RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

Draft

Flood and Water Management Act 2010

Local Flood Risk Management Strategy and Action Plan

Strategic Environmental Assessment

Environmental Report

March 2024

ANDREW STONE
Head of Flood Risk Management and Strategic Projects
Strategic Projects, Sardis House, Sardis Road, Pontypridd, CF37 IDU

STEPHEN WILLIAMS
Director for Highways, Streetcare and Transportation Services
Frontline Services, Sardis House, Sardis Road, Pontypridd, CF37 IDU

RHONDDA CYNON TAF

DOCUMENT VERIFICATION

Client	Director for Highways, Streetcare and Transportation Services
Project	Flood and Water Management Act 2010, Local Flood Risk Management Strategy and Action Plan
Document Title	Strategic Environmental Assessment – Environmental Report
Document Ref	N/A
Project No	N/A
Date of Issue	15/12/2023

RHONDDA CYNON TAF

CONTENTS

1. INTRODUCTION

1.1. BACKGROUND

Rhondda Cynon Taf County Borough Council's (RCTCBC) has produced a revised Local Flood Risk Management Strategy and Action Plan (Local Strategy) as a key duty under Section 10 of the Flood and Water Management Act (FWMA) 2010. The purpose of the Local Strategy is to guide the management of local flood risk across Rhondda Cynon Taf (RCT).

This report forms the revised Strategic Environment Assessment (SEA) Environmental Report which presents an assessment of the potential environmental effects of RCTCBC's revised Local Strategy.

The SEA Environmental Report forms part of the consultation (along with the Local Strategy and Habitats Regulations Assessment) undertaken as part of the development of the Local Strategy.

This Environment Report presents the findings of the SEA process.

The LFRMS sets out:

- The roles and responsibilities of the risk management authorities in the Lead Local Flood Authority (LLFA) area and the risk management functions that may be exercised by those authorities;
- the strategic objectives for managing local flood risk, the measures by which these objectives will be met and the actions that will be delivered to achieve the measures and objecitves;
- the timescales and costs for the implementation of the above measures and actions;
- benefits of these measures and the mechanisms to fund them;
- an assessment of local flood risk for the purpose of the Strategy and Action Plan;
- the method and timescales for review of the Strategy and Action Plan; and
- how the Local Strategy contributes to the achievement of wider environmental objectives.

1.2. Strategic Environmental Assessment

The aim of the SEA is to identify potentially significant environmental effects created as a result of the implementation of the Local Strategy on issues such as "*biodiversity, population, human health, fauna, flora, soil, water, air, climatic, material assets including architectural and archaeological heritage, landscape and the interrelationship between the above factors*" (Annex 1(f)). The Directive was transposed into Welsh legislation by the Environmental Assessment of Plans and Programmes (Wales) Regulations 2004 (the 'SEA Regulation').

1.3. Aims and Structure of this Report

This report aims to document the SEA process and:-

- provides a description of the SEA process and the decisions taken during this process;
- considers, and takes into consideration other strategies, plans and policies deemed relevant;
- identifies key environmental issues and trends and provides an environmental context for the revised Local Strategy;
- assesses the potential effects of the Strategy in addition to appropriate mitigation (if required) and enhancement measures; and
- sets out the proposed monitoring measures which will be used to review the Strategy in the future.

Table 1 presents the structure of this report with cross-references to the requirements of the SEA Directives.

Table 1: Requirements of the SEA Environmental Report

SEA Requirement	Section in this report
An outline of the contents and main objectives of the Strategy, and of its relationship with other relevant plans and programmes	4.1 & 6.0
The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the Strategy.	4.2
The environmental characteristics of areas likely to be significantly affected.	4.3
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 Council Directive 79/409/EEC on the conservation of wild birds and the Habitats Directive.	Ref. LFRMS Habitats Regulation Assessment
The environmental protection objectives, established at international, Community or Member State 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.	5.1
The likely significant effects on the environment, including short, medium and long-term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects, on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material asserts, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above issues.	7.1
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.	N/A
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.	5.2
A description of the measures envisaged concerning monitoring.	7.3

An outline structure of the remainder of this report is provided below:-

Section 2	Strategic Environmental Assessment Processes and Stages
Section 3	Strategic Environmental Context, Baseline and Objectives
Section 4	SEA Assessment Method
Section 5	Local Flood Risk Management Strategy Objectives
Section 6	Assessment of Local Flood Risk Management Strategy Objectives
Section 7	Future SEA Activities

1.4. STUDY AREA

The SEA will encompass the administrative boundary of RCTCBC as indicated in Figure 1.

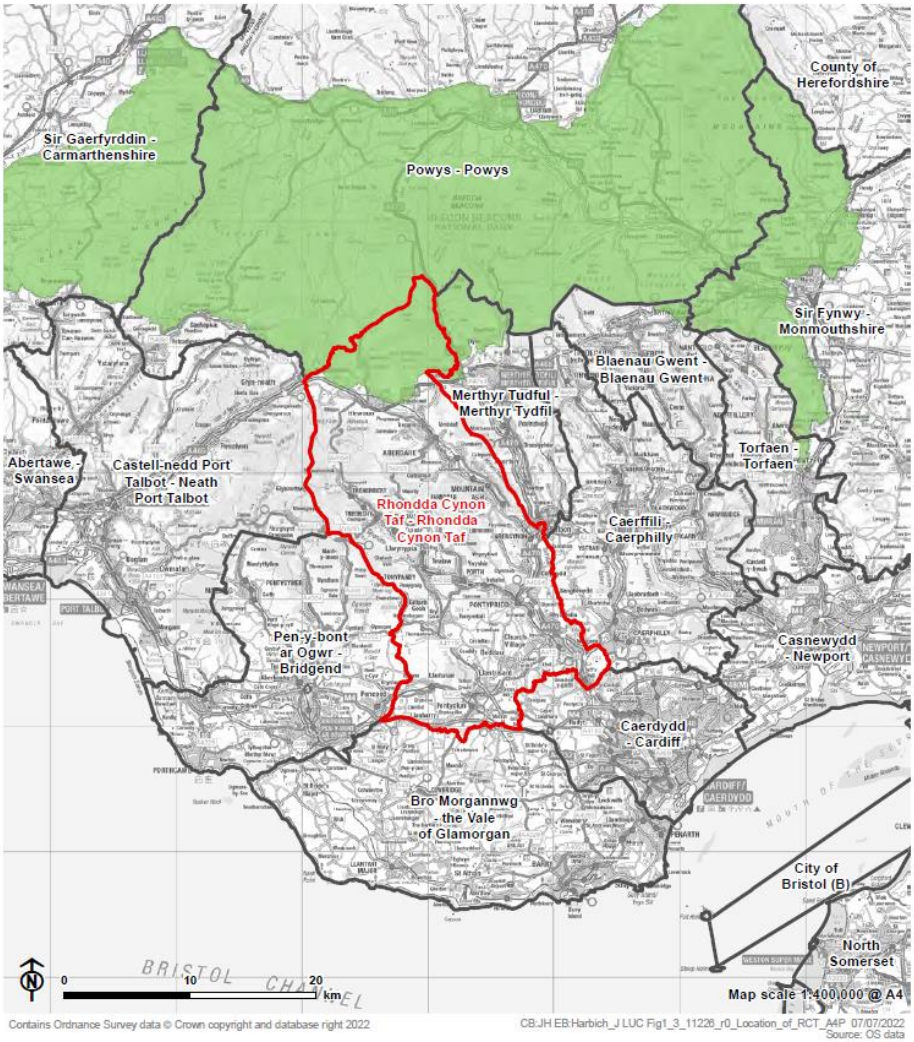

Figure 1: Location of RCTCBC

1.5. Consultation

In accordance with the SEA Directive, the draft Scoping Report was published for public consultation alongside the draft Local Flood Risk Management Strategy and Action Plan. The consultation ran for a period of six weeks from the 21st of August to 2nd October 2023.

The feedback received during the public consultation has been used to inform changes to the final report.

2. STRATEGIC ENVIRONMENTAL ASSESSMENT PROCESS AND STAGES

This section outlines the Strategic Environmental Assessment process and provides a summary of the stages of the process completed thus far.

2.1. STRATEGIC ENVIRONMENTAL ASSESSMENT SCREENING

2.1.1. SCREENING ASSESSMENT

Prior to commencement of the SEA process, a Strategy, Plan or Programme would ordinarily be '*screened*' to establish whether the plan is subject to the SEA Directive and requires an SEA.

In accordance with the requirements of Regulation 9 of the *Environmental Assessment of Plans and Programmes (Wales) Regulations 2004* (herein referred to as the Regulations), RCTCBC screened its initial LFRMS to determine the likely significance of the effects of the strategy on the environment. In doing so RCTCBC took into consideration the selection criteria in schedule 1(1) and (2) of the Regulations (ref. Table 2).

