MOTT MACDONALD

Lowestoft Flood Risk

Economic Footprint and Impact Report

May 2022

Mott MacDonald
10 Fleet Place
London EC4M 7RB
United Kingdom

T +44 (0)20 7651 0300
mottmac.com

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Executive summary

Introduction

Mott MacDonald was previously appointed by Waveney District Council in December 2014 to undertake an assessment of the economic footprint of the Central Lowestoft area around Lake Lothing and to quantify the level of economic activity that would be protected in the area by future flood mitigation and alleviation works. Allied to this was an economic impact assessment of the potential future development that could be accommodated, and protected by the flood mitigation and alleviation works, on sites around Lake Lothing. The previous commission was used to support the case for investment in flood defences at Lowestoft and supported a successful £10 million LGF funding ask from New Anglia Local Enterprise Partnership (LEP). In October 2021, Mott MacDonald was commissioned via Coastal Partnership East on behalf of East Suffolk Council to update the original report updated for the present day. This report will be used to provide an additional evidence base demonstrating the wider economic benefits of the proposed flood defences at Lowestoft for the local and regional economy.

The study has been commissioned because existing methods of investment appraisal for flood defences do not capture the economic benefits from employment land, jobs and Gross Value Added (GVA), nor do they include development on land that is presently vacant or under-utilised. The methods used in this study provide a way of identifying and articulating the economic benefits of flood protection measures.

Lowestoft is located in an area of the East of England that is very vulnerable to flooding. The largest flood event was caused by the 1953 North Sea storm surge. This caused widespread flood damage to the UK and Netherlands resulting in over 300 deaths in the UK. Coastal defences were breached with a peak water level recorded at Lowestoft of 3.35m Above Ordnance Datum (AOD) causing flooding of over 400 properties. The event at Lowestoft was estimated to have a 1 in 250 year return period (RP) and triggered increased awareness of coastal flood risk in the UK and monitoring of water levels including storm surges. In addition in recent years there were two major flood events in 2007 and 2013 that caused widespread damage to properties and businesses in the area, once again bringing flood alleviation to the forefront of the policy agenda.

The significance of flooding within the Lowestoft area is enhanced by its prominence within the local and wider economy. Lowestoft is an important economic hub and this is reflected in local and sub-regional planning and economic development strategy and policy. In particular, the area around Lake Lothing is outlined as a key focus of strategic regeneration as was originally set out in the Lake Lothing Area Action Plan (AAP) and continued within the latest adopted Local Plan (2019). In addition, the production of the Town Centre Masterplan and the successful award of Towns Fund funding demonstrates the regeneration activities taking place to revitalise the town centre post pandemic. The major regeneration plans for Central and Coastal Lowestoft outlined in these documents increase the need to protect the area from flooding in the future.

Lowestoft is designated as a growth area at national, sub-regional and local level as evidenced by its Enterprise Zone (EZ) status, description in the LEP's growth ambitions and through the local planning policy framework. The area around Lake Lothing has long been considered a strategically important area for regeneration which can help to drive forward the town's economic growth by transforming former industrial sites which are now derelict or underutilised. These areas will support future residential and commercial development, but also provide an opportunity to further develop the town's strengths in offshore renewables, offshore related

engineering and port related services which are well aligned to central government's 'clean growth' and 'levelling up' agenda. Lowestoft has a unique opportunity to harness its strategic location and existing strengths in the clean energy sector to be a core part of the UK's Green Industrial Revolution which can simultaneously help Lowestoft to 'Level Up' improving the supply of new high skilled jobs.

Introducing flood alleviation and mitigation measures would serve to protect the existing economic footprint of the area, the main focus of economic activity in Waveney, and support future economic development and growth. The future growth scenarios set out in local planning policy reinforce the importance of the area to the local economy and to nationally significant sectors such as the offshore energy sector.

Method and Approach

The current and future economic footprint of the study area has been calculated using Mott MacDonald's in-house Transparent Economic Assessment Model (TEAM) to estimate the level of gross direct jobs that are present in the area and the indirect (supply chain) and induced (consumption-related) jobs that are linked to the direct economic activity in the area. TEAM is a versatile tool designed to calculate the economic impact of proposed infrastructure intervention and policy measures. It has been designed by experts in economics, economic development, planning and regeneration and is in-line with HM Treasury *Green Book*[1] principles and Homes & Communities Agency's (HCA) *Additionality*[2] guidelines.

