhancing the natural environment.	✓	✓	✓	✓	✓	✓	✓	✓	✓	NR	NR	NR	NR



8. Assessment of policy measure proposals

8.1 Introduction

The LFRMSP sets out a series of flood measures that have been selected to achieve the objectives of the Plan Strategy. It is the foremost intention that through implementing such measures, there will be a reduction in flood risk across the borough.

The measures are set out under a series of high level themes as follows:

Table 8-1 - Flood measures grouped by theme

Theme	Applicable measures
Development planning and adaptation	Measure 1: SuDS development Measures 2: SAB and Planning Consultee
Flood forecasting, warning and response	Measure 3: Flood Action Plan Measure 4: Adaptation and Reliance
Land, cultural and environmental management	Measure 5: Natural Flood Management (NFM) and Nature Based Solutions (NBS) Measure 6: Environmental and Biodiversity Enhancements
Asset management and maintenance	Measure 7: Asset Surveys Measure 8: S21 Asset Register Measure 9: Critical Flood Risk Asset Inspections Measure 10: Critical Flood Risk Asset Maintenance and Repairs Measure 11: Construction of flood alleviation schemes
Studies, assessments and plans	Measure 12: Flood Risk Assessments Measure 13: S19 Investigation into flooding Measure 14: Feasibility Studies Measure 15: Business Case Development
High level awareness and engagement and Monitoring	Measure 16: Communicate Risk Measure 17: Warn and Inform Measure 18: Partnership working with other RMAs Measure 19: Emergency response plans

This section predicts and evaluates likely environmental effects arising from the proposed flood measures set out in the LFRMSP and noted recommendations in order to address shortfalls identified during the assessment. Note that the measures have been assessed on the grouped basis per theme as it was considered that these measures were mutually supportive and this approach would provide for a more comprehensive understanding of how the measures perform within the Plan. One measure (Measure 11: Construction of flood alleviation schemes) was assessed separately however, as it was considered that this measure could lead to potentially large scale civil engineering or construction works, with a consequent potential for significant environmental effects.



The policies have been assessed against the SEA Objectives using the following significance scale:

Table 8-2 - Criteria for assessing significance of effect

Assessment Scale	Assessment Category	Significance of Effect
+++	Major beneficial	Significant
++	Moderate beneficial	
+	Slight beneficial	Not Significant
0	Neutral or no obvious effect	
-	Slight adverse	
--	Moderate adverse	Significant
---	Major adverse	

The measures have been assessed against the following SEA Objectives:

1. To protect and enhance biodiversity, priority species, vulnerable habitats, habitat connectivity and resilience with the capacity to adapt to change, and achieve Net Benefit for Biodiversity
2. Protect and enhance areas designated under the Habitats Regulations
3. To protect and enhance geology, the functionality, quantity and quality of soils as a resource, and to support sustainable use of land for multiple benefits.
4. To protect and enhance the quantity and quality of surface, groundwater, estuarine and coastal waterbodies in line with the requirements of the WFD, and to maximise the sustainable management of water resources.
5. To reduce and minimise air and noise emissions
6. Contribute to the national (UK) target of Net Zero by 2050
7. To reduce vulnerability of built infrastructure and ensure resilience and adaption to climate change risks and hazards
8. To reduce or manage flood risk by limiting the causes and effects of climate change
9. To conserve, protect and enhance landscape, townscape and seascape character and visual amenity
10. To conserve, protect, sustainably manage and enhance the historic environment and assets, including archaeology
11. To maintain and enhance the health, economic and social wellbeing of the local community and support attractive, resilient and viable communities
12. To minimise resource use and waste production
13. To avoid negative effects on and / or protect and / or promote the sustainable management and resilience of built assets / infrastructure

8.2 Assessment results

The following table provides an overview of results from the assessment of policies. Full details are provided in Appendix D.



Table 8-3 - Measures - Assessment results

NPTLFRMPS Element	SEA Objectives														
	1	2	3	4	5	6	7	8	9	10	11	12	13		
Development planning and adaptation															
Measure 1: SuDS development	++	+	++	+++	+	+	++	++	++	+	++	++	++		
Measures 2: SAB and Planning Consultee															
Flood forecasting, warning and response															
Measure 3: Flood Action Plan	0	0	0	0	0	0	+	+	0	0	++	+	+		
Measure 4: Adaptation and Reliance															
Land, cultural and environmental management															
Measure 5: Natural Flood Management (NFM) and Nature Based Solutions (NBS)	+++	+++	++	+++	+	+	+	+	++	+	++	++	+		
Measure 6: Environmental and Biodiversity Enhancements															
Asset management and maintenance															
Measure 7: Asset Surveys	+/-	+/-	+/-	-	+	+	+	+	+	+	++	+	+		
Measure 8: S21 Asset Register															
Measure 9: Critical Flood Risk Asset Inspections															
Measure 10: Critical Flood Risk Asset Maintenance and Repairs															
Measure 11: Construction of flood alleviation schemes	+	--	+	--	+/-	-	-	--	++	+/-	+/-	+/-	++	+/-	+
Studies, assessments and plans															
Measure 12: Flood Risk Assessments	0	0	0	0	0	0	0	0	0	0	0	0	0		
Measure 13: S19 Investigation into flooding															
Measure 14: Feasibility Studies															
Measure 15: Business Case Development															
High level awareness and engagement and Monitoring															



Measure 16: Communicate Risk	+	+	+	+	+	+	++	+	+	+	++	+	+
Measure 17: Warn and Inform													
Measure 18: Partnership working with other RMA's													
Measure 19: Emergency response plans													



8.2.1 Development planning and adaptation

These measures relate to ensuring that sustainable drainage (SuDS) is incorporated into development, as well as increasing the involvement of the SuDS Advisory Board (SAB) and planning authorities and getting these bodies to work more effectively with each other.

It is anticipated that as a result of these measures, opportunities could be taken to install SuDS in any new or refurbishment project. SuDS is a wide range of measures that allows for the incorporation of green infrastructure (inc. planting) that can help enhance biodiversity and provide habitat for a wide range of species, including priority species. It also allows for habitat connectivity and resilience. The involvement of SAB as a Planning consultee should ensure the inclusion of SuDS and will help to ensure adherence to latest guidance / methodologies etc. The need for long term maintenance is noted – it is anticipated that this would help to remove the threat of invasive species becoming established.

In addition to benefits for biodiversity, as SuDS allows for more natural drainage and key features would typically be green infrastructure – ponds, streams, landscaped areas etc., this can protect and enhance landscapes (if at scale), or more locally townscapes. Overall visual amenity can be enhanced. The requirement for SuDS as part of the planning process and the noted need for maintenance gives confidence the SuDS would become established.

It is anticipated that the SuDS would be developed outside sites designated for nature conservation, so effects would likely be indirect. Nevertheless, the incorporation of SuDS can allow for more natural flood conditions which would potentially reduce the threat of flooding in sites designated for nature conservation, which may be downstream of a development. The potential for SuDS to allow for biodiversity enhancement could have indirect beneficial effects on sites by increasing habitat connectivity and providing for species outside the designated area.

SuDS allow for more natural drainage methods and this can help to protect soils as a resource, as well as support sustainable use of land for multiple benefits – for example it can ensure that soil is incorporated into a development and not simply replaced with hardstanding. This helps to maintain soil health and preserve it as a resource and can help to support infrastructure development, but also green infrastructure, as well as allowing for effective control of water and helping to ensure water quality is improved.

A key aspect of SuDS is that it can protect or improve water quality, in addition to effectively managing flow. This is in keeping with the aims of the WFD and is considered key to the sustainable management of wider water resources. Promotion of the use of SuDS is a key action noted in the River Basin Management Plan for Western Wales.

Ensuring the incorporation of SuDS into development via the use of SAB and wider planning controls means that effects would be large beneficial from the short through to the long term. Effects could be of regional significance in the longer term as more schemes become established.

SuDS are a very passive system for managing water and when well designed and maintained, can remove the need for pumping or reduce the amount of water being treated at Treatment Works, with reduced air and noise emissions. SuDS also remove areas of hard standing and this can reduce dust generation. As such, it is anticipated that the implementation of SuDS would be beneficial in respect of air and noise emissions. The widespread implementation of SuDS and the subsequent reduced need for pumping or water treatment would also likely have a consequent reduction in carbon emissions. In addition, while not directly related to reducing emissions, SuDS would also allow for planting that can help to sequester carbon.

SuDS can also help in respect of adaptation to climate change as they more closely mimic natural drainage than traditionally engineered approaches. As such, they can ‘slow’ water and remove / reduce discharge peaks and if positioned correctly, can act to complement hard drainage. This can mean the wider drainage network is better able to cope with the extreme peak events anticipated to become more frequent with a changing climate. In addition, by reducing the rate of flow in a catchment, they can help to protect built assets / infrastructure such as bridges, roads etc. from damage by extreme flows or flooding.



The setting of heritage assets such as scheduled monuments, or historic landscapes / townscapes can be enhanced by the incorporation of SuDS and the typical design elements associated with it. Removing the need for hard engineered pipes etc. could potentially also help to protect archaeology e.g. there is less risk of disturbance / destruction and water logged archaeological artefacts may remain better preserved.

The development of green infrastructure, as part of SuDS, would allow for more open space, enhanced biodiversity, more attractive landscape / visual amenity and ultimately help to enhance a better 'sense of place' and likely benefit to health and wellbeing, particularly if used for recreation. Places will have an opportunity to become more attractive to live and work in. Communities will be more resilient and viable by better managing flood risk.

SuDS would allow for a greater use of natural materials and would help remove or reduce the need for 'hard' engineered drainage solutions and thereby would reduce the need for plastic pipes, as well as other materials such as concrete, pipe bedding etc. The natural materials typically used in SuDS are easier to recycle / repurpose and as such overall waste would be reduced.

Overall, it is considered that the measures relating to the theme of development planning and adaptation set a good basis for a range of beneficial effects across the SEA objectives. Many of these effects can be anticipated to be significant, notably in respect of biodiversity, soils, water quality and resources, vulnerability of built assets / infrastructure and resilience / adaptation to climate change, landscape and townscape, resource use and waste production.

It is also worth noting that the measures are anticipated to be significantly beneficial in terms of maintaining and enhancing the health, economic and social wellbeing of local communities, as well as support attractive, resilient and viable communities.

8.2.2 Flood forecasting, warning and response

The measures set out relate to the development of Flood Action Plans and Adaptation and Resilience. It is the purpose of a Flood Action Plan to outline actions and tasks for managing flood risk within specified timeframes, ensuring alignment with the objectives and measures outlined in the relevant strategy. Consideration of the interaction with the SEA Objectives is considered throughout this assessment. A Flood Action Plan is set out for Neath Port Talbot in the LFRMSP and is assessed in relation to each Catchment (see Section 9).

In relation to adaptation and resilience, it is anticipated that by integrating these principles into planning and policy making, along with construction of resilient infrastructure, then there will be beneficial effects in terms of adaptation to climate change and increased risk of flooding. In short, a community that is prepared for the potential of flooding, through action plans, or through taking pre-emptive measures or by having resilient design and construction will be better able to reduce or manage flood risk as well as the wider effects of climate change. Strategies to help with recovery will also limit effects. Better preparation would include through improved infrastructure, early warning systems, and disaster response plans, thereby lessening the immediate impact of floods. It is also anticipated this will lead to lower long-term vulnerability by encouraging sustainable land-use practices and constructing resilient infrastructure that can withstand future flood events. There would also be post-flood recovery strategies to help enable quick restoration of normalcy. Well informed and prepared communities are also anticipated to have enhanced social and community networks, with reduced property damage, lower recovery expenses and livelihoods which are more secure. Nevertheless, some flood risk will remain, with consequent adverse effects and there will nearly always be some level of reconstruction / refurbishment required post flood.

Overall, it is considered that pre-planning can effectively help communities to develop resilience to flooding. This will be significantly beneficial in respect of maintaining health, economic and social well-being of communities.

8.2.3 Land, cultural and environmental management

The measures set out a number of aspects that are highly relevant to effects on the environment and will typically act in a 'cross cutting' fashion – i.e. they will have implications across a wide range of environmental topics. These measures include Natural Flood Management (NFM) approaches and Nature Based Solutions (NBS). These elements will be enhanced by a clear focus in the measures on general environmental and biodiversity enhancements. It is anticipated that by integrating these approaches into flood risk management strategies, communities can enhance their resilience to flooding while also realising a range of additional social, economic, and environmental benefits.

Both NFM and NBS provide numerous opportunities to protect, restore and enhance biodiversity. This can lead to benefits for a wide range of species, including relevant priority species, protect vulnerable habitats and help build resilience into these as well as improve habitat connectivity. Note is also made that there would be integration of integrating ecological considerations into flood control measures to create multifunctional landscapes. Overall it is anticipated that there would be opportunities that would result in a net benefit for biodiversity, with significant beneficial effects at a local to regional level, particularly as habitats become established / restored etc.

While no direct note is made of sites designated for nature conservation, it is anticipated that significant beneficial effects could be experienced indirectly through wider measures that result in net benefit for biodiversity. Both NFM and NBS would act synergistically to provide protection to designated sites by reducing a risk of flooding, but would also act to increase valuable habitats, habitat connectivity and provide for priority species outside those designated areas.

The utilisation of NFM and Nature based solutions utilise natural hydrological processes to managing water. This is intimately connected to the underlying geology and overlying soil resource and as such requires management of these. General environmental or specific biodiversity enhancements could be expected to protect soil quality and support more sustainable use of land that will result in multiple benefits such as open space for recreation – this could have consequent beneficial effects on health and wellbeing.

The resulting more natural flow rates from utilising NFM and NBS will also act to improve water quality in all mediums (ground, surface, coastal) – for example there will be less runoff from areas of hard standing that could be potentially polluted, or would result in less sedimentation in local waterbodies. There would also be less volumes and therefore less requirement to treat water that has entered the storm system. These approaches are in keeping with the aims of WFD and relevant River Basin Management Plans. In short, these approaches will provide opportunities for more natural runoff rates in catchments, improvements in water quality, reduction in pollution, reduction in the need for hard infrastructure (or allow for the removal of some man made features) and so on. These approaches are also aligned to the themes set out in Opportunity Catchment areas of ensuring sustainable land management, reversing the decline of biodiversity, adapting to a changing climate and reducing health inequalities. Effects would be particularly beneficial in the medium to longer terms as more areas utilise these NFM and NBS approaches.

While the essence of NFM and NBS is that they are a natural process, they could have indirect benefits on air and noise emissions by helping to reduce the need for pumping or water treatment. The use of vegetated surfaces would reduce dust generation. However, beneficial effects are likely at only a local scale.

While there would be limited reduction in carbon (and air pollution) emissions due to less need to pump and treat water, the use of NFM, NBS, general environmental enhancement and a focus on biodiversity, would allow opportunities for carbon sequestration through planting, or through the protection or enhancement of peatlands, bogs, protection of soils and so on. Although likely of slight effect, this would nevertheless play a part in reducing the causes of climate change.

Being based in nature and therefore having fundamentally natural processes, this will help ensure less reliance on built infrastructure and as such are inherently more resilient to climate change than fixed hard engineered 'solutions'. More natural flood control will also reduce impact on downstream assets such as bridges, culverts, roads, drainage network etc. and therefore increase their resilience. However, like any system, nature based solutions can be

overwhelmed by extreme events. Nevertheless, they provide opportunities to help adapt to a changing climate, such as planting of a range of (native) species that are better able to withstand weather extremes.