2.1.2. SUMMARY OF SCREENING ASSESSMENT

Given the high-level nature of the LFRMS, it is difficult to accurately establish the degree to which potentially significant environmental effects will occur. Due to the inherent uncertainty, and the potential for significant environmental effects, it is RCTCBCs view that the LFRMS is likely to have significant environmental effects, and that SEA is required.

A Screening assessment was not undertaken for the second cycle of the Local Strategy. A review of the changes to the initial and second cycle LFRMS concluded the revision will not lead to significant environmental effects at a strategic level which have not already been identified and explored in the previous assessment. As a result, RCTCBC have proceeded to produce a revised SEA for the second cycle of the Local Strategy.

2.2. STRATEGIC ENVIRONMENTAL ASSESSMENT GUIDANCE

This has been developed in accordance with the following guidance:

A Practical Guide to the Strategic Environmental Assessment Directive (ODPM, August 2006)[1].

Table 2: Prediction of significant Environmental Effects

Criteria ***(ref. Schedule 1 of the Regulations)***	**Likely to have significant environmental effects?**
The characteristics of plans and programmes, having regard, in particular, to:-	
1(a) The degree to which the plan or programme sets a framework for projects and other activities, either with regard to the location, nature, size and operating conditions or by allocating resources;	**Potentially significant effect.** The flood actions set out in the Action Plan (Appendix A of the LFRMS) are specific to each Strategic Flood Risk Area (SFRA). The nature, size and operating conditions require further assessment however there is potential to have positive effects through for instance, natural flood management measures, retrofitting green infrastructure and environmental enhancement.
1(b) the degree to which the plan or programme influences other plans and programmes including those in a hierarchy;	**No predicted significant effects**. However there are potential linkages with other land use, biodiversity and water based plans and strategies.
1(c) the relevance of the plan or programme for the integration of environmental considerations in particular with a view to promoting sustainable development;	**Potentially significant effects**. It is believed that the Strategy will make a significant positive contribution to sustainability in RCT.
1(d) environmental problems relevant to the plan or programme; and	**Potential significant effects**. Potential to have positive effects through for instance, land management policies and water quality enhancement.
1(e) the relevance of the plan or programme for the implementation of Community legislation on the environment	**No predicted significant effects**.
Characteristics of the effects and of the area likely to be affected, having regard, in particular, to the:-	
2(a) the probability, duration, frequency and reversibility of the effects;	**Uncertain**. Further assessment required.
2(b) cumulative nature of the effects;	**Uncertain**. There may be potential for positive cumulative effects.
2(c) transboundary nature of the effects;	**No predicted significant effects**. No transboundary issues.

[1] A Practical Guide to the Strategic Environmental Assessment Directive (publishing.service.gov.uk)

Criteria *(ref. Schedule 1 of the Regulations)*	Likely to have significant environmental effects?
2(d) risks to human health or the environment;	**Potential for significant effects** via the increased provision of accessible open space or the reduction in intangible human health issues. Hence likely to have a positive effect.
2(e) magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected);	**Uncertain**. Potential for significant effects. The spatial extent of projects/plans associated with the Strategy are unknown at this time but could encompass a large area.
2(f) value and vulnerability of the area likely to be affected due to:- special natural characteristics or cultural heritage, exceeded environmental quality standards or limit values, intensive land use; and	**Uncertain**. Potential for significant effects. There is a potential that future plans or policies could increase disturbance to habitats and areas of cultural heritage.
2(g) effects on areas or landscapes which have a recognised national, Community or international protection status.	**Uncertain**. Potential for significant effects. There is potential for increased disturbance of species and habitats (including those that form parts of SSSIs and SACs).

2.3. SEA S

The main stages and tasks for each stage of the SEA process are presented in Table 3 below:

Table 3: Stages in the SEA Process

SEA Stages	SEA Tasks
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope	A1: Identifying other relevant policies, plans and programmes, and environmental protection objectives
	A2: Collecting baseline information
	A3: Identifying environmental issues and problems
	A4: Developing the SEA objectives and framework
	A5: Consulting on the scope of the SEA
Stage B: Developing and refining options and assessing effects	B1: Testing strategy objectives against the SEA objectives
	B2: Developing strategic alternatives
	B3: Predicting the effects of the strategy, including alternatives
	B4: Evaluating the effects of the strategy, including alternatives
	B5: Mitigating adverse effects
	B6: Proposing measures to monitor the environmental effects of implementing the strategy
Stage C: Preparing the Environmental Report	C1: Preparing the Environmental Report
Stage D: Consulting on the LFRMS and the SEA Report	D1: Consulting on the draft LFRMS and Environmental Report with the public and Consultation Bodies
	D2: Assessing significant changes
	D3: Making decisions and providing information
Stage E: Monitoring the significant effects of implementing the LFRMS	E1: Developing aims and methods for monitoring
	E2: Responding to adverse effects

This report presents the culmination and summary of Tasks A1 to C1 of the SEA process and progresses the SEA process to Task D1.

2.4. STAGE A – SCOPING

The initial step in the SEA process was to produce a SEA Scoping Report which outlined the proposed framework or the SEA assessment. This report was undertaken during the initial cycle of the Local Strategy in 2011-2013 and was submitted by RCTCBC to the three statutory consultation bodies in Wales at that time:

- Environment Agency Wales;
- Countryside Council for Wales; and
- CADW

The consultation period ran for 5 weeks. Representations were received from all three of the consultation bodies. There were assessed and amendments were incorporated into further iterations of the SEA process as required.

2.5. STAGE B – DEVELOPING AND REFINING OPTIONS AND ASSESSING EFFECTS & STAGE C – PREPARING THE ENVIRONMENTAL REPORT

During the initial cycle of the RCT's Local Strategy in 2011-2013, an assessment of the Local Strategy objectives against the SEA objectives was undertaken during their development to determine how wider environmental improvements could be incorporated into and considered in the development of the Local Strategy. This process was documented in the form of an Environmental Report.

For the second cycle of RCT's Local Strategy, the previous Environmental Report has been updated to reflect the revised Local Strategy objectives.

3. STRATEGIC ENVIRONMENTAL CONTEXT, BASELINE AND OBJECTIVES

The following section presents a summary of the work undertaken during the SEA scoping stage, summarising key environmental issues identified from baseline data and a summary of the review of relevant strategies, plans, policies, and programmes. This section also provides details on how the SEA objectives were derived and the proposed assessment framework.

3.1. CONTEXT - IDENTIFYING OTHER RELEVANT PLANS, PROGRAMMES AND STRATEGIES

The Local Strategy must comply with existing higher-level policies, plans and programmes at international, national and regional levels and endeavour to strengthen and support plans and strategies at the local level. It has therefore been important to identify and review those policies, plans and programmes which are particularly relevant to both the Local Strategy and the SEA. This has allowed any inconsistencies or constraints within the Local Strategy to be addressed and also to help develop the SEA framework. Table 4 outlines the key identified documents, whilst a comprehensive description of these documents together with their relevance is provided within the accompanying Annex A.

Table 4: Key international, sub-national and local plans, programmes & Strategies

International Plans and Programmes
EU Floods Directive - Directive 2007/60/EC on the assessment and management of flood risks, 2007
EU Water Framework Directive - Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy, 2000
UN Framework Convention on Climate Change
World Health Organisation Global Strategy on Health, Environment and Climate Change (2020)
National Plans and Programmes
Climate Change Act 2008
DCWW Water Resources Management Plan 2019
Environment (Wales) Act 2016
Flood and Water Management Act 2010
Flood Risk Regulations 2009
Future Wales: the National Plan 2040 (2021)
Historic Environment (Wales) 2016
Land Drainage Act 1991
National Strategy for Flood and Coastal Erosion Risk Management in Wales, October 2020
Planning Policy Wales (Edition 11) 2021
Prosperity for All: A Climate Conscious Wales (2019)
Technical Advice Note (TAN) 15: Development and Flood Risk 2004
Well-being of Future Generations (Wales) Act 2015
Welsh Government Water Strategy for Wales 2015
Water for People and the Environment: Water Resources Strategy for Wales 2009