TEAM has been run for two scenarios, as follows:

- **Existing position**. Analysis of the existing position based on current land use patterns and amount of economic activity estimated on each site.
- **Future position.** Assessment of economic activity associated with future development and land utilisation anticipated based on policy in the Local Plan.

GIS analysis has been undertaken to assess the level of economic activity at risk in the event of a 1 in 200-year flood event. These flood extents have been provided by Jacobs. Following consultation with Coastal Partnership East and East Suffolk Council the analysis in this report has sought to analyse the economic activity at risk under two flood risk modelled scenarios:

- Scenario 1 (Do Nothing)
- Scenario 2 (Do something with Preferred Tidal defence barrier).

Current economic footprint

Our study identifies that the study area is already a locus of economic activity. The contribution the area makes to the local economy is substantive, our estimates of the current economic footprint suggest that the study area:

- accommodates 6,400 direct jobs: and,
- these jobs generate £0.3bn (£342m) of GVA per annum.

Using GIS analysis, we calculated that for:

- Scenario 1 – under the Do-Nothing situation for the 1 in 200-year event, up to:
  - 30% of jobs and 30% of GVA within the current economic footprint are at risk of flooding under the flood extents.

[1] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf
[2] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/378177/additionality_guide_2014_full.pdf

- Scenario 2 – under Do something with Preferred Tidal defence barrier, for the 1 in 200-year event, up to:
  - 6% of jobs and 6% of GVA within the current economic footprint are at risk of flooding under the flood extents.

Future economic footprint

The contribution the area makes to the local economy is substantive and set to increase, our estimates of the future economic footprint suggest that the study area could potentially:

- accommodate 12,000 direct jobs: and,
- these jobs could generate £0.6bn (£641m) of GVA per annum.

On the basis of this analysis, the economic footprint of the area is significant, and a substantive quantum of the economic footprint can be protected through introducing the measures associated with Scenario 2. When future economic growth is factored into the analysis the situation is as follows:

- Scenario 1 – under the Do-Nothing situation (based on 1 in 200-year event), up to:
  - 62% of jobs and 62% of GVA within the future economic footprint are at risk of flooding under the flood extents
- Scenario 2 – under the Do something with Preferred Tidal defence barrier (based on 1 in 200-year event), up to:
  - 22% of jobs and 22% of GVA within the future economic footprint are at risk of flooding under the with climate change flood extents

In conclusion it is evident that under scenario 2 a significant proportion of both the current and future level of the economic activity supported in the study area is protected from flooding. This illustrates the importance of investing in flood defences here based on the level of impact this will have not only for the local economy, but also the wider economy as a whole.

1 Introduction and study context

1.1 Introduction and study purpose

Mott MacDonald was previously appointed by Waveney District Council in December 2014 to undertake an assessment of the economic footprint of the Central Lowestoft area around Lake Lothing and to quantify the level of economic activity that would be protected in the area by future flood mitigation and alleviation works. Allied to this was an economic impact assessment of the potential future development that could be accommodated, and protected by the flood mitigation and alleviation works, on sites around Lake Lothing. The previous commission was used to support the case for investment in flood defences at Lowestoft and supported a £10 million LGF funding ask from New Anglia LEP. In October 2021, Mott MacDonald was commissioned via Coastal Partnership East on behalf of East Suffolk Council to reproduce the original report updated for the present day. This report will be used to provide an additional evidence base demonstrating the wider economic benefits of the proposed flood defences at Lowestoft for the local and regional economy.