NFM, NBS, general environmental enhancement and a focus on biodiversity, would allow opportunities for enhancing landscapes, townscapes and general visual amenity by protecting from development those areas of importance to the management of water – it is anticipated this would frequently be upland areas or hillsides with high landscape / visual prominence. This could also enhance a sense of tranquility and maintenance of 'dark skies'. Enhancement could be through planting etc. Seascapes could also be protected through removal of water from the storm network and therefore reducing discharge that could be polluted with rubbish or sewage. Specific note is also made in these measures of coastal habitat restoration which would help enhance seascape character.

In addition to townscapes, these measures would also provide opportunities to enhance the setting of individual heritage assets or wider heritage landscapes. A focus on natural hydrological processes could help to preserve those archaeological remains which are reliant on waterlogged conditions. A reduced need for 'hard engineered' infrastructure would reduce the potential for loss or damage to heritage assets.

A focus on more natural systems will act to support attractive and resilient communities, with benefits for health and wellbeing for example through protecting open green space as well as enhancing biodiversity – these aspects are known to provide benefits to peoples mental and physical wellbeing. An overall reduction in flood risk can also have significant benefits in terms of mental wellbeing for those residents of flood prone areas. Community engagement and education is noted as part of these measures – this can help to engender a sense of ownership, as well as a sense of place, again with recognised benefits for wellbeing. The economy can be enhanced by making areas more physically attractive to visit or do business in.

These measures would also allow for a much greater use of natural materials and would help remove or reduce the need for 'hard' engineered drainage solutions and thereby would reduce the need for plastic pipes, as well as other materials such as concrete, pipe bedding etc. The natural materials typically used are easier to recycle / repurpose and as such overall waste would be reduced.

Overall, it is considered that the measures relating to the theme of land, cultural and environmental management provide a very strong basis for a range of beneficial effects across the SEA objectives. Many of these effects can be anticipated to be significant, notably in respect of biodiversity, designated sites, soils, the water environment, townscape and visual amenity, the health and wellbeing of communities and the ability to minimise resource use and waste production. It is worth noting that these measures are particularly reflective of the aims of the Water Framework Directive River Basin Management Plans and associated Opportunity Catchment areas (South West Wales).

8.2.4 Asset management and maintenance

These measures are about understanding the county's drainage infrastructure, what assets are in it and their condition, as well understanding how these interact with other systems such as the road network. This knowledge will give a much more robust understanding of flood risk. It is also about undertaking proactive maintenance and repairs such as grid cleansing, de-silting, and channel clearance to allow for the drainage systems to work at maximum capacity. More proactive and effective maintenance will keep built infrastructure in good condition for longer, removing the need for more intensive reconstruction / replacement, with consequent beneficial effects in relation to air, noise and carbon emissions, as well as the use of natural resources and the generation of waste. More efficient systems (well maintained and robust) will also help to reduce vulnerabilities to a changing climate and help the asset to adapt to more frequent extreme weather events. Well maintained and refurbished assets will also be more beneficial in terms of visual amenity in the local landscape or townscape. This would also allow for the protection / refurbishment of historic structures such as bridges.

Proactive maintenance has the potential to aid biodiversity by removing invasive species, controlling unwanted species or ensuring that any planting schemes become established. Ensuring that silt does not build up can help to



protect river beds, though it should be noted that there could be a downstream risk of pollution and desilting can also disrupt the natural hydrology of a river. These measures could also help to protect and enhance sites designated for nature conservation, should these have flood assets located on them, or be dependent upon them – this can help to maintain the drainage system in a manner which is in keeping with the objectives of the site. However, maintenance activities do have the potential to be noisy and disruptive, with a risk of pollution incidents occurring, or a potential loss of or damage to important features such as habitat. These would represent slight adverse effects in terms of biodiversity, protection of designated sites, soils and so on.

Asset surveys, registers and inspections will help to maintain health, economic and social wellbeing of local communities by helping to better understand flood risk, where likely 'hotspots' will be and making it possible to plan effectively. Pro-active maintenance will ensure assets are better able to work to their design, again helping to protect communities and remove some risk.

Overall it is considered that these measures are beneficial across most environmental aspects, though these benefits will most likely be slight. However, it is considered that those aspects of relevance to health, economic and social wellbeing are of significant benefit. The potential for water quality issues during refurbishment (including desilting operations) could be of adverse effect, though it is considered these could be well managed through pollution prevention measures such as silt mattresses, silt curtains, bunds etc. It is recommended that note is made of the need for pollution prevention during maintenance operations.

8.2.5 Construction of flood alleviation schemes

This measure is concerned with the construction of large scale flood alleviation schemes that are anticipated to require significant civil engineering and construction activities.

By their nature, new hard engineered flood alleviation schemes have the potential to result in adverse effects on biodiversity through direct loss, or encroachment to habitats, as well as the severance / fragmentation of green infrastructure. It is also important to note that these could potentially result in physical modifications to water channels – the River Basin Management Plan for West Wales notes that physical modifications such as man made changes to natural habitat, through poorly designed or redundant flood walls and weirs, and changes to natural river channels can be considered significant water management issues and can cause changes to natural flow levels, build up sediment and loss of habitat.

Effects would most likely be during construction stage, when disturbance via noise or pollution deposition could also be a factor. However, in some circumstances, hard engineered schemes could protect vulnerable habitats or general biodiversity from the effects of flooding. During operation, hard engineered structures in watercourses can act as a barrier to fish migration – this is a prevalent problem in the Neath Port Talbot area and it is recognised in the RBMP (Ogmore to Tawe) that mitigation of this will be an important factor in improving fish passage and fish status.

It would be important to ensure that hard engineered flood alleviation schemes are not developed in areas designated for nature conservation, unless it could be demonstrated through HRA that there was no viable alternative. As with general biodiversity, there would be a potential for adverse effects, particularly during construction, though there could be a potential benefit to sites should the scheme offer protection to the designated area. Note that effects could be direct or indirect.

It is anticipated that new hard engineered assets could potentially be located within moderate to good agricultural lands, or greenfields, hence leading to a decrease in quality soils or potential effect on geodiversity, though it is anticipated that extent would be typically relatively limited in area. There is also a potential that new areas could become contaminated e.g. following accidental pollution during construction. However, schemes may also provide an opportunity to remediate contaminated land – including removal / treatment of invasive species such as Japanese Knotweed.

Construction of engineered assets can have implications for water quality due to the potential for pollution incidents. The asset will also likely change the local hydrological regime to less natural flow conditions when operational and may have adverse implications for WFD objectives.

During construction there is a potential for air and noise emissions from construction activities. While operational, hard engineered schemes are anticipated to be passive, with no noise or air emissions (unless pumping is required). During this phase effects are anticipated to be neutral (though slight adverse if pumping required).

There is also a potential for carbon emissions from construction activities. Such schemes can frequently also have a relatively high level of embedded carbon due to the use of materials such as steel or concrete, though use of other materials such as stone and soil is also possible. While operational, hard engineered schemes are anticipated to be passive, with no carbon emissions (unless pumping is required). During this phase effects are anticipated to be neutral (though slight adverse if pumping required).

One area of anticipated significant beneficial effects is that hard engineered solutions are tried and tested and are very effective at protecting infrastructure from flooding, thereby reducing vulnerability and can be designed to account for anticipated climate change factors and as such reduce associated risk and hazards. Nevertheless, these assets would likely contain embedded carbon, though this can be reduced through good design.

In addition to protection of general infrastructure / built assets, hard engineered solutions are very effective at protecting specific sites and as such can have a role to play to protect important assets. It is known for example, that heritage assets are vulnerable to the effects of flooding through a variety of mechanisms such as direct damage caused by issues such as scouring or increased waterlogging and indirect damage through events such as pollution enabled by flooding. As such, engineered solutions can protect scheduled monuments or specific buildings, conservation areas etc. Nevertheless, they can have an effect on setting – both potentially beneficial or adverse and may also disturb archaeological artefacts, particularly during construction. Changes to the local hydrological environment could have implications for waterlogged remains. These structures can also be seen as a new feature in the landscape / townscape and can have both beneficial or adverse effects on visual amenity, frequently depending on factors such as location and design. Good design can act to help regenerate areas, or provide protection to areas that can have multiple uses.

As they are so effective at protecting property etc. (and their beneficial effects can last decades), robust flood protection through hard engineered schemes can act to reduce direct or indirect threats to physical and mental wellbeing, protect economic assets and help to make communities more resilient to the risk of flooding. This would be of significant benefit.

Nevertheless, construction of new flood alleviation schemes would require use of materials / resources and would likely generate waste during construction. However, these schemes would also protect a range of assets and thereby reduce the need to replace or repair damaged assets, thereby avoiding future waste and resource use. Adverse effects are more likely in the short terms (construction).

Overall, while hard engineered structures can have significant adverse effects, particularly during construction through issues such as a loss of biodiversity, or the amount of carbon emissions or embedded carbon they require to construct, they are very effective at protecting infrastructure from flooding and if well built, can last many decades. As part of a range of catchment wide management, they can have an important role at very specific locations e.g. to protect high worth assets, or assets of cultural importance and as such can be considered a key element to wider sustainable management. They are particularly beneficial to providing reassurance to people that their properties are well protected, or even provide the perception of protection. The benefits to physical and mental well-being from this protection, or perceived protection are significantly beneficial.

It is recommended that reference is made in LFRMSP that dependent on the scheme, assessment will include, as required, Health Impact Assessment, Equalities Impact Assessment, Habitats Regulation Assessment and



Environmental Impact Assessment. It may be that specific specialist assessments are also required, for example on issues relating to fish passage or other issues noted in the relevant RBMP. Similarly, any scheme construction which results in amendments to traffic flow should consider implications for air quality management areas. It is also important to recognise that any scheme being developed in the fluvial, estuarine or coastal environment should undergo assessment in respect of implications for the WFD and the objectives of the RBMP. Any design should consider the findings of all such assessments.

Environmental Management Plans (EMPs) will also be prepared and implemented for all construction, refurbishment and maintenance contracts and will include the findings and suggested mitigation from any assessment made. The EMPs will consider material resource use, energy use, and other environmental issues relevant to the scheme, and will explain how risks and impacts will be mitigated, managed and addressed.

Scheme design will proactively consider environmental protection from the earliest stage, and will ensure that the processes of scheme construction, maintenance and operation identify and take opportunities available to protect air quality, reduce greenhouse gas emissions, consider and build resilience to climate change, avoid areas designated for nature conservation, protect and enhance biodiversity, protect the historic environment, protect the landscape and visual amenity of Neath Port Talbot, protect the water environment, protect natural resources and reduce the use of materials, reduce waste and reduce embedded carbon.

8.2.6 Studies, assessments and plans

In order to provide adequate protection to people and their property, it is vital that a thorough understanding is developed of the overall flood risk in the county, as well as at individual 'hotspots'. This understanding will be developed through a series of studies and assessments, including Flood Risk Assessments and specific investigations into flooding, that will allow the development of schemes that can address the identified issues. These schemes would be then subjected to a Business Case.

While these studies, assessments and plans in themselves are not anticipated to have direct effects on the environment and are therefore considered neutral for the purposes of this SEA², it is worth noting that there are some important aspects to these which could ultimately result in beneficial effects.

For example, Flood Risk Assessments will focus on local measures to achieve protection against flooding. A series of recommendations will be made and these would identify opportunities for environmental enhancements (as set out in Measure 5 and Measure 6). Other aspects where opportunities would be taken relate to socio-economic issues, implementation of SuDS (Measures 1 and 2) and so on. Ultimately, the aim would be to identify a holistic approach in a catchment that could include elements of all measures noted in the LFRMSP.

Therefore, while these measures are anticipated to be neutral for the purposes of this SEA, they are nevertheless considered to be a vital part of the overall approach to ensuring flood protection can be achieved, while still protecting people and the environment. It is important to note that further assessment may be required in respect of the findings of any study, assessment or plan, or these could result in the development of some schemes, including those that could have adverse effects such as through the requirement for large scale engineering and construction. Nevertheless, it is considered that any issues arising could be addressed via other Measures set out in this plan.

² It was also considered that these measures link closely to other measures outlined in the plan – as such there is a risk of 'double counting' benefits. For example, FRA's will identify opportunities for environmental enhancement – these are set out under Measure 5 and Measure 6.

8.2.7 High level awareness, engagement and monitoring

These measures relate to communicating with communities and individuals who are at risk of flooding. It is the intention that this communication will be clear, simple messaging using plain language, visual aids, and multilingual information. A variety of formats will be used for information dissemination.

These measures are also about the introduction of early warning systems, along with timely flood warning to enable safe evacuations, property protection and allow for psychological preparedness, reducing panic and fostering community resilience. A key element in these measures is having Emergency response plans and working with a range of partner organisations to share knowledge and resources.

Elements of these measures have the potential to provide beneficial effects to biodiversity, though these will be slight. For example, timely flood warnings provide people opportunities to prepare for floods and this could include the removal from harm items that could lead to a pollution event and impact biodiversity such as fuel tanks, vehicles etc. Similarly, early preparations and emergency response plans could allow for protection to sensitive habitats to be put in place or for emergency maintenance works to take place such as to culverts etc that might lessen the extent of flooding. Similarly, early warning and advanced planning with partner organisations could help to identify those sites designated for nature conservation (or features within such sites) that may be at risk and measures could be taken to prevent / minimise damage.

Shared resources between organisations, including strategic planning will also allow for a quicker recovery and this would benefit biodiversity such as by removing contamination – this could include preventative measures to stop invasive species becoming established. This would also allow for the removal of detritus or contamination from areas of high quality soil. Measures could also be taken, with early warning, to undertake emergency measures that would lessen the extent of flooding.

Preventing damage through taking early measures will also reduce the need for generators, pumps, drying equipment etc. to be used in post flood recovery and reduce the need for general construction / repair activities as well as reduce hydrocarbon use, with beneficial effects in terms of air, noise and carbon emissions. There would also be a reduction in embedded carbon associated with material use used to replace or repair damaged or lost items.

Flood risk is anticipated to increase with a changing climate, with more intense floods of greater frequency likely. Strategic planning and sharing of information across organisations will allow for a much greater and more comprehensive understanding of where new risks may arise and how best to address these. Vulnerability will be reduced through good communication to inform people of the increased risk and allow them to take measures to adapt to new risks and hazards. This would be beneficial both for individuals and their properties as well as across communities as a whole. Resource sharing will help to ensure the best and latest equipment is available where it is needed to further reduce vulnerability and greater joint training will be invaluable to ensure emergency personnel are fully up to date with changing threats and the best response. Effects will have greater beneficial significance as these new ways of working and greater understanding become more embedded.

Protection of property (and a quicker recovery) will also have beneficial effects in relation to landscape / townscape and overall visual amenity. Emergency response plans and effective early warning that allows emergency preventative action to protect sites or assets of heritage interest from floods can result in reduced damage. This will help to preserve the historic environment. Joint working with partner organisations can help identify vulnerable historic sites and allow better understanding of how flood risk may change for such sites and how best to protect them.

While it will not directly remove the threat of flooding, effective communication significantly benefits flood-prone communities by enhancing preparedness and ensuring timely responses. It increases awareness of risks and provides practical preparation steps, leading to better evacuation readiness and reduced property damage. Reliable information alleviates anxiety, while training in emergency skills enhances safety. Timely flood warnings enable safe evacuations, property protection, and psychological preparedness, reducing panic and fostering community

resilience. Warning and informing residents about flooding is a vital component of disaster risk reduction. It saves lives, protects property, minimises economic losses, enhances community resilience.