Sub-national Plans and Programmes
Future Beacons: Management Plan for the Brecon Beacons National Park 2022-2027
Making Rhondda Cynon Taf Carbon Neutral by 2030
Managing Change Together: Brecon Beacons National Park Management Plan 2010 – 2015
Preliminary Flood Risk Assessment: Merthyr Tydfil County Borough Council, April 2011 and January 2018
Preliminary Flood Risk Assessment Report; Caerphilly County Borough Council, October 2011 and November 2017
Preliminary Flood Risk Assessment Report: Bridgend County Borough Council, August 2011 and October 2017
Preliminary Flood Risk Assessment: Final Report: Cardiff Council, October 2011 and December 2017
Preliminary Flood Risk Assessment Report: Neath Port Talbot County Borough Council, March 2011 and December 2017
Preliminary Flood Risk Assessment: Blaenau Gwent Borough Council, June 2011 and November 2017
Preliminary Flood Risk Assessment Report: Monmouthshire County Council, June 2011 and November 2017
Preliminary Flood Risk Assessment Report: Torfaen County Borough Council 2011
Severn Preliminary Flood Risk Assessment, December 2018
Severn River Basin Management Plan, 2022
Special Planning Guidance: Nature Conservation (LDP)
Local Plans and Programmes
Rhondda Cynon Taf Preliminary Flood Risk Assessment, December 2011 and December 2017
Rhondda Cynon Taf Strategic Flood Consequence Assessment (October 2008)
Action for Nature: A Local Biodiversity Action Plan for Rhondda Cynon Taf (LBAP)
Rhondda Cynon Taf County Borough Council Local Development Plan 2006-2021
RCT Site's of Importance for Nature Conservation

Special Planning Guidance: Nature Conservation (LDP)
Cynon Valley River Habitat Strategy (2007)
Live. Grow. Aspire. Achieve: Rhondda Cynon Taf Community Strategy 2010-2020
Local Strategy
FRMP
Tree Strategy, Climate Change Strategy

3.2. BASELINE INFORMATION

The baseline information identifies current environmental issues and problems in the area which has been addressed in the Local Strategy/SEA and provides a basis for predicting and monitoring the effects of implementing the Strategy. The baseline information has been updated to reflect new information and/or additional issues identified since the initial iteration of the Local Strategy and SEA.

To ensure the data collected was relevant and captured the full range of environmental issues it was categorised under 9 thematic topics which cover the topics referred to in Annex 1(f) of the SEA Directive, plus the additional theme of *flooding*. Summaries of the 9 thematic topics are presented below and the detailed baseline information forms Annex B of this report.

3.2.1. BIODIVERSITY, FLORA AND FAUNA

3.2.1.1. SUMMARY

Special Areas of Conservation (SAC) are identified on the basis of scientific criteria as set out in the European Commission Birds and Habitats Directives and the subsequent Conservation (Natural Habitats) Regulations 1994. They may be designated on any area of land of special interest for its flora, fauna, geological, or physiographic features and are notified by the Countryside Council for Wales (CCW) as part of a European series of important sites.

Within RCT (outside of the Bannau Brycheiniog National Park) there are parts of three SACs. In the North, Blaen Cynon SAC, Hirwaun supports a significant marsh fritillary butterfly colony, important Rhos pasture and peat bog and Coedydd Nedd a Mellte SAC includes river, woodland and grassland habitats. In the far south of the Authority a small part of the Cardiff Beechwood SAC lies within the County Borough.

Sites of Special Scientific Interest (SSSI) are identified on the basis of scientific criteria as set out in Section 28 of the Wildlife and Countryside ACT 1981 and may be designated on any area of land of special interest for its flora, fauna, geological or physiographic features. SSSIs are notified by the Countryside Council for Wales (CCW), as part of a British set of important sites. There are 14 SSSIs in Rhondda Cynon Taf.

Local Nature Reserves (LNR) are owned or managed by RCTCBC. There are currently two LNRs in RCT, at Glyncornol (Llwynypia) and Craig yr Hesg (Llantrisant).

Wildlife Trust for South and West Wales Nature Reserves are owned or leased by the Trust and managed for nature conservation. At present there are three Trust reserves in RCT at Brynna Woods/Llanharan Marsh (Llanharan), Pwll Waun Cynon (Mountain Ash) and Y Gweira (Llantrisant).

Sites of Importance for Nature Conservation (SINC) are a local authority planning designation relating to Policy AW8 of RCTs Loca Development Plan (see also the Nature Conservation Supplementary Planning Guidance for the LDP) and identified against adopted selection criteria. 183 SINCs have been formally defined in RCT. *Action for Nature*: The Local Biodiversity Action Plan for Rhondda Cynon Taf provides an important biodiversity context for the County Borough.

RCTCBC has previously commissioned an Earth Science Audit (2003/4) of the County Borough. A methodology for assessing the geo-conservation value of sites was developed, and the sites scored accordingly. The sites with the highest geo-conservation scores are already statutorily protected as Sites of Special Scientific Interest, most of the remaining sites lie within Sites of Importance for Nature Conservation, and frequently their features are a contributory factor affecting or determining the ecological value of the site. 44 sites have been included on the list of Regionally Important Geological Sites.

3.2.1.2. INFLUENCE OF THE LFRMS ON BIODIVERSITY, FLORA AND FAUNA

The Local Strategy has adopted a multitude of policy options in order to manage flood risk. These range from the potential for adopting innovative land management and natural flood management (NFM) techniques through to the construction of physical defences. It could be argued that any option, which affects the landscape or alters the hydrological regime within that landscape has the potential to have both positive and detrimental effects upon biodiversity.

When developing Local Strategy options, due regard has been given to the likely sensitivity of biodiversity to the potential changes being proposed, or indeed likely opportunities for ecosystem enhancement should be sought in support of the Local Biodiversity Action Plan.

3.2.2. POPULATION AND HUMAN HEALTH

3.2.2.1. SUMMARY

In Wales, the population grew by 1.4% or 44,000 people between 2011 and 2021 according to the ONS census population change. Rhondda Cynon Taf is the third most populous unitary authority in Wales after Cardiff and Swansea, with approximately 237,700 people. Rhondda Cynon Taf ranked third for total population out of 22 local authority areas in Wales, maintaining the same position it held a decade ago. As of 2021, Rhondda Cynon Taf is the eighth most densely populated of Wales' 22 local authority areas, with around four people living on each football pitch-sized area of land.

Overall, in Wales, there has been an increase of 17.7% in people aged 65 years and over, a decrease of 2.5% in people aged 15 to 64 years, and a decrease of 1.0% in children aged under 15 years. There has been an increase of 16.3% in people aged 65 years and over, a decrease of 1.9% in people aged 15 to 64 years, and a decrease of 1.1% in children aged under 15 years for the population in Rhondda Cynon Taf.

The Welsh Index of Multiple Deprivation (WIMD) ranks small areas (known as Lower Super Output Areas (LSOAs)) according to their relative deprivation levels across eight types of deprivation, and these are combined to produce an overall index. According to the 2019 WIMD, of the top 50% most deprived LSOAs in Wales, 110 are within RCT which accounts for 71.4% of those in the Local Authority and 5.8% of those in Wales. This is the third highest percentage of any Welsh local authority after Merthyr Tydfil and Blaenau Gwent. In relation to the community safety domain, WIMD data show that 58% of the LSOAs within RCT are within the 50% most deprived in Wales. This is the seventh highest of the 22 Welsh local authority areas.

3.2.2.2. INFLUENCE OF THE LFRMS ON POPULATION AND HUMAN HEALTH

Population increase within RCT will inevitably put pressure on, and demand the expansion of, the provision of accommodation and associated infrastructure to meet the needs of the local population. This will in itself prove a significant constraint upon any potential options being considered as part of the LFRMS. Whereby policy options should complement local development plans and ensure the needs of the population are met in a sustainable manner.

The Local Strategy will have a positive impact upon human health. Through the tangible benefits of reduced injuries/deaths from flooding incidents to the more

intangible aspects of stress and anxiety reduction for those living with the threat of flooding.

All Local Strategy objectives and measures will deliver significant determinants of health (economic, environmental, and social factors) benefits in terms of alleviating risk to people and properties, including more disadvantaged and vulnerable communities, from flooding, with associated whole community benefits to health and well-being. Robust, co-produced options appraisal and sensitive design of schemes (detailed in the Flood Action Plan of the LFRMS) will ensure that they benefit local communities and encourage opportunities to engage in healthy and active behaviours to maximise health and well-being, where appropriate. Where possible, the LFRMS should attempt to assist in the accessibility of green space for local residents.

3.2.3. Soil and Contaminated Land

3.2.3.1. Summary

Soils play a critical role in the quality of water within a catchment and the degree of surface/sub-surface runoff. Fundamentally, shallow, compacted soils will not retain and hence slow the response of rainfall events the degree that a deep, loosely compacted soil would. Thus, the permeability of a catchment soil has an influence on the overall rainfall-runoff catchment response.