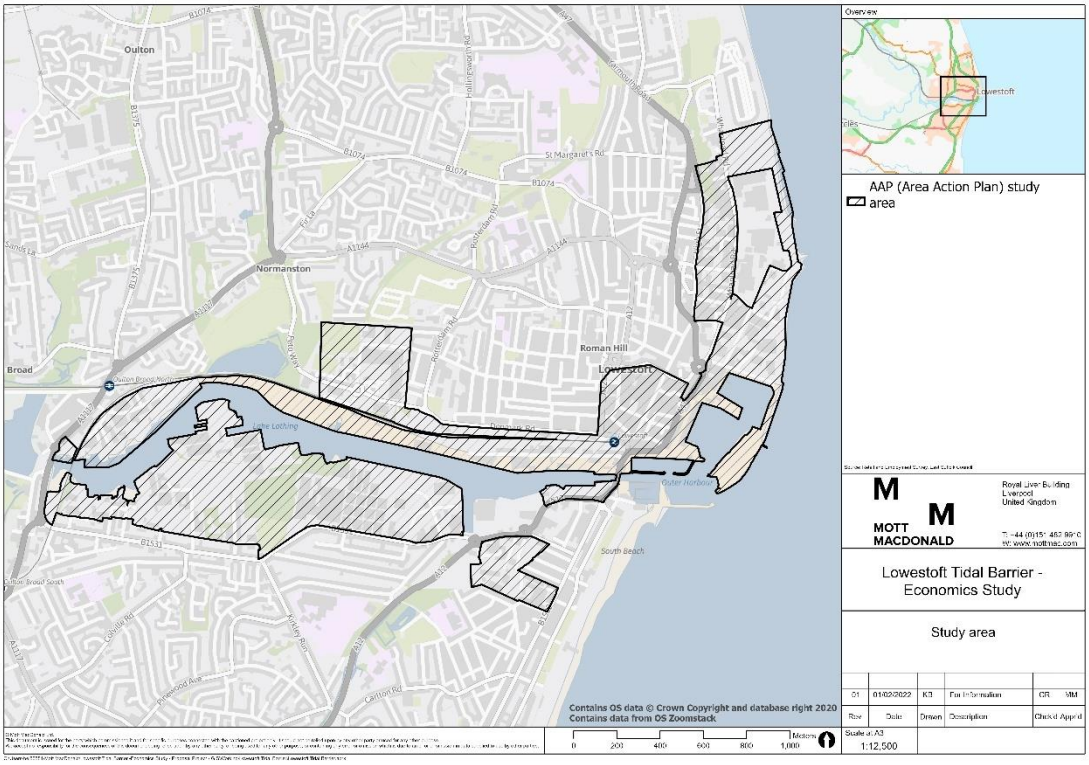
The study has been commissioned because existing methods of supporting the case for investment in flood defences do not capture the economic benefits from employment land, jobs and Gross Value Added (GVA) nor do they include development on land that is presently vacant or under-utilised. The methods used in this study provide a way of identifying and articulating the economic benefits of flood protection measures.

1.2 Study area

The study area reflects the boundary of the Lake Lothing and Outer Harbour Area Action Plan (AAP) boundary in Lowestoft in alignment with the previous study[3]. This is shown in Figure 1.1 below.

[3] It should be noted that the previous study included areas outside of the boundary for the AAP area based on data provided by Waveney District Council. In this update of the report new data has been utilised which has been restricted to that within the AAP area.