Partnership working would also likely include organisations concerned with health and social care as well as economic agencies

Overall, while beneficial effects are anticipated across the range of SEA Objectives, significant beneficial effects are anticipated in relation to these measures in respect of protection to built infrastructure and assets and how this will have beneficial effects on people through lowering the risk of flooding and reducing the stress involved. Reliable information alleviates anxiety, while training in emergency skills enhances safety. Timely flood warnings enable safe evacuations, property protection, and psychological preparedness, reducing panic and fostering community resilience. Warning and informing residents about flooding is a vital component of disaster risk reduction. It saves lives, protects property, minimises economic losses, enhances community resilience.

Working with partner organisations will also be very beneficial and this is in keeping with the aim of the WFD River Basin Management Plans and associated Opportunity Catchments, to help develop a collaborative and integrated approach to catchment management. Nevertheless additional benefit could be derived across a wider range of sectors and it is recommended that the LFRMSP notes more clearly that this will include organisations concerned with health and social care as well as economic agencies. This will also be aligned with the Opportunity Catchment theme of reducing health inequality.

It is also recommended that the LFRMSP places a greater emphasis on those members of the community who may be considered more vulnerable in terms of flood risk and their ability to recover from a flood event. For example, it is known that the elderly are less able to adapt to loss (temporary or otherwise) of property or loss of sentimental items.

9. Assessment of catchment proposals

9.1 Introduction

The County Borough has a mix of urban and rural communities situated along the steep hillsides, river and glaciated valleys and coastline. The main urban communities are located along the coast including Neath and Port Talbot town centres, Margam and the Sandfields housing estate. Pontardawe is also a main urban centre located in the Swansea Valley.

The Neath, Afan and Swansea Valleys are dotted with rural communities and are drained by the three main rivers located in the Borough, Afan, Neath and Tawe. Many areas of the county borough have been, and continue to be affected by severe flooding, and for some it can occur on an annual basis. The aim of the LLFA is to identify these locations and form local actions to alleviate flood risk.

As such, Measures in the Strategy and Plan have informed the basis for the development of new key actions for the Action Plan. These are set out for each catchment within the Plan area and consideration of whether implementation of these Actions are likely to cause a significant environmental effect is set out in this Section.

9.2 River Afan Catchment

It is noted that the River Afan Catchment is 2nd in Flood Risk Rank and in the upper reaches is steep sided, largely rural and dominated with forestry plantations and open moorland. In the lower reaches the landscape changes to heavily urbanised settlements along the coastline. At Port Talbot, which is the second largest town in NPTCBC, the river valley opens up to a large coastal plain dominated by residential and commercial properties, most notably by the Port Talbot Steel Works.

This catchment has a number of approaches to managing flood risk, including both hard engineered canalised river sections, hard engineered defences that protect residential and other properties, hard engineered coastal defences, with a remit to 'hold the line', to areas of sand dune which are classed as 'managed re-alignment'.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 5: Natural Flood Management (NFM) and Nature Based Solutions (NBS)

Measure 6: Environmental and Biodiversity Enhancements

Measure 7: Asset Surveys

Measure 8: S21 Asset Register

Measure 9: Critical Flood Risk Asset Inspections

Measure 10: Critical Flood Risk Asset Maintenance and Repairs

Measure 12: Flood Risk Assessments

An overview of how these Measures are considered to perform against each SEA Objective is as follows:



SEA Objectives													
No.	1	2	3	4	5	6	7	8	9	10	11	12	13
5 & 6	+++	+++	++	+++	+	+	+	+	++	+	++	++	+
7-10	+	+	0	-	+	+	+	+	+	+	++	+	+
12	0	0	0	0	0	0	0	0	0	0	0	0	0

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects. Of particular note are Measures 5 and 6 which relate to Natural Flood Management and Nature Based Solutions, as well as general environmental and biodiversity enhancement. Slight adverse effects are possible during refurbishment and maintenance, mainly through the risk of a pollution incident occurring, though it is considered these can be well managed.

The following Actions have been noted for this Catchment:

Table 9-1 - Actions proposed for River Afan Catchment

Action	Would this Action result in likely significant environmental effects?
Review Heol Y Nant FAS and update FRAW Mapping to reflect new construction	No – this Action is largely a desk based study to review an existing Flood Alleviation Scheme and update mapping to reflect the changed urban environment. As noted in Measure 15, there may be opportunities to incorporate wider well-being benefits such as environmental enhancements, regeneration, improved transport infrastructure, tourism initiatives and softer Natural Flood Management solutions, but this would be for future consideration.
Assess flood risk posed to Port Talbot by discussing with flood risk professionals in NRW.	No – this Action is in line with Measure 18, which encourages partnership working with other organisations. It is considered this would help to realise a range of beneficial effects through sharing of information and resources.
Continue to implement coastal monitoring of Baglan Burrows dune system (SMP2 Managed Re-alignment Policy Unit)	No – while managed realignment would have environmental implications, this Action relates to monitoring of Baglan Burrows dune system. This would allow further actions to be taken should it be shown that adverse environmental effects are taking place, but this would require future assessment and consideration in line with a range of Measures.
Continue to maintain and repair coastal defences along Aberavon Promenade (SMP2 Hold the Line Policy Unit)	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.
Assess Swn-Y-Nant, Blaengwyfi Surface Water Flood Risk	No – it is known that at the Swn-Y-Nant at Blaengwyfi a large culvert structure is known to exist conveying the Nant Y Gwynfi beneath the main access road to the village. It is not known what condition this is in and this Action would be to ascertain this, in line with Measures relating to asset management and maintenance. If required, further maintenance works could have the potential to cause adverse effects though that

Action	Would this Action result in likely significant environmental effects?
Assess Margam Street, Cymmer Surface Water Flood Risk	these could be mitigated through effective prior planning and good construction practices along with effective pollution planning. No – not much is known about this area where a small watercourse is understood to exist. This Action is to gather information and understand if this watercourse could cause a flood risk. If it is shown that there is a flood risk, then further assessment would be required, with potential works in the future. This Action would be in line with Measure 12.
Assess Talbot Road, Port Talbot Surface Water Flood Risk and communicate this with DCWW	No - surface water ponding issues have been recorded at this location which is linked to the performance of the DCWW combined sewerage system that the local highway drainage system relies upon. This is a largely desk based exercise to further understand the risk and further assessment would be required, with potential works in the future. This Action is in line with Measures 12, but would also require input from other organisations (Measure 18)
Maintain, inspect and cleanse nine (9) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

Overall, it is considered that the Measures and Actions proposed for the River Afan Catchment would not result in any significant environmental effects. For the most part, further assessment would be required, along with liaison with partner organisations and this could allow a series of beneficial opportunities to be realised – Measure 5 and 6 are particularly important in this regard. It is considered any adverse effects arising are likely to be slight and could be adequately mitigated through good planning and construction techniques. See Chapter 10 for further information on mitigation.

9.3 River Corrwg Catchment

The River Corrwg is one of the two tributaries that feed into the River Afan and is ranked 8th in flood risk. The River Corrwg has cut a channel through this valley floor and poses a high risk to residential and commercial properties built on the flat flood plain of Glynccorwg. The Corrwg catchment is largely rural, surrounded by managed forestry plantations and open moorland with a number of fast reacting brooks and streams leading down to the valley floor.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

- Measure 8: S21 Asset Register
- Measure 9: Critical Flood Risk Asset Inspections
- Measure 10: Critical Flood Risk Asset Maintenance and Repairs
- Measure 12: Flood Risk Assessments
- Measure 14: Feasibility Studies
- Measure 18: Partnership working with other RMAs

An overview of how these Measures are considered to perform against each SEA Objective is as follows:



SEA Objectives													
No.	1	2	3	4	5	6	7	8	9	10	11	12	13
8, 9 & 10	+	+	0	-	+	+	+	+	+	+	++	+	+
12 & 14	0	0	0	0	0	0	0	0	0	0	0	0	0
18	+	+	+	+	+	+	++	+	+	+	++	+	+

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects, though for the most part these would be slight and related to maintenance and repair and partnership working with other organisations. It is also important to note that maintenance / refurbishment does risk some adverse effects, particularly relating to the potential to cause pollution, though it is anticipated these could be well managed.

The following Actions have been noted for this Catchment:

Table 9-2 - Actions proposed for River Corrwg Catchment

Action	Would this Action result in likely significant environmental effects?
Undertake Feasibility Study at Glyncorwg	No – this Action is largely a desk based study to determine feasibility of taking flood protection measures and is reflective of Measure 14. These measures were considered to be neutral for the purposes of this SEA, though they are nevertheless considered to be a vital part of the overall approach to ensuring flood protection can be achieved, while still protecting people and the environment.
Maintain, inspect and cleanse five (5) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

Overall, it is considered that the Measures and Actions proposed for the River Corrwg Catchment would not result in any significant environmental effects. For the most part, further assessment would be required, along with liaison with partner organisations and this could allow a series of beneficial opportunities to be realised. It is considered any adverse effects arising are likely to be slight and could be adequately mitigated through good planning and construction techniques. See Chapter 10 for further information on mitigation.

9.4 Afon Pelenna Catchment

The Afon Pelenna is another tributary that feeds the River Afan and is considered 13th in flood risk. In the upper catchment the landscape is dominated by managed forestry plantations, open moorland and mixed grazing land. The upper catchment is not populated, though remnants of past coal mining activity scatter the hillsides. There are two settlements in the area, though given the topography they are not considered to be greatly at risk of flood. The river channel is largely natural except at the Afan Valley Road and Tonmawr Road junction where the river banks are

constructed of a masonry retaining wall to retain the structure of the highway and abutment to the road bridge. It is at this junction where the only assessed flood risk occurs.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 5: Natural Flood Management (NFM) and Nature Based Solutions (NBS)

Measure 6: Environmental and Biodiversity Enhancements

Measure 7: Asset Surveys

Measure 12: Flood Risk Assessments

Measure 14: Feasibility Studies

An overview of how these Measures are considered to perform against each SEA Objective is as follows:

No.	SEA Objectives												
	1	2	3	4	5	6	7	8	9	10	11	12	13
5 & 6	+++	+++	++	+++	+	+	+	+	++	+	++	++	+
7	+	+	0	-	+	+	+	+	+	+	++	+	+
12-14	0	0	0	0	0	0	0	0	0	0	0	0	0

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects. Of particular note are Measures 5 and 6 which relate to Natural Flood Management and Nature Based Solutions, as well as general environmental and biodiversity enhancement. Slight adverse effects are possible during refurbishment and maintenance, mainly through the risk of a pollution incident occurring, though it is considered these can be well managed.

The following Actions have been noted for this Catchment:

Table 9-3 - Actions proposed for Afon Pelenna

Action	Would this Action result in likely significant environmental effects?
Assess Johns Terrace, Tonmawr Surface Water Flood Risk	No – it is understood that this location has not been known to flood in the past and mechanisms for flooding are not understood. This Action is in line with Measure 7 which will undertake asset surveys and Measure 12, which will consider whether there is a flood risk or not. If there is a risk, further future assessment and action may be required, but this is not known at this stage.
Assess Tonmawr Business Park Surface Water Flood Risk	No – as with Johns Terrace, it is understood that this location has not been known to flood in the past and mechanisms for flooding are not understood. This Action is in line with Measure 7 which will undertake asset surveys and Measure 12, which will consider whether there is a flood risk or not. If there is a risk, further future assessment and action may be required, but this is not known at this stage.
Continue to maintain and inspect the highway drainage system at Glan-Pelenna, Pontrhydyfen	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that

Action	Would this Action result in likely significant environmental effects?
Develop NFM Solution at Tonmawr Road-Mynydd Penrhys	<p>these could be mitigated through good construction practices and effective pollution planning.</p> <p>Yes – it is considered that the development of an NFM solution could result in significant beneficial effects in line with Measure 5. While detailed assessment and design would be required, it is considered that implementation of NFM has the potential for beneficial effects across the full range of SEA Objectives, but particularly in respect of biodiversity, designated sites, soils, the water environment, townscape and visual amenity, the health and wellbeing of communities and the ability to minimise resource use and waste production.</p>

Overall, it is considered that the Measures and Actions proposed for the Afon Pelenna would result in significant beneficial environmental effects at Tonmawr Road-Mynydd Penrhys due to the implementation of NFM solutions. This has the potential for beneficial effects across the full range of SEA Objectives, but particularly in respect of biodiversity, designated sites, soils, the water environment, townscape and visual amenity, the health and wellbeing of communities and the ability to minimise resource use and waste production. However, these benefits and their significance would only be confirmed through further more detailed assessment and design.

9.5 River Ffrwdwyllt Catchment

The Ffrwdwyllt Catchment is located in the south of the county borough and covers circa 2000ha. It is considered 9th in flood risk. The catchment is largely rurally with mixed land use ranging from farmland, natural deciduous woodland and managed forestry plantations. There are three main settlements within the catchment Bryn, which is located at the head of the river Ffrwdwyllt, Goytre, which is located at the end of the valley and Taibach which is located on the tidal plain, adjacent to Port Talbot town where the river discharges in to the Port Talbot dock. Of particular note in this area is Cwmwernderi reservoir, discussions on which are taking place in order to determine future use and how it affects the hydrology of the area.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 7: Asset Surveys

Measure 8: S21 Asset Register

Measure 9: Critical Flood Risk Asset Inspections

Measure 10: Critical Flood Risk Asset Maintenance and Repairs

Measure 12: Flood Risk Assessments

Measure 18: Partnership working with other RMAs

An overview of how these Measures are considered to perform against each SEA Objective is as follows:



SEA Objectives													
No.	1	2	3	4	5	6	7	8	9	10	11	12	13
7, 8, 9 & 10	+	+	0	-	+	+	+	+	+	+	++	+	+
12	0	0	0	0	0	0	0	0	0	0	0	0	0
18	+	+	+	+	+	+	++	+	+	+	++	+	+

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects, though for the most part these would be slight and related to maintenance and repair and partnership working with other organisations. It is also important to note that maintenance / refurbishment does risk some adverse effects, particularly relating to the potential to cause pollution, though it is anticipated these could be well managed.

The following Actions have been noted for this Catchment:

Table 9-4 - Actions proposed for the River Ffrwdwylt Catchment

Action	Would this Action result in likely significant environmental effects?
Maintain, inspect and cleanse two (2) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.
Continue to Liaise with CUL_0741 (Bryn Community Hall) private owner to maintain culvert intake	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning. Complications could arise in this location due to the need to liaise with a private owner to maintain the culvert intake, though it is considered that ultimately good management should ensure no significant adverse effects occur.
Assess Commercial Road rear lane Surface Water Flood Risk	No – it is understood that this location has potential for the River Ffrwdwylt is noted to spill out of bank at Taibach memorial park and upstream of the river bridge at Commercial Road. This Action is in line with Measure 7 which will undertake asset surveys and Measure 18, which encourages partnership working with other organisations. It is considered that should flood risk be identified and understood, this would help to realise a range of beneficial effects through sharing of information and resources.
Assess Nant Cwm Y Garn ordinary watercourse flood risk	No – it is known that flooding occurs from this small ordinary watercourses in Goytre, but this Action is in line with with Measure 7 which will undertake asset surveys and Measure 18, which encourages partnership working with other organisations. It is considered that should

Action	Would this Action result in likely significant environmental effects?
Assess Cwm Ffairty ordinary watercourse flood risk	flood risk be identified and understood, this would help to realise a range of beneficial effects through sharing of information and resources. No – it is known that flooding occurs from this small ordinary watercourses in Goytre, but this Action is in line with with Measure 7 which will undertake asset surveys and Measure 18, which encourages partnership working with other organisations. It is considered that should flood risk be identified and understood, this would help to realise a range of beneficial effects through sharing of information and resources.
Liaise with NRW on Taibach Fluvial flood risk	No – liaison with NRW is in line with Measure 18, which encourages partnership working. It is considered that should flood risk be identified and understood, this would help to realise a range of beneficial effects through sharing of information and resources.