The soils of Rhondda Cynon Taf reflect the geology, past and present climate, the geography and ecosystems, and the land-use history of the County Borough. In general, the upland plateau comprises ‘loamy acid permeable soils with a wet peaty surface’, on the highest ground there is a significant area of ‘deep acid peat soils’. In the border Vale, the more productive agricultural land is mostly on ‘well drained loamy soils’, with some ‘slowly permeable, seasonally wet, loamy and clayey soils’. These also occur on the valley floors within the coalfield as well as the more typical ‘slowly permeable, seasonally wet acid soils with a wet peaty surface’ (all descriptions from the simplified National Soil Map of Wales). There are also areas of exposed rock and scree and mineral spoil tips with minimal or very thin soil development.

The geology is dominated by the Upper Carboniferous rocks, in particular the South Wales Pennant Formation with its Coal Measures. Older Palaeozoic rocks are exposed around the rim of the Coalfield.

Minor outcrops of younger, Triassic rocks occur in the south of the borough near the M4. The coalfield plateau was shaped by the Tertiary uplift and the deep valleys were cut by the glaciers of the late Devensian glaciation. Boulder clay and other glacial debris overlie the rocks, periglacial and more recent landslips are also evident.

3.2.3.2. INFLUENCE OF THE LFRMS ON SOIL AND CONTAMINATED LAND

The Local Strategy will seek to maintain and where possible enhance soil quality within the County Borough. This process may develop as a by-product of specific techniques which additionally enhance flood risk management. Certain policies may have a degrading affect upon soil quality, for instance through construction activities to implement flood defence measures, but these are anticipated to be short term in nature.

The Local Strategy should be mindful of the constraints resulting from the presence of the many potentially contaminated brownfield sites within RCT. LFRMS options will, where possible, seek opportunities to enhance flood risk measures when re-development of brownfield sites is being considered.

3.2.4. WATER RESOURCES

3.2.4.1. SUMMARY

Water resources are primarily extracted from the major river systems (the Taf, Cynon, Rhondda and Clun), small minor reservoirs, and groundwater resources.

Many of the river catchments have or are recovering from historical degradation caused by the coal, iron and other industries. Given that historical industrial development largely occurred close to the riverbanks there has subsequently been extensive anthropogenic modifications made to the riparian zones with subsequent loss of habitat. Since the demise of heavy industry within RCT, there have been general improvements in water quality, in some instances allowing the return of salmon and the provision of spawning and nursery areas. However, rivers remain vulnerable to both diffuse and point source pollution from various catchment sources. Remnants of flows from abandoned mine workings can have detrimental effects on water quality but do benefit base flow to rivers in summer months.

Water quality issues attributable to the local sewer network (principally the issues resultant from the discharge of Combined Sewer Overflows (CSOs) and water quality issues downstream of water treatment works) are significant at some locations.

3.2.4.2. INFLUENCE OF THE LFRMS ON WATER RESOURCES

The Local Strategy is unlikely to have a profound effect on water resources within RCT. However, potential options to promote the use of Sustainable Drainage Systems (SuDS) that mimic natural drainage processes may enhance the availability of groundwater and prevent pollution reaching watercourses and aquifers. Reduction in the amount of sediment entering watercourses is also likely to be a by-product of implementing best-practice land management techniques and the greater use of SuDS.

Additionally, changes in flood frequency attributable to LFRMS objectives may assist in waterbodies attaining required WFD 'good' or 'no deterioration' status by, for example, reducing the amount of surface water entering combined sewer systems.

3.2.5. AIR QUALITY

The SEA undertaken in parallel with the Welsh Governments National Flood and Coastal Erosion Risk Management Strategy (National Strategy) stated that detrimental impacts on air quality attributable to the National Strategy were unlikely and it was subsequently scoped out of the assessment. Similarly, having undertaken the baseline assessment, it has been concluded that effects on air quality from the LFRMS are unlikely, and it is proposed to scope this theme out of the SEA assessment.

3.2.6. FLOODING

3.2.6.1. SUMMARY

Climate change is predicted to increase the frequency and the intensity of flooding, increasing the risk in RCT and across the UK. Flooding can have profound consequences including loss of life, damage to the economy, social implications, and environmental damage.

Local flooding, defined as flooding from surface water, ground water and ordinary watercourses such as small rivers, ditches and streams, has become more frequent in recent years.

Surface water flooding occurs when heavy rainfall exceeds the capacity of local drainage networks and water flows across the ground or water cannot enter the surface of the ground but has not yet entered a watercourse, drainage system or public sewer. Information on surface water flooding incidents has been obtained from a number of sources. Key sources of surface water records were from RCT's Flood Risk Management department, RCTCBC's Contact Centre, RCTCBC's Highways and Streetcare Depot and South Wales Fire and Rescue Service.

Groundwater flooding occurs as a result of water rising up from the underlying aquifer or from water flowing from normal springs. This tends to occur after long periods of sustained high rainfall, and the areas at most risk are often low-lying where the water table is more likely to be at shallow depth. Groundwater flooding is known to occur in areas underlain by principal aquifers, although increasingly it is also being associated with more localised floodplain sands and gravels.

Historic mining activities within Rhondda Cynon Taf have disrupted the "natural" groundwater regime within the coal measures and it is likely that the interconnection between many of the collieries has resulted in cross catchment "groundwater flow" in certain parts of Rhondda Cynon Taf. However, although the carboniferous limestone is recognised as a principal aquifer, and the coal measures and Triassic strata are secondary aquifers of local importance, the contribution of groundwater to even low flows is modest.

The Taff and Ely CFMP states that there is little documented evidence of groundwater flooding in the catchment and therefore the risk of flooding from this source is considered small, particularly at the catchment scale when compared to other sources.

Sewer flooding is often caused by excess surface water entering the drainage network. Welsh Water have provided data from their flood risk register which were analysed to investigate the occurrence of sewer flooding incidents across Rhondda Cynon Taf. It was found that there were a total of 279 sewers currently at risk of flooding that have been recorded by the water company. Of these, 93 had a 1 in 20 chance or greater of flooding. There are no records of properties affected by sewer flooding with significant consequences within Rhondda Cynon Taf.

As part of the requirements of the Flood Risk Regulations 2009, Rhondda Cynon Taf County Borough Council has produced its Preliminary Flood Risk Assessment (PFRA), which provides a high level overview of flood risk from local sources within the County Borough.

The PFRA included an analysis of historic flood risk which revealed that, based on existing flood records, nearly 12,000 flood incidents have been recorded in RCT from local sources.

An overview of future surface water flood risk has revealed that potentially in excess of 21,000 properties may be at risk from a 1 in 200 annual chance rainfall event.
The PFRA process also identifies areas of 'Indicative Flood Risk Areas' defined by key risk indicators and threshold values as laid out by DEFRA and the Welsh Government. Eight Indicative Flood Risk Areas have been defined in Wales, one of which falls within RCT. This Indicative Flood Risk Area covers approximately 41% of RCT (largely encompassing the valley bottoms), affects approximately 35,000 people, 2500 non-residential properties and 84 pieces of critical infrastructure.

3.2.6.2. INFLUENCE OF THE LFRMS ON FLOODING

The Local Strategy will, by definition, have a positive impact upon flooding in RCT. However, when developed in more detail, potential project options may advocate 'no intervention' policies whereby risk-based decisions are made not to manage flood risk in particular areas. Indeed, options to increase flooding in areas where necessary to protect downstream regions could potentially be advocated.

3.2.7. MATERIAL ASSETS

3.2.7.1. SUMMARY

Major transport links reflect the distinctive geography of RCT, with primary routes running along the valley bottoms. Key routes: the A470, A4119 and M4 trunk roads and the 'valley lines' railway network are all widely used by the population for commuting to work (both within and out of the County Borough). These routes are particularly vulnerable to disruption as a result of flooding incidents. Given that approximately 60% of the workforce of Rhondda Cynon Taf commute to work outside of the County Borough, then the wider economy remains vulnerable to substantial disruption during flood events.

There are approximately 92,000 dwellings currently in RCT, and the number of households in RCT is forecast to increase by 16.2% in the period 2003 to 2023 (Welsh Assembly Government – Household Projections 2006). This predicted need is a key consideration for RCT and is also likely to put additional pressure on the need to manage flood risk with regards to the protection of residential properties.

3.2.7.2. INFLUENCE OF THE LFRMS ON MATERIAL ASSETS

The Local Strategy has attempted to manage the flood risk to material assets, and it is therefore anticipated that the LFRMS will have a positive influence on infrastructure and assets. However, the protection of assets is likely to be prioritised differently and the extent of any positive effects may be variable.

3.2.8. CULTURAL HERITAGE

3.2.8.1. SUMMARY

RCT has 366 listed buildings and 16 conservation areas designated on the basis of their special architectural or historic interest.

The County Borough has a rich and diverse archaeological record including prehistoric burial cairns, a Roman Fort and more recent post-medieval examples of industrial heritage.

Rhondda Cynon Taf has 5 historic parks and gardens.