Overall, it is considered that the Measures and Actions proposed for the River Corrwg Catchment would not result in any significant environmental effects. For the most part, further assessment would be required, along with liaison with partner organisations and this could allow a series of beneficial opportunities to be realised. It is considered any adverse effects arising are likely to be slight and could be adequately mitigated through good planning and construction techniques. See Chapter 10 for further information on mitigation.

9.6 River Kenfig Catchment

The River Kenfig is considered 5th in flood risk. Kenfig’s topography and landscape differs from the mountainous catchments of the Afan and Ffrwdwyllt to the north, as it is predominantly characterised by the flat tidal and fluvial plains that borders the sea. Kenfig Dune system (Kenfig Burrows) can be found to the south west of the catchment and is one of the largest and most ecologically important sites in Wales. This length of coastline stretches from the mouth of the River Kenfig to the Port Talbot docks and has been designated as a ‘Hold the line’ frontage

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

- Measure 5: Natural Flood Management (NFM) and Nature Based Solutions (NBS)
- Measure 6: Environmental and Biodiversity Enhancements
- Measure 7: Asset Surveys
- Measure 8: S21 Asset Register
- Measure 9: Critical Flood Risk Asset Inspections
- Measure 10: Critical Flood Risk Asset Maintenance and Repairs
- Measure 12: Flood Risk Assessments
- Measure 14: Feasibility Studies

An overview of how these Measures are considered to perform against each SEA Objective is as follows:



SEA Objectives													
No.	1	2	3	4	5	6	7	8	9	10	11	12	13
5 & 6	+++	+++	++	+++	+	+	+	+	++	+	++	++	+
7, 8, 9 & 10	+	+	0	-	+	+	+	+	+	+	++	+	+
12 & 14	0	0	0	0	0	0	0	0	0	0	0	0	0

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects. Of particular note are Measures 5 and 6 which relate to Natural Flood Management and Nature Based Solutions, as well as general environmental and biodiversity enhancement. Slight adverse effects are possible during refurbishment and maintenance, mainly through the risk of a pollution incident occurring, though it is considered these can be well managed.

The following Actions have been noted for this Catchment:

Table 9-5 - Actions proposed for River Kenfig Catchment

Action	Would this Action result in likely significant environmental effects?
Undertake Feasibility Study at Margam (Arnallt Brook)	No – this Action is largely a desk based study to determine feasibility of taking flood protection measures and is reflective of Measure 14. These measures were considered to be neutral for the purposes of this SEA, though they are nevertheless considered to be a vital part of the overall approach to ensuring flood protection can be achieved, while still protecting people and the environment. Note that as it is understood structures in this area are privately owned and this could add complication to ensuring no adverse environmental effects occur should work proceed in the future.
Undertake Feasibility Study at Ten Acre Wood, Margam	No – this Action is largely a desk based study to determine feasibility of taking flood protection measures and is reflective of Measure 14. These measures were considered to be neutral for the purposes of this SEA, though they are nevertheless considered to be a vital part of the overall approach to ensuring flood protection can be achieved, while still protecting people and the environment.
Map, inspect and maintain Drainage Apparatus at Prince Street, Margam	Uncertain – while mapping and inspection would help to understand issues in the area, maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.
Assess surface water flood risk at Prince Street	No – it is known that at Prince Street, surface water ponding has been reported in the past as the area is a known low spot in the village. This Action is in line with Measures 7 and 12 which will undertake asset surveys and to gather further information and fully understand the issues

Action	Would this Action result in likely significant environmental effects?
Assess ordinary water course flood risk at Coed Hirwaun	around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.
Maintain, inspect and cleanse five (5) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.
Continue to inspect the coastline and Liaise with Tata on responsibility's to 'Hold the line'	No – Liaison with other organisations is in line with Measures Measure 18, which encourages partnership working with other organisations. It is considered that should flood risk be identified and understood, this would help to realise a range of beneficial effects through sharing of information and resources. However, in this instance liaison with a private organisation could lead to difficulties that would require effective management. Note also that should this inspection work lead to maintenance and refurbishment this could be anticipated to have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

Overall it is considered that the Measures and Actions proposed for the River Kenfig will not have significant adverse environmental effects, with the potential for significant beneficial effects to be realised. It is noted that in this catchment there are a number of private bodies that would require close liaison with. While this adds a layer of complication in ensuring that no significant adverse effects occur, it is considered that these can be well managed through existing protocols and powers.

9.7 Neath Vale Catchment

The Neath Vale Catchment is the largest in the county borough at circa 7500 ha and covers the upper most section of the River Neath within NPTCBC. It is considered 3rd in Flood Risk. Neath Vale is a typical glaciated valley characterised with a wide valley floor and bordered by steep hillsides in a U shape. On the north side of the vale the hillside is dominated by the managed conifer plantations of Rheola forestry, while, on the southern hillside are mixed farmland, natural deciduous and coniferous plantations, as well as open moorland.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 5: Natural Flood Management (NFM) and Nature Based Solutions (NBS)



- Measure 6: Environmental and Biodiversity Enhancements
- Measure 7: Asset Surveys
- Measure 8: S21 Asset Register
- Measure 9: Critical Flood Risk Asset Inspections
- Measure 10: Critical Flood Risk Asset Maintenance and Repairs
- Measure 11: Construction of flood alleviation schemes
- Measure 12: Flood Risk Assessments
- Measure 14: Feasibility Studies
- Measure 15: Business Case Development
- Measure 18: Partnership working with other RMAs

An overview of how these Measures are considered to perform against each SEA Objective is as follows:

SEA Objectives													
No.	1	2	3	4	5	6	7	8	9	10	11	12	13
5 & 6	+++	+++	++	+++	+	+	+	+	++	+	++	++	+
7 - 10	+	+	0	-	+	+	+	+	+	+	++	+	+
11	+	-	+	-	+/-	-	-	--	++	+/-	+/-	+/-	+
12-15	0	0	0	0	0	0	0	0	0	0	0	0	0
18	+	+	+	+	+	+	+	++	+	+	+	++	+

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects. Of particular note are Measures 5 and 6 which relate to Natural Flood Management and Nature Based Solutions, as well as general environmental and biodiversity enhancement. Other beneficial effects could be anticipated through partnership working with other organisations (Measure 18).

However, these Measures (particularly relating to Measure 11) also provide the potential for significant adverse effects. Hard engineered structures can have significant adverse effects, particularly during construction through issues such as a loss of biodiversity, or the amount of carbon emissions or embedded carbon they require to construct, though it is to be noted that they are very effective at protecting infrastructure from flooding and if well built, can last many decades. As part of a range of catchment wide management, they can have an important role at very specific locations e.g. to protect high worth assets, or assets of cultural importance and as such can be considered a key element to wider sustainable management. They are particularly beneficial to providing reassurance to people that their properties are well protected, or even provide the perception of protection. The benefits to physical and mental well-being from this protection, or perceived protection are significantly beneficial.

Other slight adverse effects are also possible during refurbishment and maintenance, mainly through the risk of a pollution incident occurring, though it is considered these can be well managed.

The following Actions have been noted for this Catchment:

Table 9-6 - Actions proposed for Neath Vale Catchment

Action	Would this Action result in likely significant environmental effects?
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Undertake Feasibility Study at Morfa Glas to include flood risk from watercourses and surface water.	No – this Action is largely a desk based study to determine feasibility of taking flood protection measures and is reflective of Measure 14. These measures were considered to be neutral for the purposes of this SEA, though they are nevertheless considered to be a vital part of the overall approach to ensuring flood protection can be achieved, while still protecting people and the environment.
Undertake Feasibility Study at High Street, Blaengwrach	No – this Action is largely a desk based study to determine feasibility of taking flood protection measures and is reflective of Measure 14. These measures were considered to be neutral for the purposes of this SEA, though they are nevertheless considered to be a vital part of the overall approach to ensuring flood protection can be achieved, while still protecting people and the environment.
Assess ordinary watercourse flood risk at Ynyslas Crescent	No – it is known that at this location small un-named ordinary watercourses are mapped to pose flood risk to a number of properties though the extent of this risk (if any) is not known. This Action is in line with Measures 7 and 12 and will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.
Assess ordinary watercourse flood risk at Neath Road, Resolven	No – it is known that at this location small un-named ordinary watercourses are mapped to pose flood risk to a number of properties though the extent of this risk (if any) is not known. This Action is in line with Measures 7 and 12 and will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.
Assess ordinary watercourse flood risk at Clyne	No – it is known that at this location small un-named ordinary watercourses are mapped to pose flood risk to a number of properties though the extent of this risk (if any) is not known. This Action is in line with Measures 7 and 12 and will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.
Maintain, inspect and cleanse eleven (11) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

Overall, it is considered that the Measures and Actions proposed for the Neath Vale Catchment would not result in any significant environmental effects. For the most part, further assessment would be required, along with liaison with partner organisations and this could allow a series of beneficial opportunities to be realised. It is considered any adverse effects arising are likely to be slight and could be adequately mitigated through good planning and construction techniques. See Chapter 10 for further information on mitigation.

Note that any scheme being developed in the fluvial, estuarine or coastal environment should undergo assessment in respect of implications for the WFD and the objectives of the RBMP. Any design should consider the findings of all such assessments.

9.8 Afon Pryddin Catchment

The Afon Pryddin is one of the smallest catchments in the county borough (circa 750 ha) and is one of the rivers that feed into the Neath Vale SFRA. It is considered to be 12th in flood risk. The channel is dotted with a number of large waterfalls as it flows down the river valley to Pontneddfechan. It is important to note that this catchment is only a small section of the much larger Afon Pryddin catchment that is situated across the two county councils. The only noteworthy tributary that feeds into the Afon Pryddin is the River Camnant and is the source of the only river flooding that occurs within this catchment and effects a small number of property's in Banwen.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 12: Flood Risk Assessments

An overview of how this Measure is considered to perform against each SEA Objective is as follows:

SEA Objectives													
No.	1	2	3	4	5	6	7	8	9	10	11	12	13
12	0	0	0	0	0	0	0	0	0	0	0	0	0

It can be seen from the above that the proposed measures (Flood Risk Assessments) for this Catchment are not anticipated to have any environmental effect in themselves. However, they are nevertheless considered to be a vital part of the overall approach to ensuring flood protection can be achieved, while still protecting people and the environment.

The following Actions have been noted for this Catchment:

Table 9-7 - Actions proposed for Afon Rryddin Catchment

Action	Would this Action result in likely significant environmental effects?
Continue to maintain and inspect the highway drainage system at Camnant Road	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.
Assess the ordinary watercourse and fluvial flood risk at Camnant Road	No – it is known from mapping that there is a flood risk at this location and while periodic flooding has occurred the extent of this risk is not fully known. This Action is in line with Measure 12 to undertake a Flood Risk Assessment to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.

Overall, it is considered that the Measures and Actions proposed for the Afon Pryddin Catchment would not result in any significant environmental effects. For the most part, further assessment would be required, along with liaison with partner organisations and this could allow a series of beneficial opportunities to be realised. It is considered any adverse effects arising are likely to be slight and could be adequately mitigated through good planning and construction techniques. See Chapter 10 for further information on mitigation.

9.9 River Dulais Catchment

The River Dulais is the largest tributary of the River Neath and is considered as 7th in flood risk ranking. The Dulais valley is a glaciated valley characterised with a typical U shaped valley and wide valley floor. The valley runs in a north east – south west direction, narrowing in the lower reaches as the river cuts a deep gorge into the landscape. Many large ordinary watercourses drain the Rheola forestry to the east and Mynydd Y Drum and Mynydd Y Marchywel to the north and west respectively, which ultimately discharge into the River Dulais. There are 2 large villages in the area situated on the valley floor, Crynant and Seven Sisters, and 2 smaller villages, Nant Y Cafn and Onllwyn. Although they are situated on the valley floor these settlements are away from the river Dulais flood plain.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 7: Asset Surveys

Measure 8: S21 Asset Register

Measure 9: Critical Flood Risk Asset Inspections

Measure 10: Critical Flood Risk Asset Maintenance and Repairs

Measure 12: Flood Risk Assessments

An overview of how these Measures are considered to perform against each SEA Objective is as follows:

		SEA Objectives												
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	
7 - 10	+	+	0	-	+	+	+	+	+	+	++	+	+	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects, though for the most part these would be slight and related to maintenance and repair. It is also important to note that maintenance / refurbishment does risk some adverse effects, particularly relating to the potential to cause pollution, though it is anticipated these could be well managed.

The following Actions have been noted for this Catchment:

Table 9-8 - Actions proposed for River Dulais Catchment

Action	Would this Action result in likely significant environmental effects?
Maintain and inspect drainage apparatus at Golwg Y Bryn ,Seven Sisters	Uncertain – these areas are known to be at risk of flooding and as such it is vital that any infrastructure is regularly inspected and effectively maintained. Maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that

Action	Would this Action result in likely significant environmental effects?
Assess the ordinary watercourse flood risk at Golwg Y Bryn, Seven Sisters	these could be mitigated through good construction practices and effective pollution planning. No - Golwg Y Bryn is a known flood location and is a low spot on the adopted carriageway. There is a known culverted watercourse that crosses this location that has blocked in the past, causing flooding to residents properties and the highway. This Action is in line with Measures 7 and 12 which will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.
Include Mary Street Intake on the Critical Flood Risk Asset Inspection Programme	No - Mary Street is also a well-known flood risk location and investment has been made into the drainage infrastructure in recent years. This Action will help ensure that any new infrastructure is inspected in line with Measure 9. Beneficial effects could ultimately be anticipated.
Assess the ordinary watercourse flood risk at High St and Church Rd, Seven Sisters	No – These areas are among those known locations at risk of up to and including a 1 in 100 year rainfall event. This Action is in line with Measures 7 and 12 which will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.
Maintain, inspect and cleanse five (5) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

Overall, it is considered that the Measures and Actions proposed for the River Dulais will not have significant adverse environmental effects, with the potential for significant beneficial effects to be realised. For the most part the Actions are likely to lead to further assessments, but there are also actions relating to maintenance and refurbishment. There is some potential for adverse effects, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

9.10 River Neath Catchment

The River Neath catchment is the most at risk in the Plan area, ranked first across all flood risk sources. This part of the Neath Catchment represents the lower part of the River Neath as the mouth of the river discharges into the sea at Swansea Bay. There are 2 large river tributaries, at Aberdulais where the River Dulais joins the River Neath, and at Neath Abbey where the River Clydach discharges out onto the Neath flood plain. The topography and landscape of the Neath SFRA is varied but is largely man made, as the river is constrained either side by large urban areas. The estuary is dominated by tidal flats, marshes and rivulets which are crossed by the major highways of the M4 and A48, and the county railway line.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 5: Natural Flood Management (NFM) and Nature Based Solutions (NBS)



- Measure 6: Environmental and Biodiversity Enhancements
- Measure 7: Asset Surveys
- Measure 8: S21 Asset Register
- Measure 9: Critical Flood Risk Asset Inspections
- Measure 10: Critical Flood Risk Asset Maintenance and Repairs
- Measure 11: Construction of flood alleviation schemes
- Measure 12: Flood Risk Assessments
- Measure 14: Feasibility Studies
- Measure 15: Business Case Development
- Measure 18: Partnership working with other RMAs

An overview of how these Measures are considered to perform against each SEA Objective is as follows:

SEA Objectives													
No.	1	2	3	4	5	6	7	8	9	10	11	12	13
5 & 6	+++	+++	++	+++	+	+	+	+	++	+	++	++	+
7-10	+	+	0	-	+	+	+	+	+	+	++	+	+
11	+	-	+	-	+/-	-	-	--	++	+/-	+/-	+/-	+
12-15	0	0	0	0	0	0	0	0	0	0	0	0	0
18	+	+	+	+	+	+	+	++	+	+	+	++	+

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects. Of particular note are Measures 5 and 6 which relate to Natural Flood Management and Nature Based Solutions, as well as general environmental and biodiversity enhancement. Other beneficial effects could be anticipated through partnership working with other organisations (Measure 18).

However, these Measures (particularly relating to Measure 11) also provide the potential for significant adverse effects. Hard engineered structures can have significant adverse effects, particularly during construction through issues such as a loss of biodiversity, or the amount of carbon emissions or embedded carbon they require to construct, though it is to be noted that they are very effective at protecting infrastructure from flooding and if well built, can last many decades. As part of a range of catchment wide management, they can have an important role at very specific locations e.g. to protect high worth assets, or assets of cultural importance and as such can be considered a key element to wider sustainable management. They are particularly beneficial to providing reassurance to people that their properties are well protected, or even provide the perception of protection. The benefits to physical and mental well-being from this protection, or perceived protection are significantly beneficial.

Other slight adverse effects are also possible during refurbishment and maintenance, mainly through the risk of a pollution incident occurring, though it is considered these can be well managed.

The following Actions have been noted for this Catchment:



Table 9-9 - Proposed Actions for River Neath

Action	Would this Action result in likely significant environmental effects?
Assist NRW with the development of Aberdulais FAS	No – this Action is the responsibility of NRW, who are the lead authority on this main river and as such is outside the scope of the LFRMSP. However, it is noted here as NPTCBC are acting as a consultee in support. This Action is in line with Measure 18 that seeks partnership working with other RMAs. This partnership working is anticipated to help realise beneficial effects.
Develop a FBC and Detailed Design for Cryddan Brook FAS	Uncertain –The project is currently on pause due to lack of funding following the completion of the Outline Business Case. As part of this work An Environmental Scoping Report – Options Appraisal and a Extended Phase 1 Habitat Survey was completed. Conclusions show one statutory designated site, namely Eaglesbush Valley LNR surrounds the mid-section of Cryddan Brook and five SINC sites lay within the survey area for the proposed Scheme. There is potential for Eaglesbush LNR and four of the SINC, namely Neath Port Talbot Watercourses SINC, The Waun, Cimla SINC, Neath Estuary SINC and Neath Canal SINC to be detrimentally impacted e.g., through de-vegetation works, degradation of habitat, pollution via surface run-off and dust from materials and machinery, and/or fuel spills. Further comprehensive surveys are detailed within the report which will need to be actioned. A detailed CEMP will need to be produced during further FBC and Construction phase of works. It is also important to note that a detailed WFD Assessment is being undertaken to inform development of this Scheme and findings will be incorporated as required.
Undertake Feasibility Study at Neath Town Centre to include flood risk from watercourses and surface water.	Uncertain - Current understanding of flood risk shows a significant risk in Neath Town Centre due to the location of a large watercourse (Gnoll Rbook). This brook is fed by a number of smaller tributaries and drains that convey water away from the large residential area of Cimla. The brook, like many in NPTCBC is very flashy in nature and can carry significant amounts of debris down the channel that is often the main cause of flooding to the area. The flood risk is known and is understood to break out of channel along Gnoll Drive before flowing into the nearby residential streets. It is from Gnoll Drive where the brook enters the town, with the upstream largely natural except for the lower Gnoll Park pond that breaks up the rivers flow. Downstream at Gnoll Drive the watercourse is culverted beneath Neath town centre via a large diameter pipe until it discharges into the River Neath at Parr Avenue. To mitigate against flood risk the LLFA has implemented a number of NFM projects in the catchment since 2021 that aim to reduce the amount of debris being carried downstream along with reducing the peak flow during rainfall events. Three further projects have been approved to be constructed in 2024 and 2025 that will further assist with mitigating the flood risk to the town centre. However, it is understood that a feasibility study into the flooding at Neath town centre will need to be carried out to quantify the benefits the NFM works have made to the flood risk and to further understand what is required to remove a large amount of residential and commercial property’s from flood extents up to a 1 in 100 year rainfall event. As such, further assessment work is required, which may lead to additional Actions being required. These would be subject to

Action	Would this Action result in likely significant environmental effects?
	the planning process, which will require further consideration of environmental issues, to help inform design.
Continue to develop a FBC and Detailed Design for Grandison Brook FAS	Uncertain – It is understood that the areas at risk from surface water flooding at Pant Yr Heol, Ynysymaerdy and Melyn Cryddan are being addressed through their respective FCERM Business case development projects, which includes Grandison Brook FAS. In this instance it is understood that the requirement for EIA was considered but was deemed not required through the Screening process. However, subsequent to that, further consultation with heritage bodies (Cadw) suggests that there may be heritage assets in the area (tramway / Brunel railway) and as such further consideration needs to be given to this and as such EIA may be required (along with other assessments). It is considered that all relevant issues are being addressed through the planning and consultation process and it is known that a CEMP has been developed to help address environmental issues. This has included some tree removal and bat surveys. While environmental issues are relatively constrained due to the urban location, it is known that consideration is also being made of how best to achieve biodiversity gain. It is also important to note that a detailed WFD Assessment is being undertaken to inform development of this Scheme and findings will be incorporated as required.
Maintain, inspect and cleanse twenty one (21) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.
Develop an additional maintenance rota, to inspect and cleanse surface water assets in high and medium Flood Risk Areas of Neath	Uncertain - maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.
Assess the ordinary watercourse and surface water flood risk at Afan Valley Road, Cimla	No – The residential area of Afan Valley Road, Cimla is not known as a flood risk area and no records exist to show previous flooding. This area will need further investigation to understand the existing drainage networks and mechanisms for flooding, before the FRAW maps representation can either be discounted or agreed upon. This Action is in line with Measures 7 and 12 which will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.
Assess the ordinary watercourse and surface water flood risk at Llantwit Road, Llantwit	No - The flood risk from surface water and small watercourses shown at Llantwit Road, Tonna is known to the authority with anecdotal evidence of past surface water flooding. Mapping however does not take into account the two large culverts that convey water under Llantwit and out to the river Neath, as well as serve the highway drainage network in the

Action	Would this Action result in likely significant environmental effects?
	<p>area. A modelling assessment is required to assess this and including the two large culverts at Ivy Avenue and Llantwit that cross this area to provide the LLFA with a true assessment of risk. This Action is in line with Measures 7 and 12 which will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.</p>
<p>Assess the ordinary watercourse and surface water flood risk at Heol Dyddwr, Tonna</p>	<p>No - The flood risk shown by mapping at Heol Dyddwr, Tonna is not known to the LLFA and little evidence exists that eludes to past flooding issues apart from minor localised ponding. The area is known to be in a low spot on the carriageway and to the rear of the properties a known brook passes behind the gardens. A full assessment of drainage apparatus should be undertaken in the area to represent the mechanisms of draining the highway, as well as an assessment of the culverts and open channels that convey the ordinary watercourse through the area of Tonna. Once this has been undertaken a new model can be built to show the true representation of risk that can further aid with investigations. This Action is in line with Measures 7 and 12 which will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.</p>
<p>Stanley Place FAS Construction</p>	<p>Stanley Place flood risk is well known and is well represented on the FRAW mapping. The location has been part of the WG FCERM programme for the last 2 years following a number of large overtopping events at the intake bay. The LLFA has progressed the project through the various phases of business case development and construction started in summer 2024 (i.e. prior to this assessment). This project will protect 17 properties from a 1% AEP rainfall event and make it easier to cleanse and maintain the structures which fall under council ownership. This scheme has been progressed under permitted development powers and as such no EIA was required. Nevertheless, it is understood consideration has been made of environmental issues as part of the scheme development process. It is also important to note that a detailed WFD Assessment is being undertaken to inform development of this Scheme and findings will be incorporated as required.</p>
<p>Assess the ordinary watercourse and surface water flood risk at Ffrwd Vale, Neath</p>	<p>No - Ffrwd Vale has been subject to a number of flooding incidents over the last 10 years. On the occasions it has flooded the causes have been due to the lack of riparian maintenance of the brook at location where it passes through gardens. The LLFA maintain a critical flood risk asset adjacent to the footpath in the area however, this has not caused an issue and is regularly maintained. There are two small ordinary watercourses in the area that converge at Ffrwd Vale and a detailed assessment of the risk should be made and surface and sub-surface assets represented in a model to provide a true representation of the risk. This Action is in line with Measures 7 and 12 which will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.</p>
<p>Liaise with NRW on the development of a feasibility study for coastal flooding at</p>	<p>No – it is understood that drainage at these locations are subject to interaction with the tide, with studies underway to determine precise</p>



Action	Would this Action result in likely significant environmental effects?
Milland Road, Melyn and Pant Yr Heol, Briton Ferry	issues and how best to resolve these. Liaising with NRW is in line with Measure 18 that seeks partnership working with other RMAs. This partnership working is anticipated to help realise beneficial effects.
Continue to provide support and leadership to the Neath Estuary Group	No – providing support and leadership to this group is in line with Measure 18 that seeks partnership working with other RMAs. This partnership working is anticipated to help realise beneficial effects.
Continue to implement coastal monitoring of Crymlyn Burrows dune system (SMP2 Managed Re-alignment Policy Unit)	No – monitoring of the dune system will help to provide data to make informed future decisions in line with policy set out in ‘SMP2 Managed re-alignment’. Consideration of the effects of such realignment is outside the scope of this SEA.
Liaise with NWR and DCWW at Briton Ferry underpass at Church Street and Regent Street West	No - Liaising with NRW is in line with Measure 18 that seeks partnership working with other RMAs. This partnership working is anticipated to help realise beneficial effects.

Overall, it is considered that for the most part, the Measures and Actions proposed for the River Neath would not result in significant environmental effects. Many of the proposed Actions are concerned with liaising with other organisations such as NRW, or undertaking further assessment work in order to understand flood risk in particular locations and how best to address this risk. It is the case that some of this assessment work could lead to further assessment, or lead to construction activities that could ultimately have environmental effects, but this is not known and cannot be assessed at this point. Note that any scheme being developed in the fluvial, estuarine or coastal environment should undergo assessment in respect of implications for the WFD and the objectives of the RBMP. Any design should consider the findings of all such assessments.

There are a number of Actions noted which involve the development of Flood Alleviation Schemes. It is understood that these are in progress, with the relevant business case and planning considerations made, or in the process of being made. This has included the consideration of environmental issues where required and the development of Construction Environmental Management Plans. In addition, consideration was made of issues such as community adaptation (recreation or amenity gain), along with liaison with statutory bodies and this has helped inform design. Biodiversity gain has also been considered though this is more difficult to achieve in the relatively constrained urban environment.

9.11 River Clydach Catchment

The River Clydach catchment varies from the urbanised areas of Skewen and Neath Abbey to the south to the rural villages, forestry's and grazing land on the hillsides of Mynydd Marchywel to the north. The source of the River Clydach can be found on the hillside above the small village of Cilybebyll on the western hillside of Mynydd Marchywel. This catchment is ranked 6th in respect of flood risk. Due to its steepness the small ordinary watercourses that lead down from this hillside are known to very flashy which can be difficult to manage during periods of heavy intense rainfall. The rivers within this catchment are largely natural but some elements are heavily engineered.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

- Measure 6: Environmental and Biodiversity Enhancements
- Measure 7: Asset Surveys
- Measure 8: S21 Asset Register



- Measure 9: Critical Flood Risk Asset Inspections
- Measure 10: Critical Flood Risk Asset Maintenance and Repairs
- Measure 11: Construction of flood alleviation schemes
- Measure 12: Flood Risk Assessments
- Measure 14: Feasibility Studies
- Measure 15: Business Case Development
- Measure 18: Partnership working with other RMAs

An overview of how these Measures are considered to perform against each SEA Objective is as follows:

No.	SEA Objectives												
	1	2	3	4	5	6	7	8	9	10	11	12	13
5 & 6	+++	+++	++	+++	+	+	+	+	++	+	++	++	+
7 - 10	+	+	0	-	+	+	+	+	+	+	++	+	+
11	+	-	+	-	+/-	-	-	--	++	+/-	+/-	+/-	+
12-15	0	0	0	0	0	0	0	0	0	0	0	0	0
18	+	+	+	+	+	+	+	++	+	+	+	++	+

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects. Of particular note is Measure 6 which relates to general environmental and biodiversity enhancement. Other beneficial effects could be anticipated through partnership working with other organisations (Measure 18).

However, these Measures (particularly relating to Measure 11) also provide the potential for significant adverse effects. Hard engineered structures can have significant adverse effects, particularly during construction through issues such as a loss of biodiversity, or the amount of carbon emissions or embedded carbon they require to construct, though it is to be noted that they are very effective at protecting infrastructure from flooding and if well built, can last many decades. As part of a range of catchment wide management, they can have an important role at very specific locations e.g. to protect high worth assets, or assets of cultural importance and as such can be considered a key element to wider sustainable management. They are particularly beneficial to providing reassurance to people that their properties are well protected, or even provide the perception of protection. The benefits to physical and mental well-being from this protection, or perceived protection are significantly beneficial.

Other slight adverse effects are also possible during refurbishment and maintenance, mainly through the risk of a pollution incident occurring, though it is considered these can be well managed.

The following Actions have been noted for this Catchment:

Table 9-10 - Proposed Actions for River Clydach Catchment

Action	Would this Action result in likely significant environmental effects?
Periodically carry out a CCTV survey of the culverted watercourse at Park Avenue, Skewen	No – records show that there is periodic flooding at this location due to surface water and small watercourses. Carrying out a CCTV survey is not anticipated to have significant effect and is in line with Measure 7.



Action	Would this Action result in likely significant environmental effects?
Carry out an asset survey at Park Avenue, Skewen	Depending on findings it is possible further assessment and future work could be required.
Develop the Detailed Design and Construction of Skewen FAS	The locations of Dynevor Road, Caenant Terrace, White Gates Court and Old Road, Skewen all form part of the FCERM Skewen FAS which has been in development for the last 5 years. A large ordinary watercourse flows through the centre of Skewen that is mostly culverted and is the main cause of flood risk in the area. The project is in the final stages of FBC and detailed design and it is anticipated that with continual grant funding this project will start construction in financial year 25-26. It is known that no formal EIA was required for this scheme, though a range of environmental assessments have taken place. For example, consideration has been made of potential impacts on a local canal and a Scheduled Monument (Neath Abbey) where indirect effects were anticipated. It is also understood that a CEMP has also been developed for this Scheme. A WFD assessment has also been completed and this concluded that based on the information available and considering the control measures which will be employed throughout the works, the Scheme will not result in any deterioration to the supporting elements of any of the water bodies. Therefore, the Scheme will not result in deterioration to any WFD quality elements of the Tennant Canal, Clydach – headwaters to confluence with River and Neath Estuary waterbodies and is deemed to be compliant.
Assess the ordinary watercourse and surface water flood risk at Green Hedges, Rhos	No - the flood risk shown at Green Hedges is unknown and no reports of flooding or nuisance ponding are held on record. The area would need to be investigated and pipework mapped out in order to build a new localised model to represent the true flood risk at this location. This Action is anticipated to be largely desk based and in line with Measures 7 and 12
Maintain, inspect and cleanse five (5) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

Overall, it is considered that the Measures and Actions proposed for the Neath Vale Catchment would not result in any significant environmental effects. For the most part, further assessment would be required, along with liaison with partner organisations and this could allow a series of beneficial opportunities to be realised. It is considered any adverse effects arising are likely to be slight and could be adequately mitigated through good planning and construction techniques. See Chapter 10 for further information on mitigation.