Two large areas of RCT have been identified as Special Historic Landscapes.

RCT has 86 designated Scheduled Ancient Monuments.

3.2.8.2. INFLUENCE OF THE LFRMS ON CULTURAL HERITAGE

The Local Strategy will endeavour to maintain, or where possible enhance the status of RCTs cultural heritage.

3.2.9. LANDSCAPES

3.2.9.1. SU

20 Special Landscape areas (SLAs) have been designated within RCT.

The Cynon Valley River Park Strategy (initiated in 2007) has been developed by RCTs Countryside Section in consultation with other bodes. Its aim is to encourage positive use and management of the River Cynon floodplain to provide space for natural processes, wildlife and people.

3.2.9.2. INFLUENCE OF THE LFRMS ON LANDSCAPES

The Local Strategy has the potential to have both positive and negative impacts on landscape features. For instance the construction of physical defences could have a detrimental impact on landscapes whilst the implementation of best-practice land management techniques for the principal benefit of flood risk management is likely to have secondary benefits for the wider environment.

3.3. STRATEGIC ENVIRONMENTAL OBJECTIVES

Key environmental issues have been identified and used correspondingly with the review of other relevant plans, policies and programmes to develop a set of SEA objectives. Tables 8 through to 16 summarises how the assessment of key plans, programmes and policies together with baseline information has been used to develop the SEA objectives.

3.3.1. SEA OBJECTIVE 1

Table 5: Defining SEA Objectives – Biodiversity, Flora and Fauna

Key Environmental Issue/Baseline Data	SEA Objective
Detailed Action Plans for each of the 30 habitats and 141 species important for wildlife in RCT have been drawn up. Within RCT (outside of the Brecon Beacons National Park) there are parts of three SACs: Blaen Cynon, Coedydd Nedd a Mellte and part of the Cardiff Beechwood SAC. There are 14 SSSIs within RCT. There are two LNRs within RCT: Glyncornol (Llwynypia) and Craig yr Hesg (Llantrisant). There are three Wildlife Trust for South Wales and West Wales Nature Reserves sites within RCT: Pwll Waun Cynon (Mountain Ash), Y Gweira (Llantrisant) and Brynna Woods/Llanharan Marsh (Llanharan). 183 SINCs have been designated within RCTs Local Development Plan.	**Protect and enhance biodiversity (biodiversity, flora and fauna)**

3.3.2. SEA Objectives

Table 6: Defining SEA Objectives – Population & Human Health

Key Environmental Issue/Baseline Data	SEA Objective
In Wales, the population grew by 1.4% or 44,000 people between 2011 and 2021 according to the ONS census population change. Rhondda Cynon Taf is the third most populous unitary authority in Wales after Cardiff and Swansea, with approximately 237,700 people. Rhondda Cynon Taf ranked third for total population out of 22 local authority areas in Wales, maintaining the same position it held a decade ago. As of 2021, Rhondda Cynon Taf is the eighth most densely populated of Wales' 22 local authority areas, with around four people living on each football pitch-sized area of land. to the national baseline. The health profile of RCT is largely worse than the average for Wales. Key identified issues include: • Life expectancy for both men and women is below the Welsh average; • RCT has *significantly higher* rates of obesity and mortality relative to the Welsh average value; • Alcohol consumption within RCT is *significantly higher* than the Welsh national average. Residents of RCT have relatively low availability of natural greenspace within their local communities.	**Provide opportunities to improve human health and avoid adverse effects on population (Population and Human Health)**

3.3.3. SEA Objective 3

Table 7: Defining SEA Objectives – Soil and Contaminated Land

Key Environmental Issue/Baseline Data	SEA Objective
Upland areas of RCT are in agricultural use, with potential attendant implications for soil degradation and near-surface compaction if best-practice land management techniques are not implemented. Agricultural land in RCT is largely Grade 4 or Grade 5.	**Protect and enhance land quality (soil and contaminated land)**

3.3.4. SEA Objective 4

Table 8: Defining SEA Objectives – Water Resources

Key Environmental Issue/Baseline Data	SEA Objective
Main Rivers within RCT are the Rivers, Taff, Rhondda, Cynon and Clun. The water resource availability status over most of RCT has been designated as *over licensed* at low flows. The majority of RCT is underlain by either Sandstone or Carboniferous Limestone units which are capable of supporting significant yields, but are currently not used to their full potential. Surface water monitoring results against parameters defined in the WFD, are variable throughout the County Borough. Particular problems exist with regards to the discharge of CSOs. There numerous water related SSSIs within RCT, in addition to two water related SACs at Cwm Cadlan and Blaen Cynon.	**Protect and enhance water environment (water resources)**

3.3.5. SEA Objective 5

Table 9: Defining SEA Objectives – Flooding

Key Environmental Issue/Baseline Data	SEA Objective
Significant levels of surface water flood risk identified within RCT. Approximately 12,000 recorded incidences of flooding from local sources Approximately 21,000 properties at risk from a 1 in 200 annual chance event.	**Minimise the risk of flooding**

3.3.6. SEA Objective 6

Table 10: Defining SEA Objectives – Material Assets

Key Environmental Issue/Baseline Data	SEA Objective
Major transport links reflect the distinctive geography of RCT, with primary routes running along the valley bottoms. Key routes: the A470, A4119 and M4 trunk roads and the 'valley lines' railway network are all widely used by the population for commuting to work (both within and out of the County Borough). These routes are particularly vulnerable to disruption as a result of flooding incidents.	**Protect existing and proposed infrastructure (material assets)**

3.3.7. SEA Objective 7

Table 11: Defining SEA Objectives – Cultural Heritage

Key Environmental Issue/Baseline Data	SEA Objective
RCT has 366 listed buildings and 16 conservation areas designated on the basis of their special architectural or historic interest. The County Borough has a rich and diverse archaeological record including prehistoric burial cairns, a Roman Fort and more recent post-medieval examples of industrial heritage. RCT has 86 designated Scheduled Ancient Monuments	**Sustainably manage the cultural environment (cultural heritage)**

3.3.8. SEA Objective 8

Table 12: Defining SEA Objectives – Landscapes

Key Environmental Issue/Baseline Data	SEA Objective
Two large areas of RCT have been identified as Special Historic Landscape Areas: The Rhondda Fawr; and East Fforest Fawr and Mynydd-y-glog.	**Protect and enhance landscape character/visual amenity**

3.3.9. SEA Objective 9

Table 13: Defining SEA Objectives – Climatic Factors

Key Environmental Issue/Baseline Data	SEA Objective
By 2050 it is anticipated that Wales is likely to experience an increase in temperature of between 2.0 °C and 2.5°C. It is anticipated that river flood flows within the Severn River Basin District are likely to increase by 20% up to 2050. Across Wales, extreme daily rainfall is anticipated to increase by 10% by 2050. The ecological footprint per capita has decreased since 2003 and is below both the Welsh and UK average. Climate change will likely place increasing pressure on flood risk management regimes.	**Mitigate impacts from climate change (climatic factors)**

3.4. STRATEGIC ENVIRONMENTAL ASSESSMENT FRAMEWORK

The SEA framework presented in Table 17 has been developed based on the information gathered thus far, and shows the relationship between the following:

- Each of the identified SEA objectives.
- The source of each of the SEA objectives.
- The key questions that have to be asked of each LFRMS policy to assess its relationship with the SEA objectives; and
- The indicators to be used to monitor the success of the LFRMS.

able 14: Strategic ironm al Assessment Framewor d Pote l Indicat

SEA Objective	Relevant Pla Stra gies and Pr amme	Key Q stions	Potential Indicators
1) To protect and enhance biodiversity	*Action for Nature*: A Local Biodiversity Action Plan for Rhondda Cynon Taf (LBAP)	W LFR p ect and enhance biodiversity across RCT? Does the LFRMS seek to protect and/or enhance national/international designated sites? Does the LFRMS seek to conserve and/or enhance natural/semi-natural habitats? Does the LFRMS conserve and/or enhance species diversity, and in particular avoid harm to protected species?	Ch es in condition to designated sites Achievement of biodiversity action plan targets Ecological potential assessments Chemical and ecological condition of rivers. Requirements for habitat enhancement and/or compensation arising out of the LFRMS
2) To protect and enhance human health and well being	*Health, Social Care and Well-Being Strategy 2011-2014*, Rhondda Cynon Taf County Borough Council *Live. Grow. Aspire. Achieve: Rhondda Cynon Taf Community Strategy 2010-2020*, Rhondda Cynon Taf County Borough Council *Our Living Space-An Environmental Improvement Strategy for RCT*,	Will the LFRMS have an adverse impact upon human health? Will the LFRMS seek to preserve areas with an amenity use?	Number of properties/businesses at risk of flooding Number of developments permitted contrary to EA advice Area/number of recreational and amenity facilities effected by flooding incidents

SEA Objective	Relevant Pla Stra es and Pro mme	Key Q stions	Potential Indicators
	Rhondda Cynon County rough Council		ange in area/number/quality of lic open spaces, recreational and facilities Number of flood related injuries
3) To protect land quality	*Rhondda Cynon Taf Landscape Strategy,* Rhondda Cynon Taf County Borough Council *Soil, a precious resource – our strategy for protecting, managing and restoring soil*, Environment Agency	Will the LFRMS have an adverse impact upon the best and most versatile agricultural land?	Area/number of incidences where Grade 1,2 or 3 soil lost due to need for flood defence
4) To maintain and enhance water resources and quality	*Water for Life and Livelihoods: River Basin Management Plan, Severn River Basin District*, Environment Agency *Taff and Ely Catchment Abstraction Management Strategy (CAMS)*, Environment Agency	Will the LFRMS have an adverse impact on water resources? Will the LFRMS enhance water resources? Will the LFRMS have an adverse impact upon water quality?	Ecological status of rivers Chemical status of rivers Resource availability status for surface water and groundwater in Catchment Abstraction Management Strategy Areas Maintenance or enhancement of existing surface water and groundwater regimes. Resource availability status at low flows for units of surface water and/or

SEA Objective	Relevant Pla Stra es and Pro mme	Key Q stions	Potential Indicators
			face water combined with undwater in Catchment ction Management Strategy Areas Condition of water bodies (Water Framework Directive)
5) To minimise the risk of flooding	*Rhondda Cynon Taf Preliminary Flood Risk Assessment,* Rhondda Cynon Taf County Borough Council *National Strategy for Flood and Coastal Erosion Risk Management in Wales*, Welsh Government *Technical Advice Note TAN 15: Development and Flood Risk*, Welsh Government *Taff and Ely Catchment Flood Management Plan*, Environment Agency	Will the LFRMS reduce the risk of flooding? Will the LFRMS have a reducing effect on the impact of flooding? Does the LFRMS encourage the implementation of sustainable drainage systems?	Number of properties/businesses at risk of flooding Number of flood defences developed Number of sustainable drainage systems implemented since the publication of the LFRMS
6) To ensure the potential impact of flooding on existing and future infrastructure is minimised	*Rhondda Cynon Taf County Borough Council Local Development Plan 2006-2021*, Rhondda Cynon Taf County Borough Council	Will the LFRMS ensure the protection of important transport infrastructure? Will the LFRMS ensure the protection of services including water, power and telecommunications?	Number and severity of incidents leading to disruption or damage to transport infrastructure.

SEA Objective	Relevant Pla Stra es and Pro mme	Key Q stions	Potential Indicators
	Rhondda Cynon Local T sport Plan, Rhondda on Taf C nty *Regional Transport Plan*, SEWTA *Housing Matters: A Local Housing Strategy for Rhondda Cynon Taf*, Rhondda Cynon Taf County Borough Council	D the LFRMS sure th a uate draina f surfac w Does the LFRMS encourage the implementation of sustainable drainage systems?	mber and severity of incidents ding to disruption or damage to provision. Number of days lost by industry due to access problems.
7) To maintain and/or enhance the cultural heritage of RCT	*Planning (Listed Buildings and Conservation Areas) Act 1980* *Ancient Monuments and Archaeological Areas Act 1979*	Will the LFRMS have an adverse impact upon local historic assets?	Number of listed buildings at risk of flooding events Number of flood defences/strategies implemented to protect listed buildings since the LFRMS was published Number and condition of conservation areas Number and condition of registered historic parks and gardens
8) To protect/enhance landscape	*Rhondda Cynon Taf Landscape Strategy*, Rhondda Cynon Taf County Borough Council	Does the LFRMS seek to protect and/or enhance national/international designated sites?	Number of proposed and actual flood mitigation developments to be located within landscapes with a high sensitivity.

SEA Objective	Relevant Pla Stra es and Pro mme	Key Q stions	Potential Indicators
		D the LFRMS ek to e nce t ange and q y of the lic re nd e es?	
9) To adapt to the impacts of climate change	*Climate Change Strategy for Wales,* Welsh Government	What impact will the LFRMS have upon RCTS vulnerability to the impacts of climate change?	Indicative floodplains under current conditions and under climate change scenarios and the developments occurring within.

4. SEA ASSESSMENT METHODOLOGY

The Strategic Environmental Assessment Directive requires "the likely significant effects on the environment of implementing the strategy and reasonable alternatives taking into account the objectives and the geographical scope of the strategy" (Article 5.1).

This section aims to outline how the SEA Assessment was undertaken in parallel with the development of the Local Strategy and presents the methodology used to undertake the SEA Assessment.

4.1. LFRMS/SEA STAGES

The development of the draft Local Strategy was undertaken in parallel with the SEA process. Table 18 presents the various stages undertaken in the LFRMS and how the SEA has inputted into this development process.

Table 15: Principal stages in the LFRMS development process and SEA activities

LFRMS Stage	Description	Strategic Environmental Assessment (SEA) Activities
Characterisation of flooding and wider environmental issues within RCT and at a wider catchment scale.	Developing an understanding of the local flood risk within RCT.	The Scoping work for the SEA process was undertaken alongside the data gathering phase of the LFRMS.
Objective setting for managing flood risk.	Developing a set of objectives to manage flood risk and achieve, where possible, improvements to the wider environment.	Main stage (this report) of the SEA process was undertaken alongside the objective setting for the Draft LFRMS.

4.2. SCENARIOS

Given the high-level nature of the Local Strategy, which sets out objectives undefined in terms of their spatial and geographical extent, it is difficult at this point in time to develop a set of *"reasonable alternatives"* or scenarios to the objectives presented in the Local Strategy.

Rather than undertake an SEA assessment which incorporates an alternative scenario, RCTCBC proposed to undertake the SEA assessment by comparing the preferred approach against the 'do nothing' scenario. The 'do nothing' scenario essentially represents the future state of the environment without implementation of the Local Strategy. Given that the Local Strategy is likely to generate further, more detailed plans and projects, it would be anticipated that assessment of alternative scenarios would be undertaken during any SEA process carried out at the appropriate point in the future.

4.3. Assessment Methodology

The SEA will assess the likely environmental effects of Local Strategy objectives against the SEA objectives selected in the SEA Framework. An additional assessment of the likely state of the environment under the 'do nothing' scenario will be undertaken.

It is proposed that each assessment will be presented in a tabular format as per Table 19. Impacts will be colour coded as indicated below:

Colour	Impact
++	Major Positive
+	Positive
0	No Impact
/	Uncertain
-	Negative
--	Major Negative

Table 16: Example of SEA Assessment Matrix

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	0	0	0	0	0	0	0	0
	Med	-	0	-	0	0	-	0	-	-
	Long	-	--	-	-	--	--	-	-	--
Implement LFRMS Objective	**Short**	0	+	0	+	0	+	0	0	0
	Med	+	++	+	+	0	+	+	+	+
	Long	+	++	+	+	+	+	+	+	+
Summary *A brief summary of the primary positive and negative effects of each objective will be provided here.*										

The SEA will reflect the timescale over which the policies, objectives and strategies of the Local Strategy will be implemented. It is intended that three time periods will be used to reflect this in the assessment of the Local Strategy. These time periods are indicated as S, M and L in the matrix above which represent:

- S – Short term – Present to 2029
- M – Medium term – 2029 to 2044
- L – Long term – 2044 and beyond

5. LOCAL FLOOD RISK MANAGEMENT STRATEGY OBJECTIVES

This section presents the detailed Local Strategy Objectives and gives an insight as to how they were developed, with particular regard to other, overarching strategies and policies.

5.1. DETAILED LFRMS STRATEGIC OBJECTIVES

RCT's Local Strategy presents sixteen strategic objectives which outline how the Authority intends to manage flood risk within this LFRMS cycle. These objectives adhere to the objectives set out in the Welsh Government's National Strategy for Flood and Coastal Erosion Risk Management. The table below presents these objectives in detail.