It is understood that one Flood Alleviation Scheme is proposed for this catchment (Skewen FAS). This scheme has progressed through the business case and planning processes and no formal EIA was required. Nevertheless, consideration was made of environmental issues as well as issues such as community adaptation (recreation or amenity gain), along with liaison with statutory bodies and this has helped inform design. Biodiversity gain has also been considered though this is more difficult to achieve in the relatively constrained urban environment.

Note that any scheme being developed in the fluvial, estuarine or coastal environment should undergo assessment in respect of implications for the WFD and the objectives of the RBMP. Any design should consider the findings of all such assessments.

9.12 River Tawe Catchment

The River Tawe is one of the largest rivers that flows through the county and is considered 4th in terms of flood risk. The river flows along the base of a glaciated valley, with a typical wide valley floor, bordered by steep hillsides. The ground is free draining. The valley floor and hillsides are dotted with many settlements including, Ystalyfera, Godre'r Graig, Cilmaengwyn, Ynysmeudwy, Alltwen, Trebanos, Rhos and the 3rd largest town in the county borough, Pontardawe. The valley floor adjacent to the river is farmed by pastoral grazing and the hillsides above are dominated by open moorland, upland grazing and mixed woodland.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 7: Asset Surveys

Measure 8: S21 Asset Register

Measure 9: Critical Flood Risk Asset Inspections

Measure 10: Critical Flood Risk Asset Maintenance and Repairs

Measure 12: Flood Risk Assessments

Measure 14: Feasibility Studies

An overview of how these Measures are considered to perform against each SEA Objective is as follows:

SEA Objectives													
No.	1	2	3	4	5	6	7	8	9	10	11	12	13
7 - 10	+	+	0	-	+	+	+	+	+	+	++	+	+
12 & 14	0	0	0	0	0	0	0	0	0	0	0	0	0

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects, though these would be slight for the most part and related to maintenance and repair. It is also important to note that maintenance / refurbishment does risk some adverse effects, particularly relating to the potential to cause pollution, though it is anticipated these could be well managed.

The following Actions have been noted for this Catchment:

Table 9-11 - Proposed Actions for River Tawe Catchment



Action	Would this Action result in likely significant environmental effects?
Assess the Ynysmeudwy Canal culvert capacity	No – mapping appears to show this culvert that conveys the river beneath the canal does not have capacity during a high and medium risk return period. This Action is largely desk based in line with Measure 7 and may lead to further assessment such as FRA and potentially future work.
Assess the canal flood risk at Alloy Industrial Estate	No - the north bank of the river is raised to protect the Alloy Industrial Estate where 20+ commercial properties are at risk from fluvial flooding. Although these properties are protected from river flooding they are at risk of flooding from the Swansea canal. Records show this area flooded from a canal breach in in 1998, which caused flooding to 30 residential properties, a health centre and numerous businesses in the industrial estate. This Action would largely be desk based in line with Measure 7 and would seek to establish what can be done to mitigate against the risk of flooding again.
Assess the surface water flood risk at Deeley Road, Ystalyfera	No – this is one of a number of locations which are considered at risk of flooding up to a 1 in 100 year rainfall event. This Action is in line with Measure 7 and would seek to understand this risk further. Further assessment and or action may be required in future.
Update FRAW map with new modelling information at Varteg Road, Ystalyfera	No – this is one of a number of locations which are considered at risk of flooding up to a 1 in 100 year rainfall event. This Action is in line with Measure 7 and would seek to understand this risk further. Further assessment and or action may be required in future.
Assess the surface water flood risk at Graig Newydd, Godre'r Graig	No – this is one of a number of locations which are considered at risk of flooding up to a 1 in 100 year rainfall event. This Action is in line with Measure 7 and would seek to understand this risk further. Further assessment and or action may be required in future.
Manage and Maintain Surface Water Pumping Stations under NPTCBC ownership at Llys Harry, Godre'r Graig	No – these are existing assets which pumps the surface water from the Graig Newydd estate up and out into the River Tawe. It is vital these are maintained to ensure that flood protection remains robust. This Action is in line with Measure 10. Although Measure 10 is associated with a risk of pollution, in this instance this is considered less as it is anticipated the pumps are within a contained / controlled structure. Nevertheless, precaution should be taken to ensure no pollution event can occur during maintenance.
Map and inform residents of the flood risk at Heol Y Felin	No – these properties are lower than the surrounding highway and footways and are drained via the private roof and yard network which is owned by the individual residents. It is the responsibility of the residents to ensure their drainage apparatus is cleansed effectively to deal with rainfall. This is outside the scope of NPTBC and as such outside the scope of this assessment. Nevertheless, this Action is in line with a range of measures to ensure flood risk is understood.
Assess the ordinary watercourse flood risk at Gellinudd	No – this location is at risk of flooding from two small ordinary watercourses that flow down from the higher ground to the south east of the village. This Action, in line with Measure 7 would help to understand the extent of flood risk and whether further Actions are required.
Maintain, inspect and cleanse eighteen (18) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a

Action	Would this Action result in likely significant environmental effects?
	pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

Overall, it is considered that the Measures and Actions proposed for the River Tawe will not have significant adverse environmental effects. For the most part the Actions are likely to lead to further assessments, but there are also actions relating to maintenance and refurbishment. There is some potential for adverse effects, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

9.13 River Twrch Catchment

The River Twrch Catchment is one of the smallest in the Plan area (612 Ha) and is the one of the most northerly areas of the county, though it is part of a much more extensive catchment that stretches into other plan areas. It is considered to be 14th in terms of flood risk. Included are the village of Cwmllynfell, and the surrounding land is characterised with open moorland and mixed deciduous woodland. The area is largely rural and in its lowest reaches bisects the village of Ystalyfera before reaching the confluence with the River Tawe. There are only two critical flood risk assets which indicates the low flood risk posed to residential and commercial properties in the area. These structures are located adjacent to the highway on Rhiwfawr Road and the A4068 and actually protect the highway from periodic nuisance flooding appose to property's.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 7: Asset Surveys

Measure 8: S21 Asset Register

Measure 9: Critical Flood Risk Asset Inspections

Measure 10: Critical Flood Risk Asset Maintenance and Repairs

Measure 12: Flood Risk Assessments

An overview of how these Measures are considered to perform against each SEA Objective is as follows:

No.	SEA Objectives												
	1	2	3	4	5	6	7	8	9	10	11	12	13
7 - 10	+	+	0	-	+	+	+	+	+	+	++	+	+
12-15	0	0	0	0	0	0	0	0	0	0	0	0	0

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects, though for the most part these would be slight and related to maintenance and repair. It is also important to note that maintenance / refurbishment does risk some adverse effects, particularly relating to the potential to cause pollution, though it is anticipated these could be well managed.

The following Actions have been noted for this Catchment:

Table 9-12 - Actions Proposed for River Twrch Catchment

Action	Would this Action result in likely significant environmental effects?
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Maintain, inspect and cleanse two (2) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.
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Overall it is considered that the Measures and Actions proposed for the River Twrch are small in scale and would offer some opportunities for beneficial effects. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

9.14 River Clydach (Lower) Catchment

This catchment is only partially within the Plan area and is part of a much wider area that is the subject of other flood plans. This is considered to be 15th in respect of Flood Risk in this Plan area.

No flood risk has been identified for this area. As such no Measures or Actions are proposed.

9.15 River Clydach (Upper) Catchment

The River Clydach (Upper) is a tributary of the River Tawe that is sourced off the hillsides of Bryn Mawr and Mynydd Y Garth. It is fed by another large ordinary watercourse, the River Egel from the North East which meets the River Clydach (Upper) at Rhyd Y Fro. From there the two rivers converge and flow down to the town of Pontardawe in a southward direction where it discharges into the River Tawe. The River Clydach (upper) is a largely rural catchment until its lower reaches where it flows through the village of Rhyd Y Fro and the town of Pontardawe.

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 7: Asset Surveys

Measure 8: S21 Asset Register

Measure 9: Critical Flood Risk Asset Inspections

Measure 10: Critical Flood Risk Asset Maintenance and Repairs

Measure 12: Flood Risk Assessments

An overview of how these Measures are considered to perform against each SEA Objective is as follows:

SEA Objectives														
No.	1	2	3	4	5	6	7	8	9	10	11	12	13	
7 - 10	+	+	0	-	+	+	+	+	+	+	++	+	+	
12	0	0	0	0	0	0	0	0	0	0	0	0	0	



It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects, though for the most part these would be slight and related to maintenance and repair. It is also important to note that maintenance / refurbishment does risk some adverse effects, particularly relating to the potential to cause pollution, though it is anticipated these could be well managed.

The following Actions have been noted for this Catchment:

Table 9-13 - Proposed Actions for the River Clydach (Upper)

Action	Would this Action result in likely significant environmental effects?
Maintain, inspect and cleanse two (2) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

Overall it is considered that the Measures and Actions proposed for the River Clydach (Upper) are small in scale and would offer some opportunities for beneficial effects. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.

9.16 River Amman Catchment

The Amman SFRA is the most northerly in the county borough, bordered by Carmarthenshire CC to the north and west. This is considered to be ranked 10th in terms of flood risk. There are four villages in this area, Gwaun Cae Gurwen, Cwmgors, Lower Brynamman and Tairgwaith. The area to the east is largely rural, characterised with mostly open moorland and upland grazing land. To the east and centre of the area lays the remains of the large coal open cast workings known as East Pit, which used to dominate the landscape

It is considered that the following Measures would be implemented in order to effectively manage flood risk:

Measure 5: Natural Flood Management (NFM) and Nature Based Solutions (NBS)

Measure 6: Environmental and Biodiversity Enhancements

Measure 7: Asset Surveys

Measure 8: S21 Asset Register

Measure 9: Critical Flood Risk Asset Inspections

Measure 10: Critical Flood Risk Asset Maintenance and Repairs

Measure 12: Flood Risk Assessments

Measure 14: Feasibility Studies

An overview of how these Measures are considered to perform against each SEA Objective is as follows:



SEA Objectives													
No.	1	2	3	4	5	6	7	8	9	10	11	12	13
5 & 6	+++	+++	++	+++	+	+	+	+	++	+	++	++	+
7-10	+	+	0	-	+	+	+	+	+	+	++	+	+
12-14	0	0	0	0	0	0	0	0	0	0	0	0	0

It can be seen from the above that the proposed measures for this Catchment provide for an approach that would likely result in beneficial environmental effects. Of particular note are Measures 5 and 6 which relate to Natural Flood Management and Nature Based Solutions, as well as general environmental and biodiversity enhancement. Slight adverse effects are possible during refurbishment and maintenance, mainly through the risk of a pollution incident occurring, though it is considered these can be well managed.

The following Actions have been noted for this Catchment:

Table 9-14 - Actions proposed for River Amman

Action	Would this Action result in likely significant environmental effects?
Maintain, inspect and cleanse seven (7) Critical Flood Risk Assets	Uncertain – maintenance and refurbishment would have a range of beneficial effects across most SEA Objectives (see consideration of Measure 10) though these would be for the most part slight. There is some potential for adverse effects though, for example through a pollution incident during refurbishment works. It is considered though that these could be mitigated through good construction practices and effective pollution planning.
Undertake Feasibility Study Nant Hir FAS	No – it is anticipated that properties in this area are at high and medium risk. This Action is largely a desk based study to determine feasibility of taking flood protection measures and is reflective of Measure 14. These measures were considered to be neutral for the purposes of this SEA, though they are nevertheless considered to be a vital part of the overall approach to ensuring flood protection can be achieved, while still protecting people and the environment.
Assess the surface water flood risk at Maes Y Glyn, Lower Brynamman	No – this location has been shown to be susceptible to surface water flooding and it is known there are culverted ordinary watercourses and associated highway drainage networks. However, it is not known if mapping is accurate and the extent of flood risk. This Action is in line with Measures 7 and 12 and will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.
Assess the surface water flood risk at Quarry Place, GCG	No – this location has been shown to be susceptible to surface water flooding and it is known there are culverted ordinary watercourses and associated highway drainage networks. However, it is not known if mapping is accurate and the extent of flood risk. This Action is in line with Measures 7 and 12 and will undertake asset surveys and to gather further information and fully understand the issues around the flood risk. Depending on findings, further assessment may be required, with potential works in the future.



Overall, it is considered that the Measures and Actions proposed for the River Amman would not result in any significant environmental effects. For the most part, further assessment would be required. It is considered any adverse effects arising are likely to be slight and could be adequately mitigated through good planning and construction techniques. See Chapter 10 for further information on mitigation.



10. Mitigation

10.1 Introduction

The term mitigation encompasses any approach that is aimed at preventing, reducing or offsetting any significant adverse environmental effects that has been identified. In practice, a range of measures applying one or more of these approaches is likely to be considered in mitigating any significant adverse effects predicted as a result of implementing the Strategy. In addition, it is also important to consider measures aimed at enhancing positive effects. All such measures are generally referred to as mitigation measures.

In the first instance, the emphasis should be on proactive avoidance of adverse effects. Only once alternative options or approaches to avoiding an effect have been examined, should mitigation then examine ways of reducing the scale / importance of the effect.

Mitigation can take a wide range of forms, including:

- Refining intervention measures in order to improve the likelihood of positive effects and to minimise adverse effects;
- Technical measures (such as setting guidelines) to be applied during the implementation phase;
- Identifying issues to be addressed in project assessment, such as Environmental Impact Assessment and the development of Environmental Management Plans for certain projects or types of project;
- Proposals for changing other plans and programmes; and
- Contingency arrangements for dealing with possible adverse effects.

It is to be noted that as the Strategy is high level in its approach, full detail of mitigation measures cannot be known at this stage e.g. precise locations of options, as well as approach to or timing of construction is not yet known. As such, the mitigation outlined is high level and full mitigation will need to be considered in detail through the design and planning process.

10.2 Mitigation approaches applied through the SEA

Project level assessment will be required for specific interventions when more detail (including in some instances location, design and construction techniques) is available. It is suggested that the assessments undertaken at this stage would inform design iterations going forward. It is however possible at this stage to outline types of mitigation approaches that could be implemented in order to minimise the potential for significant adverse effects identified.