Table 17: LFRMS Strategic Objectives

RCTCBC Detailed LFRMS Objectives	
1	Reduce distress by decreasing the number of people exposed to the risk of flooding
2	Reduce community disruption by reducing the number of residential and commercial properties exposed to the risk of flooding
3	Reduce risk to life by reducing the number of people exposed to risk of flooding of significant depth and velocity.
4	Reduce disruption caused by severe weather to critical infrastructure and essential services
5	Improve or not detrimentally affect water quality
6	Identify opportunities that work with natural processes to reduce the risk of flooding
7	Maintain, or where possible, improve the status of Special Areas of Conservation (SACs), Sites of Special Scientific Interest (SSSIs), Sites of Importance for Nature and Conservation (SINC) sites and contribute to the RCT's 'Action for Nature' (Local Nature Recovery Plan) plan.
8	Improve our understanding of local flood risk in RCT and how this risk may be impacted by climate change in the future.
9	Develop effective communication tools to share information and improve individual and community awareness of local flood risks and how they can be managed proactively
10	Improve individual and communities' ability to prepare, respond and recover to the impacts of flooding
11	Ensure that RCT work in partnership with Risk Management Authorities and other stakeholders to holistically manage the risk of flooding

RCT LSC Detailed LFRMS Objectives	
12	Ensure flood risk management functions are co-ordinated and delivered in a sustainable way
13	Ensure that investment decisions for flood risk management schemes are prioritised utilising a risk-based approach

6. ASSESSMENT OF LOCAL FLOOD RISK MANAGEMENT STRATEGY OBJECTIVES

This section presents the assessment of the Local Strategy objectives against SEA objectives for both a 'do nothing' and 'implement strategy' scenarios. An assessment of secondary and synergistic effects is additionally presented.

6.1. ASSESSMENT OF OBJECTIVES

There are thirteen strategic objectives presented within RCTCBCs Local Strategy. The ensuing sections assess the likely impact of each of the Local Strategy objectives in accordance with the framework outline in 4.4.

7.1.1 Local Strategy Objective 1 Reduce distress by decreasing the number of people exposed to the risk of flooding

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	-	0	0	-	-	0	0	0
	Med	0	-	0	0	--	-	0	-	-
	Long	-	--	-	-	--	--	0	-	--
Implement LFRMS Objective	**Short**	0	+	0	+	+	+	0	0	0
	Med	+	++	+	+	+	+	+	+	+
	Long	+	++	+	+	+	+	+	+	+

Summary of significant environmental effects

As an objective which has particular regard to reducing the intangible effects on human health attributable to the threat, as well as actual effects of flooding, there is a strong, positive impact on SEA Objective 2 (*to protect and enhance human health and wellbeing*). This positive impact is likely to increase over time as the predicted effects of climate change materialise. Due to the direct effect on reducing the risk of flooding that this objective has, it has positive effects on a number of other SEA objectives.

The 'Do Nothing' scenario assumes that the status of a number of SEA objectives would worsen over time as the likelihood and frequency of flooding increases.

7.1.2 Local Strategy Objective 2 Reduce community disruption by reducing the number of residential and commercial property exposed to the risk of flooding

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	-	0	0	-	-	0	0	0
	Med	0	-	0	0	--	-	0	-	-
	Long	-	--	-	-	--	--	0	-	--
Implement LFRMS Objective	**Short**	0	+	0	+	+	+	0	0	0
	Med	+	++	+	+	++	++	+	+	+
	Long	+	++	++	++	++	++	+	++	++

Summary of significant environmental effects

As an objective which results in a direct reduction if flood risk, it has multiple positive effects across multiple SEA objectives. This positive impact is likely to increase over time as the predicted effects of climate change materialise.

The 'Do Nothing' scenario assumes that the status of a number of SEA objectives would worsen over time as the likelihood and frequency of flooding increases.

7.1.3 Local Strategy Objective 3: Reduce risk to life by reducing the number of people exposed to risk of flooding of significant depth and velocity

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	-	0	0	-	-	0	0	0
	Med	-	--	-	0	--	--	0	0	0
	Long	-	--	-	0	--	--	0	-	-
Implement LFRMS Objective	**Short**	0	+	0	0	+	+	0	0	0
	Med	+	++	+	0	++	++	0	0	+
	Long	+	++	++	+	++	++	+	+	+

Summary of significant environmental effects

Reducing the risk to life by reducing the number of people exposed to the risk of flooding of significant depth and velocity will obviously have a positive impact on SEA objectives 2, 5 & 6. Secondary positive effects on other SEA objectives will additionally materialise as a consequence of the direct reduction in flood risk.

7.1.4 Local Strategy Objective 4: Reduce disruption caused by severe weather to critical infrastructure and essential services

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	0	0	0	-	--	0	0	0
	Med	0	-	0	0	--	--	0	0	-
	Long	-	-	-	-	--	--	0	-	-
Implement LFRMS Objective	**Short**	0	+	0	0	+	++	0	0	0
	Med	0	+		0	++	++	0	0	+
	Long	+	++	+	+	++	++	+	+	+

Summary of significant environmental effects

This particular objective has strong, positive impacts upon SEA objectives 5 & 6, which concern the *minimisation of flood risk* and *ensuring that the potential impact of flooding on existing and future infrastructure is minimised*. There is also a positive impact upon SEA objective 2 attributable to the likely positive impact on human health and wellbeing as a result of less disruption to infrastructure.

7.1.5 Local Strategy Objective 5: Improve and sustainably enhance water quality

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	0	0	-	0	0	0	0	0
	Med	-	-	0	--	0	0	0	-	-
	Long	-	--	-	--	-	0	0	--	-
Implement LFRMS Objective	**Short**	0	+	0	+	0	0	0	+	0
	Med	+	++	0	++	0	0	0	++	0
	Long	++	++	+	++	+	+	+	++	+

Summary of significant environmental effects

Strong, positive impacts are evident on SEA objectives concerning the *protection and enhancement of human health*, *maintenance and enhancement of water resources* and the *protection and enhancement of landscape*. There are also likely to be secondary positive effects on *biodiversity* and to a lesser extent *land quality*.

7.1.6 Local Strategy Objective 6 Identify opportunities that work with natural processes to reduce the risk of flooding

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	0	0	0	0	0	0	0	0
	Med	-	0	-	-	-	0	0	-	-
	Long	-	-	-	-	-	-	0	-	-
Implement LFRMS Objective	**Short**	++	0	0	0	+	0	0	++	0
	Med	++	+	+	+	+	+	0	++	+
	Long	++	+	++	+	++	+	+	++	+

Summary of significant environmental effects

As expected, strong, positive impacts will occur to SEA objectives 1 & 8 which concern the *protection and enhancement of biodiversity* and the *protection and enhancement of landscape*.

7.1.7 Local Strategy Objective 7 Maintain, where possible, improve the status of Special Areas of Conservation (SACs), Sites of Special Scientific Interest (SSSIs), Sites of Importance for Nature and Conservation (SINC) sites and contribute to the RCT's Local Biodiversity Action Plan.

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	0	0	0	0	0	0	0	0
	Med	-	-	-	-	-	0	0	-	-
	Long	--	-	-	-	-	-	0	--	--
Implement LFRMS Objective	**Short**	++	+	+	+	+	0	0	++	+
	Med	++	+	+	+	+	0	0	++	+
	Long	++	++	++	++	+	+	+	++	++

Summary of significant environmental effects

As a result of this objective, a strong, positive impact on *landscape* features within RCT will result. There will likely be secondary positive impacts on *the protection and enhancement of biodiversity, the protection of land quality* and *the minimisation of risk to flooding*.

7.1.8 Local Strategy Objective 8 Improve our understanding of local flood risk in RCT and how this risk may be impacted by climate change in the future.

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	0	0	0	0	0	0	0	0
	Med	-	-	-	-	-	0	0	-	-
	Long	--	-	-	-	-	-	0	--	--
Implement LFRMS Objective	**Short**	++	+	+	+	+	0	0	++	+
	Med	++	+	+	+	+	0	0	++	+
	Long	++	++	++	++	+	+	+	++	++

Summary of significant environmental effects

The most prominent positive impacts are on *biodiversity* and *landscape* features. There will likely be secondary positive impacts on *human health* and the *maintenance and enhancement of water resources and quality*.

7.1.9 Local Strategy Objective 9 Develop effective communication tools to share information and improve individual and community awareness of local flood risks and how they can be managed proactively

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	-	0	0	-	-	0	0	0
	Med	0	-	0	0	--	-	0	-	-
	Long	-	--	-	-	--	--	0	-	--
Implement LFRMS Objective	**Short**	0	+	0	+	+	+	0	0	0
	Med	+	++	+	+	+	+	+	+	+
	Long	+	++	+	+	+	+	+	+	+

Summary of significant environmental effects

With a particular focus on safeguarding *human health and well-being* by developing effective communication for flood risk management, the objective will significantly contribute to the achievement of SEA Objective 2. As the projected effects of climate change become more apparent, the positive influence of our efforts is expected to grow even stronger.