Table 10-1 - Overview of Mitigation

SEA Topic	Overview of Mitigation
Biodiversity	<p>Particular consideration needs to be made to protection measures in relation to any scheme which may impact directly, or indirectly, on any site designated for nature conservation purposes, or any priority habitat. Opportunities to enhance biodiversity and green infrastructure exist for some options. For example, some scheme can allow for planting and this should be undertaken using native species of local provenance.</p> <p>Properly planned maintenance schemes can also enhance biodiversity, for example from the active control of invasive species. Mitigation to be implemented during construction may include consideration in Construction Environmental Management Plans (CEMPs), ecological surveys</p>



SEA Topic	Overview of Mitigation
	and best practice methods to minimise loss and disturbance. Opportunities should be taken to remove / control invasive species.
Soil	Protection of soil resources, particularly those of higher quality / areas of better agricultural lands should always be considered. If areas of good quality soil cannot be avoided, care should be taken during construction to store topsoil for later reuse – either on site as landscaping or further afield. Opportunities should also be taken to utilise areas of previously developed land and to remediate contaminated land when possible. Opportunities should be taken to remove / control invasive species.
Water	<p>Protection and good pollution control measures (including the use of spill kits, silt curtains, sediment mats etc.) are to be utilised during both construction and operation of the options in the Strategy to protect the water environment. Emergency measures for dealing with pollution incidents should be developed for the construction phase of each Option. Opportunities should be taken to remove / control invasive species.</p> <p>Note that any scheme being developed in the fluvial, estuarine or coastal environment should undergo assessment in respect of implications for the WFD and the objectives of the RBMP. Any design should consider the findings of all such assessments.</p>
Air	Minimising air emissions including pollutants and noise that affect human health and biodiversity should be a consideration. For the flood protection measures this will generally be of importance during the construction phase rather than the operation phase. The impact of air pollution and noise emissions during post flood recovery should also not be underestimated and measures should be taken to reduce these as much as possible. This can be through good working practices, use of well maintained machinery, electric pumps and generators (rather than diesel) and so on. The implementation of mitigation measures may require working with partners to support their delivery.
Greenhouse Gas Emissions	Reducing direct and indirect emissions of all greenhouse gases, including carbon dioxide, during construction and operation should be considered where possible. There may be opportunity to create new carbon sinks / removals through natural sequestration within the Strategy. The carbon footprint can be readily measured at construction and operation by use of an appropriate carbon calculator.
Landscape	Consideration should be given to enhancing landscape, townscape or visual amenity. This could include via planting schemes (Ideally using native species of local provenance), or by consideration of local vernacular architecture. Note that regular maintenance of assets can help to mitigate against unsightly aspects such as graffiti or poor general appearance.
Cultural Heritage	<p>Consideration should be given to opportunities for enhancement of known features of industrial & cultural heritage significance during the design stage of any scheme being developed from the Strategy.</p> <p>The risk of potential impacts on buried archaeology would be addressed and avoided where possible during the design stage through field work investigations. If the risk cannot be fully designed out, then excavation and recording during the enabling works phase of a construction programme would mitigate and manage this risk. Consideration of unexpected heritage discovery should be given in Construction Environmental Management Plans (CEMPs) and there may be a potential need for archaeological watching brief during construction, however the preferred mitigation approach is to identify archaeology early and design out impacts or excavate and record prior to construction. This is likely to be completed as each project progresses through more detailed assessments such as Historic Environment Management Plans (HEMPs) and Environmental Impact Assessments.</p>

SEA Topic	Overview of Mitigation
Population and Human Health	Particular consideration needs to be made to protection measures in relation to any scheme which may impact directly, or indirectly on the health and wellbeing of the local community, including economic and social wellbeing. There should also be consideration to avoiding social impacts on Vulnerable Groups. Mitigation places a particular emphasis on open and factual communication with the local population, with communication channels to be 'low barrier' to ensure all groups can take part.
Material Assets	Consideration during design and construction of the schemes should be given to the waste hierarchy of prevention, reuse, recycling and disposal. All waste should be handled in accordance to applicable waste management legislation and the emphasis should be to minimise the volume of waste produced and the volume sent for disposal, unless it can be demonstrated that this is the best environmental outcome. Consideration should be given to the use of recycled materials in construction.

11. Cumulative, synergistic and indirect effects

11.1 Introduction

Under the SEA Regulations, there is a requirement to consider cumulative, synergistic and indirect effects of implementation of the LFRMSP. Secondary and indirect effects are effects that are not a direct result of the Plan, but which occur away from the original effect or as the result of a complex pathway. Cumulative effects arise where several proposals or elements individually may or may not have significant effect but in-combination have a significant effect due to spatial crowding or temporal overlap. Synergistic effects are when two or more effects act together to create an effect greater than the simple sum of the effects when acting alone.

Cumulative effects are difficult to accurately assess given the inherent uncertainties concerning future changes to baseline environmental conditions, future population and economic growth and deliverability of some developments being brought forward. It will be necessary to keep under review these factors as the LFRMSP is implemented. Project level assessment (including EIA and HRA) act as suitable assessment mechanisms for which to more accurately identify and mitigate against potential cumulative effects, particularly those that could be significant.

The cumulative effects assessment considered Nationally Significant Infrastructure Projects (NSIPs), and a review of Local Development Plans (LDPs) relevant to the LFRMSP.

It is important to note that further investigation will be required as further detail about the proposed options emerge, including precise construction timeline.

11.2 Likely effects

SEA Objectives which have the potential for cumulative, synergistic and indirect effects have been identified from the analysis of plans and programmes, the baseline data, consultation responses and an examination of the identified key issues. Cumulative, synergistic and indirect effects have also been considered during the SEA process.

11.2.1 In Plan effects

The results of the direct effects of the LFRMSP are discussed in Chapter 8 and 9. It is considered that the Measures and Actions can interact across environmental issues as shown in Table 11-1.

Table 11-1 - In plan cumulative effects

Topic	Causes	Significance
Cumulative effect on minimising the risk of and from flooding	Overall the measures within the LFRMSP seek to reduce the risk of flooding. Should the majority of the Measures and Actions be implemented and recommendations taken into account, it is likely that the risk from flooding to people and property, including infrastructure and heritage assets should reduce. The risk of/from flooding should also reduce, through the implementation of measures such as SuDS, NFM, NBS, liaison with other organisations, regular maintenance and other measures taken in collaboration with other plans and strategies.	Potential medium to long term significant benefits as measures are implemented.
Cumulative effect on Air pollution	The measures are anticipated to lead to the protection of assets from flooding and reducing the need for clean up and recovery. This would	Potential beneficial



	reduce the need for pumping, use of generators, use of de-humidifiers etc., with consequent benefits for air pollution in very local areas. NFM and general environmental and biodiversity enhancement may offer opportunities for air quality improvements (by removing pollutants) in very local areas – effects would be slight.	effects but considered slight.
Cumulative effect on Biodiversity	The measures create the potential for long term positive effects through the active management of flood risk, whilst enhancing assets in the natural environment (through NFM and NBS, as well as general environmental and biodiversity enhancement). The measures should ensure that flood risk management measures do not lead to the loss of biodiversity assets and opportunities are taken to increase biodiversity. The effect should be enhanced through the particular importance placed on designated sites and protected habitats, as identified locally.	Potential medium to long term significant benefits as measures are implemented.
Cumulative effect on protecting soils	Overall, the LFRMSP should enable a reduction in overall flood risk. Taken together, the Measures and Actions should therefore lead to an overall reduction in surface water run off which, in turn, should lead to an increased resilience to degradation. Preventing floods could also reduce the potential for pollution deposition on soils.	Beneficial effects in the medium to long term as measures are implemented.
Cumulative effects on improving water quantity, quality and flow	Overall the measures contained within the LFRMSP seek to reduce flood risk, which may act as a pathway for pollutants to enter the water environment. The promotion of SuDS will contribute to a reduction in pollutants entering the water environment. Note that there is a potential for cumulative adverse effects should schemes be constructed, or maintained on the same waterbody at the same time. Consideration would also need made of implications for RBMP Objectives. However, it is considered that such effects could be well managed through good construction techniques and adherence to pollution control measures.	Potentially significant beneficial effects over the medium to longer term as measures are implemented.
Cumulative effects on landscape, townscape	Overall the Measures and Actions contained within the LFRMSP are anticipated to reduce adverse impacts on landscape, townscape and direct and indirect impacts on cultural heritage assets. In particular, the promotion of NFM infrastructure, as well as general environmental and biodiversity enhancements will contribute positively to landscape/townscape.	Potentially significant beneficial effects over the medium to longer term as measures are implemented.
Synergistic effects on improving health, economic and social wellbeing	When taken together, the Measures and Actions proposed could lead to cumulative positive effects through the reduction of overall flood risk to both people and property. Direct Measures such as increased flood warning systems could improve community awareness and resilience and help to reduce overall stress levels, in addition to reducing the potential for people to be negatively affected by flooding. In addition to this, community activities and education programmes could help to improve community cohesion, therefore creating an improved sense of wellbeing in the local community. This could further compound the beneficial effects when reacting to flood events, through the potential for increased resilience through mutual community support networks. Indirect benefits that could also add to overall community wellbeing could stem from an improvement in general environment, biodiversity and NFM / NBS measures. These	Potentially significant positive effects likely over the medium and long term as proposals are delivered.

measures could increase the areas of accessible open space available for recreation, which could lead to mental and physical health benefits.

It is to be noted that it is anticipated that most identified schemes are relatively small scale and would be confined to discrete localities or catchments. As such, spatial cumulative effects are likely to be limited. There are also temporal differences as to when schemes would be constructed – some are in progress at present, while others are identified for a 3-6 year time period. This would reduce the potential for cumulative adverse construction effects.

Note also that for beneficial cumulative effects to be fully realised, it is anticipated further consideration will be required through additional assessment and scheme design. This could include, for example, the need for Environmental Impact Assessment and or Habitats Regulation Assessment.

11.3 Likely effects with other plans and projects

11.3.1 Nationally Significant Infrastructure Projects

One NSIP has been identified for the Neath Port Talbot area and this relates to development of new infrastructure at the Port Talbot Steel Works.

Consideration is made within the LFRMSP of the importance of the steel works and some drainage related issues. For example, it is noted that a stretch of coastline within Kenfig SFRA is designated as a 'hold the line' frontage under the SMP2, Policy Unit 8.2. Although this is a privately owned stretch of beach it is important that TATA maintain this stretch of coastline to protect against flooding from the sea and ensure the integrity of the steel work facility. Note is also made of a watercourse being culverted in order to allow water to be syphoned off to be used in the steel manufacturing process.

Consideration was made of the proposed Measures and Actions set out for the River Kenfig Catchment and no significant effects were identified. Note was made that this catchment there are a number of private bodies that would require close liaison with. While this adds a layer of complication in ensuring that no significant adverse effects occur, it is considered that these can be well managed through existing protocols and powers.

11.3.2 Review of local planning policies and other developments

LFRMSP sets out how a range of key strategies and plans were considered in the development of the Plan, including the Local Development Plan, DARE strategy, Shoreline Management Plan, Biodiversity Duty Plan and the Corporate Plan. A series of national strategies and plans were also set out. These plans were all also considered as part of the development of the SEA Framework and helped identification of SEA Objectives and assessment aid questions. As such, the SEA has been undertaken with consideration of the aims and objectives of these other Plans. See Appendix A.

One key element of the approach within the LFRMSP are the Measures aligned with 'high level awareness and engagement'. This includes partnership working with other organisations (particularly RMAs). Assessment was made of these Measures (See Section 8 and Appendix D) and it was concluded that working with partner organisations will also be very beneficial and it is recommended that the LFRMSP notes more clearly that this will include organisations concerned with health and social care as well as economic agencies.

It is also worth noting that NRW are currently carrying out investigations into river restoration and other nature based solutions in Neath Port Talbot. These studies are examining the potential for multiple benefits including flood risk, sediment management and so on. Cooperation with NRW on these issues offers the potential for significant benefits to be realised across a range of SEA Objectives.



There are a range of Actions identified for implementation in the LFRMSP and these could have implications for other general infrastructure developments in the area (particularly at construction stage). Other such infrastructure developments are not known at this stage and it is recommended that consideration is made of any potential interaction with infrastructure developments that are within the planning system, or which are likely to enter the planning system at the time of detailed scheme design. It is anticipated that interactions set out under Measure 18 will ensure timely discussions between various organisations can take place. For example, this notes that Flood risk management involves collaboration among various key agencies. Natural Resources Wales (NRW) oversees main rivers, coastal erosion, and reservoir safety, offering strategic guidance. NPTCBC acting as Lead Local Flood Authority (LLFA) manage local flood risks from surface water, groundwater, and watercourses. Water and sewerage company Dwr Cymru Welsh Water (DCWW) ensure drainage systems can handle waste water and combined water floods during periods of heavy rainfall, while highway authorities manage flood risks on road networks. Emergency services, including fire, police, and ambulance services, provide immediate response during floods.



12. Monitoring

Monitoring helps to examine the effects predicted through the SEA process against the actual effects of the options outlined in the Strategy when they are implemented. It is also a requirement of the SEA Regulations (The Environmental Assessment of Plans and Programmes Regulations 2004) to describe the measures envisaged concerning how significant effects of implementing the Strategy will be monitored. Section 17 (1) notes “*the responsible authority shall monitor the significant environmental effects of the implementation of each plan or programme with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action*”. As ODPM Guidance³ advises, it is not necessary to monitor everything, or monitor an effect indefinitely, but rather monitoring needs to be focused on significant environmental effects.

Monitoring should therefore focus upon significant effects (adverse or beneficial) that are likely to breach international, national or local legislation, recognised guidelines or standards or that may give rise to irreversible damage, with a view to identifying trends before such damage is caused, and significant effects where there was uncertainty in the SEA and where monitoring would enable preventative or mitigation measures to be undertaken.

It is also important to recognise that in respect of the Strategy, there are a wide range of ‘unknowns’ in respect of environmental and social conditions, scheme design and location, and uncertainty with future baseline conditions at the point of scheme implementation as a result of climate change. As such, while monitoring should focus on the significant environmental effects identified, it is to be recognised that certainty of assessment in some cases is reduced.

Monitoring can be integral to compiling baseline information for future plans and programmes (including future iterations of the LFRMSP) as well as to preparing information which will be needed for EIAs of projects. Monitoring and evaluation of progress towards objectives and targets can form a crucial part of the feedback mechanism. Feedback from the monitoring process helps to provide more relevant information that can be used to pinpoint specific performance issues and significant effects, and ultimately lead to more informed decision-making.

The following table then outlines potential monitoring indicators linked to each SEA objective. It is anticipated that significant adverse effects can be addressed for the most part through best practice construction techniques and close adherence to environmental protection measures. Nevertheless, it would be beneficial to monitor certain aspects commencing at the initial scheme design phase (i.e. prior to any EIA being undertaken) and informed by the design process. Note that any EIA process may also identify further monitoring that may be important to undertake at an appropriate time.

It is to be further noted that monitoring does not necessarily need to be undertaken by the responsible authority, rather information used in monitoring can be provided by other bodies. Indeed, due to typical budgetary or resource issues, it is often considered that the most effective monitoring programme utilises information that is already being collected, either by the responsible authority itself or by other bodies with whom information can be shared, rather than proposing the collection of new datasets.