7.1.10 Local Strategy Objective 10 Improve individual and communities' ability to prepare, respond and recover to the impacts of flooding

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	0	0	0	0	0	0	0	0
	Med	0	0	0	0	-	-	0	0	-
	Long	0	-	-	-	--	-	0	-	-
Implement LFRMS Objective	**Short**	0	0	0	0	0		0	+	0
	Med	0	0	0	0	+	+	0	+	+
	Long	0	+	+	+	++	+	+	+	+

Summary of significant environmental effects

By ensuring that everyone is aware of how prepare, respond, and recover to flood will be a key component in the minimisation of flood risk. Hence, the primary positive impact is on SEA objective 5, *minimise the risk of flooding*, as well as a positive impacts to the protection and enhancement of *human health and wellbeing*.

7.1.11 Local Strategy Objective 11 Ensure that RCT work in partnership with Risk Management Authorities and other stakeholders to holistically manage the risk of flooding

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	0	0	0	0	0	0	0	0
	Med	0	0	0	0	-	-	0	0	-
	Long	0	-	-	-	--	-	0	-	-
Implement LFRMS Objective	**Short**	0	0	0	0	0		0	+	0
	Med	0	0	0	0	+	+	0	+	+
	Long	0	+	+	+	++	+	+	+	+

Summary of significant environmental effects

By ensuring that everyone is aware of their roles on flood risk management will assist in the minimisation of flood risk. Hence, the primary positive impact is on SEA objective 5, *minimise the risk of flooding* and positive impacts to the protection and enhancement of *human health and wellbeing*.

7.1.12 Local Strategy Objective 12 Ensure flood risk management functions are considered and delivered in a sustainable way

	SEA Objective								
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	0	0	0	0	0	0	0	0
	Med	-	-	-	-	-	-	0	-	-
	Long	-	-	--	-	--	--	0	--	--
Implement LFRMS Objective	**Short**	+	+	++	+	+	+	0	++	+
	Med	++	+	++	++	++	++	0	++	++
	Long	++	+	++	++	++	++	+	++	++

Summary of significant environmental effects

Positive impacts across a wide range of environmental topics are likely to result as a consequence of implementing innovative land management techniques. Prominent impacts occur to *the protection of land quality* and the protection/enhancement of landscapes which will enhance the characteristics of land and soils.

7.1.13 Local Strategy Objective 1: Ensure that investment decisions for flood risk management schemes are prioritised utilising a risk-based approach

	SEA Objective									
	Timeframe	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Do Nothing	**Short**	**0**	**-**	**0**	**0**	**-**	**-**	**0**	**0**	**0**
	Med	**-**	**--**	**-**	**-**	**--**	**--**	**0**	**-**	**-**
	Long	**--**	**--**	**--**	**-**	**--**	**--**	**0**	**--**	**--**
Implement LFRMS Objective	**Short**	**+**	**+**	**+**	**+**	**++**	**+**	**0**	**+**	**+**
	Med	**+**	**++**	**+**	**+**	**++**	**++**	**+**	**+**	**+**
	Long	**++**	**++**	**++**	**+**	**++**	**++**	**+**	**++**	**++**

Summary of significant environmental effects

It is likely that the production of flood risk investment decisions will have a strong positive influence on the SEA objectives given that these plans will effectively pull together a large number of the flood risk management policies and measures and will provide a mechanism for these to be directly implemented to those areas that are at the most risk of flooding.

6.2. SUMMARY OF ASSESSMENT OF LOCAL STRATEGY

An attempt has been made to summarise the likely environmental effects of implementing the Local Strategy as a whole and is presented below

	SEA Objective									
	Timeframe	1	2	3	4	5	6	7	8	9
Do Nothing	**Short**	0	0	0	0	0	0	0	0	0
	Med	0	0	0	0	0	0	0	0	0
	Long	0	0	0	0	0	0	0	0	0
Implement LFRMS	**Short**	0	+	+	+	0	+	+	+	0
	Med	0	+	+	+	0	+	+	+	0
	Long	0	+	+	+	0	+	+	+	0

As is to be expected, the Local Strategy has particularly strong, positive environmental effects of SEA objectives concerning the:

- *protection and enhancement of human health and well being* – which can be attributed to a number of factors such as the reduction in anxiety/stress brought about through flooding incidents, and the strong emphasis placed on utilising land management techniques which has the has the potential to increase accessibility to open spaces.
- *minimise the risk of flooding ensuring the potential impact of flooding on existing and future infrastructure is minimised*.

6.3. SIGNIFICANT SECONDARY AND SYNERGISTIC EFFECTS

The Strategic Environmental Assessment Directive requires the assessment of synergistic and cumulative effects of a strategy – effects which interact in such a way to form significant positive/negative environmental effects. A summary of the additional cumulative/synergistic significant environmental effects likely to arise from implementation of the Local Strategy is summarised in Table 21 according to SEA theme.

Secondary/Significant Environmental Effects

SEA Theme	Significant Synergistic/Secondary Environmental Effects
Biodiversity, Flora & Fauna	Where potential exists, the Local Strategy will compliment RCTCBC Local Biodiversity Action Plan. For instance opportunities to incorporate habitat enhancements into flood risk management measures will be sought where possible.
Population & Human Health	The Local Strategy shows a high degree of synergy with RCTCBCs Community Strategy, particularly with regards to ambitions to reduce health inequalities by: i) potentially increasing access/availability of open spaces which in turn improve mental and physical well being; and ii) reducing stress and anxiety caused by the both the perceived threat and actual occurrence of flooding. The Local Strategy will also contribute to ensuring that residents of RCT are prepared for how climate change is likely to affect local communities
Soil	By implementing SuDS and innovative land management techniques there is likely to be a beneficial impact on soil quality and sustainable use of soil resources. Thus there is likely to be a certain degree of synergy with the Environment Agency Strategy for *Soil, a precious resource – our strategy for protecting, managing and restoring soil*.
Water & Flooding	There are obvious synergies with environmental and Water Framework Directive objectives contained within overarching strategies, most notably the River Severn Catchment Flood Management Plan.
Material Assets	The SEA did not identify any significant environmental effects for this theme.
Cultural Heritage	The SEA did not identify any significant environmental effects for this theme.
Landscapes	The Local Strategy has the potential to provide a high degree of synergy with complimentary strategies whose primary focus is the enhancements of landscapes.

6.4. PROPOSED MONITORING

Upon finalisation and adoption of the draft Local Strategy, Article 10 (1) of the Strategic Environmental Assessment requires monitoring of significant environmental effects.

RCTCBC will attempt to utilise existing monitoring protocols to meet the monitoring requirements of the Strategic Environmental Assessment process. Table 22 presents the proposed monitoring measures. Whilst using existing monitoring measures will give an indication of wider environmental trends, it is unlikely that these measures will directly pick up the effects of Local Strategy policies due to the impact of other influences.

Table [illegible]: Proposed Monitoring

SEA Theme	Proposed Monitoring
Biodiversity, Flora & Fauna	Changes in condition to designated sites
	Achievement of biodiversity action plan targets
	Ecological potential assessments
	Chemical and ecological condition of rivers.
	Requirements for habitat enhancement and/or compensation arising out of the Local Strategy
Population & Human Health	Number of properties/businesses at risk of flooding
	Number of developments permitted contrary to EA advice
	Area/number of recreational and amenity facilities effected by flooding incidents
	Change in area/number/quality of public open spaces, recreational and amenity facilities
	Number of flood related injuries
Soil	Area/number of incidences where Grade 1,2 or 3 soil lost due to need for flood defence
Water	Resource availability status for surface water and groundwater in Catchment Abstraction Management Strategy Areas
	Maintenance or enhancement of existing surface water and groundwater regimes
	Resource availability status at low flows for units of surface water and/or surface water combined with groundwater in Catchment Abstraction Management Strategy Areas
	Condition of water bodies (Water Framework Directive)
Flooding	Number of properties/businesses at risk of flooding
	Number of flood defences developed
	Number of sustainable drainage systems implemented since the publication of the LFRMS
Material Assets	Number and severity of incidents leading to disruption or damage to transport infrastructure.
	Number and severity of incidents leading to disruption or damage to service provision
	Number of days lost by industry due to access problems
Cultural Heritage	Number of listed buildings at risk of flooding events
	Number of flood defences/strategies implemented to protect listed buildings since the Local Strategy was published
	Number and condition of conservation areas
	Number and condition of registered historic parks and gardens

SEA Theme	Proposed Monitoring
Landscapes	Number of proposed and actual flood mitigation developments to be located within landscapes with a high sensitivity.

7. FUTURE SEA ACTIVITIES

This Environmental Report concludes the principal stage of the Rhondda Cynon Taf County Borough Council's Local Strategy. Additional assessment may be required if changes to draft Strategy required subject to the completion of the consultation period result in additional/or significantly alter the significant environmental effects described in this report.

An additional statement will be published upon adoption of the final Local Strategy highlighting how consultation responses have influenced the Final Strategy in addition to finalising the monitoring requirements.