³ A Practical Guide to the Strategic Environmental Assessment Directive

Table 12-2 – Potential Monitoring for Proposed Schemes

SEA Topic	Potential indicators to monitor change	Target
Biodiversity	Number of flood risk management interventions that work with natural processes	Increase
	Area of green space important for wildlife corridors identified and safeguarded or enhanced as part of flood management	Increase
	Number of new flood risk management interventions delivering habitat creation or enhancement	Increase
	Number of SSSIs Favourable condition enhanced as a direct or indirect result of flood risk management interventions	Increase
	Area of protected woodland and trees lost through flood risk management interventions	Nil
	Area of SSSI lost to flood risk management interventions	Nil
	Number of SSSI where favourable condition has declined due to direct or indirect impacts of flood risk management interventions	Nil
	Area of LNR lost to flood risk management interventions	Nil
	Area of BAP habitat lost to flood risk management interventions	Nil
	Area of BAP habitat created /managed which meet Biodiversity Action Plan targets as part of flood management	Increase
	Number of flood risk management proposals where plans with conditions are imposed to ensure working practices and works to protect/ enhance protected species	Reduce
	Number of NFM and hybrid schemes undertaken to protect / deliver compensatory habitat lost to flood risk management interventions	Increase
	Number of flood risk management interventions which have an adverse effect on European Protected Sites (through increased flood risk or flood management interventions)	Nil
	Number of flood risk management proposals which require a Habitats Regulations Assessment with mitigation measures to ensure no adverse effect on European sites.	
Soil	Area of Grade 1 and 2 agricultural land (hectares) lost as a result of food risk management interventions	Reduce
	Number of serious soil erosion incidents annually caused by flood events.	Nil
	Area of land provided with protection measures to protect from flooding	Increase
	Area of contaminated land remediated	Increase
Water	Length of improved watercourse as part of flood risk management interventions	Increase
	Number of surface water bodies achieving 'good' ecological status.	Increase
	Number of new developments generating an increase in surface water runoff	Nil



Air	Number of registrations against recognised Environmental Building and/or Design Standards (e.g. BREEAM / CEEQUAL)	Increase
	Carbon Reductions achieved from implemented flood risk management interventions	Increase
	Air Quality Annual Status Report – various sites	Reduce
	Number of complaints regarding air quality and / or noise	Reduce
Climate Factors	Using flood risk management maps and national asset databases to monitor adaptation to climate change	
	Number of LZEV's used in construction	Increase
Climate Factors	Number of residential properties within flood risk areas	Reduce
	Number of non-residential properties within flood risk areas	Reduce
	Number of planning applications approved annually subject to sustained Environment Agency objections on flood risk grounds.	Reduce
	Number of new flood prevention schemes developed	Increase
	Number of incidents of road or railway line closures due to flooding annually.	Reduce
Landscape	Number of consents for inappropriate development in the Green Belt	Reduce
	Number of flood related applications refused because of adverse effects on the designated landscape areas	Reduce
	Number of visual impact assessments undertaken as part of any flood risk related planning applications	Increase
	Change in area of protected urban open space	No less
Cultural Heritage	Number of designated and non-designated heritage assets (listed buildings / ancient scheduled monuments / buildings of local interest, etc) harmed by flood risk management measures, including impacts on their settings.	Nil
	Number of flood risk management measures implemented that conserve and enhance heritage assets including designated sites, listed buildings and conservations areas	Increase
Population and Human Health	Number of people who understand the consequences of flood risk and how to live with it (informed through number of public engagement events which have taken place e.g. flood fairs, flood action group meetings).	Increase
	Number of deaths/injuries resulting from flooding in the study area annually	Reduce
	Number of residential properties affected by flooding in the study area at different levels of flood risk.	Reduce
	Number of community and economic assets affected by flooding in the study area annually.	Reduce
	Number of elderly people at risk of the adverse consequences of flooding	Reduce
	Number of disabled people at risk of flooding	Reduce
Population and Human Health	Number of flood risk management schemes that reduce people's ability to access green spaces	Nil
	Number of tourism assets affected by flooding in the study area annually.	Reduce
Material Assets	Number of flood management schemes promoting re-use and recycling	Increase



Number of households and businesses registered for flood warnings as a percentage of total number of households and businesses at risk of flooding	Reduce
Number of properties at different levels of flood risk.	Reduce



13. Summary and conclusions

The SEA process carried out through the development of the LFRMSP has been thorough and comprehensive. Continuous dialogue has taken place between the Plan making team and the SEA team, with a series of discussions held and recommendations made.

The draft LFRMSP was assessed against a set of SEA Objectives and decision making questions, used consistently through the assessment process, across as aspects of the proposed Plan and it is considered this has helped to ensure that environmental issues have been incorporated into the LFRMSP. Based on the findings of the SEA, it is possible to draw a number of key conclusions with regard to LFRMSP.

In terms of the need for the LFRMSP, it was shown that there is a legislative requirement for this to be developed, as well as high level principles and measures in respect of addressing flood risk set out at a national level in Wales. This means there is little flexibility in setting out or considering strategic alternatives to the LFRMSP. As such, consideration of Alternatives was made on the basis of considering implementing a new LFRMSP rather than continuing with the current approach to flood management in Neath Port Talbot. The SEA has shown that this represents a sound approach to managing flood risk, while also recognising that there are potential environmental opportunities (such as NFM and NBS) from the new approach, while also addressing the core requirements.

In the first instance, consideration was made of the LFRMSP Strategic Objectives, which were developed to reflect national objectives, but also reflect the local context and priorities of Neath Port Talbot. It was shown through consideration of how compatible these were to the SEA Objectives that the proposed approach under NPTLFRMSP provided a generally firm underpinning to help ensure that the environmental performance of the Plan could be maximised. While there were some areas of uncertainty, these were not sufficient to preclude progressing with further development of the LFRMSP.

A key area of focus for the SEA was on the series of Measures that were selected to achieve the strategic objectives outlined. It was noted as the foremost outcome intention that implementing these measures would lead to a reduction in flood risk across the LFRMSP area.

The first Measures examined were Measure 1 and 2 which fall under the broader theme of 'Development planning and adaptation'. The main elements of these measures related to the implementation of Sustainable drainage (SuDS) and overall, it is considered that these measures set a good basis for a range of beneficial effects across the SEA objectives. Many of these effects can be anticipated to be significant, notably in respect of biodiversity, soils, water quality and resources, vulnerability of built assets / infrastructure and resilience / adaptation to climate change, landscape and townscape, resource use and waste production. It is also worth noting that the measures Strategies to help with recovery will also limit effects. Better preparation would include through improved infrastructure, early warning systems, and disaster response plans, thereby lessening the immediate impact of floods. It is also anticipated this will lead to lower long-term vulnerability by encouraging sustainable land-use practices and constructing resilient infrastructure that can withstand future flood events. There would also be post-flood recovery strategies to help enable quick restoration of normalcy. Well informed and prepared communities are also anticipated to have enhanced social and community networks, with reduced property damage, lower recovery expenses and livelihoods which are more secure. local communities, as well as support attractive, resilient and viable communities.

The health, economic and social wellbeing of communities is also anticipated to be significantly benefitted by the measures set out in respect of 'flood forecasting, warning and response'. Strategies to help with recovery will also limit effects. Better preparation would include through improved infrastructure, early warning systems, and disaster response plans, thereby lessening the immediate impact of floods. It is also anticipated this will lead to lower long-term vulnerability by encouraging sustainable land-use practices and constructing resilient infrastructure that can withstand future flood events. There would also be post-flood recovery strategies to help enable quick restoration of normalcy. Well informed and prepared communities are also anticipated to have enhanced social and community networks, with reduced property damage, lower recovery expenses and livelihoods which are more secure.



In respect of the broad theme of 'land, cultural and environmental management', the Measures were concerned with Natural Flood Management and Nature Based Solutions (Measure 5) and general Environmental and Biodiversity enhancement (Measure 6). From an SEA perspective, these Measures are of considerable importance and provide a very strong basis for a range of beneficial effects across the SEA objectives. Many of these effects can be anticipated to be significant, notably in respect of biodiversity, designated sites, soils, the water environment, townscape and visual amenity, the health and wellbeing of communities and the ability to minimise resource use and waste production.

The Measures set out under the broad theme of 'Asset management and maintenance' were then assessed. These covered a range of related approaches such as asset surveys (Measure 7), S21 Asset register (Measure 8), Critical flood risk asset inspection (Measure 9) and Critical flood risk asset maintenance and repairs (Measure 10). Overall, it is considered that these measures are beneficial across most environmental aspects, though these benefits will most likely be slight. However, it is considered that those aspects of relevance to health, economic and social wellbeing are of significant benefit. The potential for water quality issues during refurbishment (including desilting operations) could be of adverse effect, though it is considered these could be well managed through pollution prevention measures such as silt mattresses, silt curtains, bunds etc. There could also be other (slight adverse) environmental issues relating to biodiversity, air quality, noise, soils and so on through the general construction type activities that may be involved in maintenance. Again though, it is anticipated that these could be easily managed through standard mitigation techniques.

Another key element of the broad theme of 'Asset management and maintenance' is Measure 11 – Construction of flood alleviation schemes. While this is part of the broad theme, it was considered that there is a particular likelihood of potential significant environmental effects from such a Measure, which is anticipated to require construction of hard engineered infrastructure and as such, this was assessed in isolation. Overall, it was noted that while hard engineered structures can have significant adverse effects, particularly during construction through issues such as a loss of biodiversity, or the amount of carbon emissions or embedded carbon they require to construct. During operation, they could act to prevent or restrict fish passage. Nevertheless, note that any scheme being developed in the fluvial, estuarine or coastal environment should undergo full assessment in respect of implications for the WFD and the objectives of the RBMP. Any design should consider the findings of all such assessments. This is being completed for those schemes progressed to date where it was considered that there were potential implications for the relevant watercourse and this would help inform the consenting process.

Nevertheless, they are very effective at protecting infrastructure from flooding and if well built, can last many decades. As part of a range of catchment wide management, they can have an important role at very specific locations e.g. to protect high worth assets, or assets of cultural importance and as such can be considered a key element to wider sustainable management. They are particularly beneficial to providing reassurance to people that their properties are well protected, or even provide the perception of protection. The benefits to physical and mental well-being from this protection, or perceived protection are significantly beneficial.

In order to begin to address issues related to hard engineered schemes, it was noted that there would be a requirement for further, more detailed assessment, including as required EIA and HRA and design processes should consider the full range of environmental topics set out in those processes. This would include considerations of specialist assessments into specific topics such as fish passage. The development of construction environmental management plans should also be ensured.

In relation to the broad theme of studies, assessment and plans, (this related to Measures 12 – 15 and covered Flood Risk Assessment, flood investigation, feasibility studies and development of business cases), it was considered that these, in themselves, are not anticipated to have direct effects on the environment and are therefore considered neutral for the purposes of this SEA. Nevertheless, they are considered to be a vital part of the overall approach to ensuring flood protection can be achieved, while still protecting people and the environment. It is important to note that further assessment may be required in respect of the findings of any study, assessment or plan, or these could result in the development of some schemes, including those that could have adverse effects such as through the

requirement for large scale engineering and construction. Nevertheless, it is considered that any issues arising could be addressed via other Measures set out in this plan.

Protection of people and their property is a fundamental aim of the LFRMSP. An important aspect of keeping people informed is addressed through the broad theme of 'high level awareness and engagement'. This sets out how risk will be communicated (Measure 16), people will be warned and informed (Measure 17), how partnership working will take place with other organisations (Measure 18) and how emergency response plans will be developed (Measure 19).

Overall, in respect of 'high level awareness and engagement', while beneficial effects are anticipated across the range of SEA Objectives, significant beneficial effects are anticipated in relation to that seek to ensure protection to built infrastructure and assets and how this will have beneficial effects on people through lowering the risk of flooding and reducing the stress involved. Reliable information alleviates anxiety, while training in emergency skills enhances safety. Timely flood warnings enable safe evacuations, property protection, and psychological preparedness, reducing panic and fostering community resilience. Warning and informing residents about flooding is a vital component of disaster risk reduction. It saves lives, protects property, minimises economic losses, enhances community resilience. Working with partner organisations will also be very beneficial and it is recommended that the LFRMSP notes more clearly that this will include organisations concerned with health and social care as well as economic agencies.

Following assessment of the Measures set out in LFRMSP, consideration was then made of the series of Actions based on these measures to alleviate flood risk for each of the locations identified as at risk of flooding across the catchments of the Neath Port Talbot area.

For many areas, it is acknowledged in the LFRMSP that there is a lack of understanding of what is causing the flooding or the precise mechanisms of flooding, the extent of the flood risk and how best to address that risk. As such, for many areas the key actions relate to undertaking assessments, update mapping, liaise with other organisations, undertake feasibility studies and so on. This lack of understanding is reflected in the range of Measures and subsequent Actions, which cover many of the activities that are required to fully understand these issues. The SEA considered that these types of Actions are not likely to result, in themselves, in significant environmental effects.

There are though elements of LFRMSP that could result in adverse environmental effects, some of which may be significant. This partly a reflection of the nature of the geography and topography of parts of Neath Port Talbot – steep sided valleys mean that many watercourses are very flashy in nature and can carry significant amounts of debris down the channel that is often the main cause of flooding to the area. As such, inspections and maintenance form a key element of the Plan.

While for the most part it is anticipated that activities associated with maintenance will be reasonably limited. For example, in the River Tawe catchment, 18 assets are noted, but these are all trash screens and maintenance activities here would mainly involve removing debris from these trash screens. However, there is a potential that some maintenance activities could be more intrusive or of greater extent. For example, note is made under Measure 10 of activities such as grid cleansing, de-silting, and channel clearance to allow for the drainage systems to work at maximum capacity. This raises the potential for pollution incidents such as silt deposition downstream of such activities. Nevertheless, it is considered that such pollution risk can be well managed through the use of silt traps, silt mats, silt curtains and so on. The SEA notes such mitigation measures.

Construction of flood alleviation schemes represent the main part of the LFRMSP that are anticipated by the SEA to potentially result in adverse environmental effects, often potentially significant. Such schemes are limited though and if not already in construction, are all in various stages of design and progress. This has included consideration of whether formal EIA is required or not. Where not, consideration of environmental issues has taken place where required, along with the development of Construction Environmental Management Plans. In addition, consideration was made of issues such as community adaptation (recreation or amenity gain), along with liaison with statutory bodies and this has helped inform design. Biodiversity gain has also been considered though this is more difficult to achieve in the relatively constrained urban environment in which the schemes are proposed.

Another key Action set out in the LFRMSP is the need to liaise with other organisations. Clear note is made that flood risk management involves collaboration among various key agencies. Natural Resources Wales (NRW) oversees main rivers, coastal erosion, and reservoir safety, offering strategic guidance. NPTCBC acting as Lead Local Flood Authority (LLFA) manage local flood risks from surface water, groundwater, and watercourses. Water and sewerage company Dwr Cymru Welsh Water (DCWW) ensure drainage systems can handle waste water and combined water floods during periods of heavy rainfall, while highway authorities manage flood risks on road networks. Emergency services, including fire, police, and ambulance services, provide immediate response during floods.

The SEA notes this Action to liaise with such bodies and anticipates a range of beneficial effects can be realised from this. However, it is also noted that dealing with other organisations can bring complexity to issues, or issues with lines of communication, roles and responsibilities. Another factor which is clear in the LFRMSP is the need to deal with private companies or individuals on occasion. For example, note is made that in some areas it will be the responsibility of the land owners to ensure their drainage apparatus is cleansed effectively to deal with rainfall, while the flood authority will ensure the area is mapped out to understand the drainage network serving the area. These details will then be passed onto the residents so that they are aware of the surface water flood risk. Nevertheless, it is anticipated that such issues can be dealt with through existing powers, approaches and policies.

Overall, it is anticipated that the LFRMSP represents a well-balanced approach in terms of environmental performance across the full range of potential key effects delineated in the SEA Framework. It is also important to note that many of the measures noted in the LFRMSP are aligned with the Objectives of the Water Framework Directive and its associated River Basin Management Plans and Opportunity Catchment Areas. In particular, the implementation of SuDS, Natural Flood Management and Nature Based Solutions will provide opportunities for more natural runoff rates in catchments, improvements in water quality, reduction in pollution, reduction in the need for hard infrastructure (or allow for the removal of some man made features) and so on. Those measures that encourage collaboration across a range of organisations would also allow for a more collaborative and integrated approach to catchment management.

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