Figure 1.1: Study area



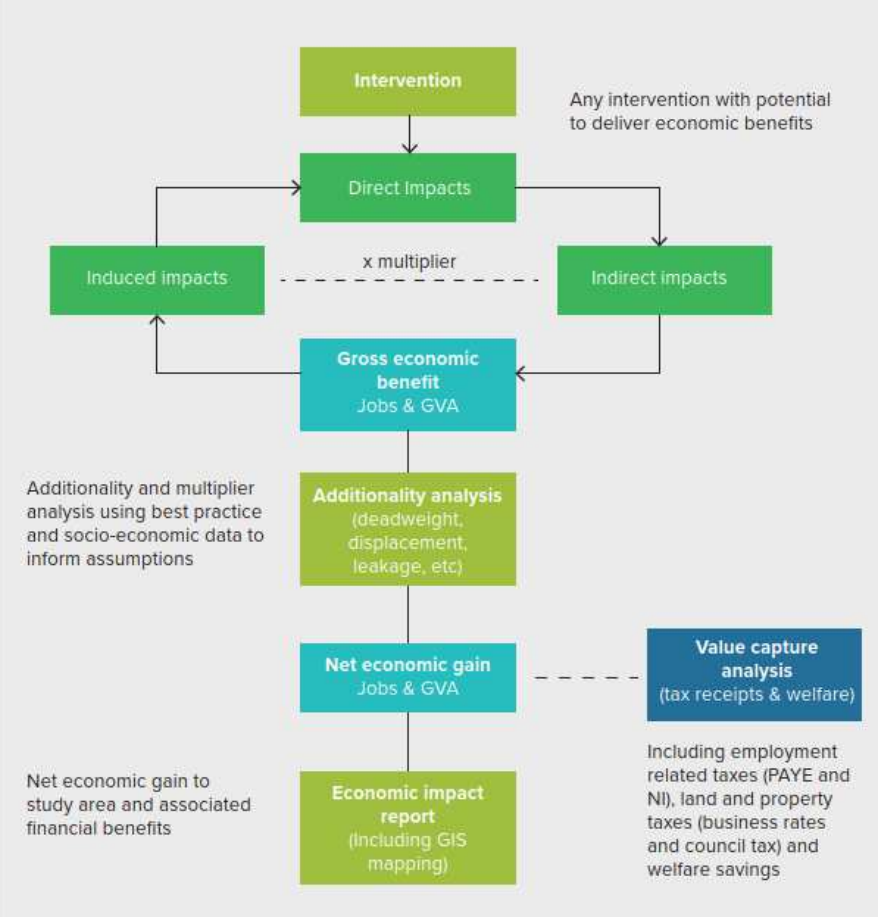
Source: Mott MacDonald

1.3 Study methodology

The methodology used to support this study is set out below:

1. An inception meeting was conducted with Coastal Partnership East and East Suffolk Council officers in October 2021 in Lowestoft to understand the study context, the area's growth potential and land-use/sites for consideration. This was followed by telephone discussion with officers from East Suffolk Council to discuss the availability of land-use data and GIS mapping for the study area.
2. A site visit was conducted to Lowestoft and the Lake Lothing area in October 2021 to understand how the area has changed since the original study.
3. A refresh of the planning policy review has been produced taking into consideration up to date relevant local, regional and national policy documents. Policy documents in relation to land-use and economic growth as well as flooding have been reviewed.
4. A review of land-use and site information provided by East Suffolk Council has been completed to generate inputs for Mott MacDonald's Transparent Economic Assessment Model (TEAM) which has been used to assess the economic footprint of the area presently and the economic benefits that may arise if development land is utilised in future. Figure 1.2 illustrates how TEAM works to assess local economic benefits linked to land-use change as a result of infrastructure improvements. It should be noted as part of this analysis no additionality analysis is provided and this is all provided at the gross level.

Figure 1.2: TEAM Methodology flow chart



Source: Mott MacDonald

1.4 Report structure

The remainder of this document is structured as follows:

- **Section 2** – provides the planning policy context for Lowestoft drawing on key planning documents which set out the strategy for Lowestoft set within the wider local and regional economy
- **Section 3** – provides an overview of the flooding context for Lowestoft
- **Section 4** - includes our economic impact assessment.
- **Section 5** – sets out the study findings.

2 Policy context

2.1 Introduction

This section provides a review of relevant policy documents for Lowestoft providing context for the area's strategic importance within the wider local, regional and national economy. This section draws on existing policy and strategic documents which serve to reinforce the importance of the area as a centre for retail, commerce, employment, leisure and a focus for the offshore sector setting this within the wider regional and national economy. This section begins with an overview of Lowestoft and its key socio-economic challenges and opportunities before setting this against the national, regional and local policy context.

2.2 Lowestoft overview

Lowestoft is located in the former district of Waveney[4] in East Suffolk and is the most easterly settlement in the UK. As a coastal town, the North Sea lies to the east of the town, and the town's geography is split north and south by the Lake Lothing as shown in Figure 1.1. Lowestoft's economy was historically supported by fishing and manufacturing however these sectors have experienced significant decline in recent years. The restructuring of the global economy has had profound impacts in Waveney in terms of the decline of many traditional forms of employment. Waveney's relative geographical isolation has compounded the effects of industrial decline, with the area characterised today by persistent pockets of deprivation, poor skill levels, high unemployment and low levels of enterprise. As the District's principal employment centre, these outcomes are manifested most profoundly in Lowestoft, which has suffered from the loss of employment in manufacturing and fishing, the traditional industries within Lowestoft. Some of the key socio-economic challenges facing the district are outlined within the Local Plan as highlighted in Figure 2.1 overleaf.

In addition Lowestoft is located in an area of the East of England that is very vulnerable to flooding. The largest flood event was caused by the 1953 North Sea storm surge. This caused widespread flood damage to the UK and Netherlands resulting in over 300 deaths in the UK. Coastal defences were breached with a peak water level recorded at Lowestoft of 3.35m Above Ordnance Datum (AOD) causing flooding of over 400 properties. The event at Lowestoft was estimated to have a 1 in 250 year return period (RP) and triggered increased awareness of coastal flood risk in the UK and monitoring of water levels including storm surges. In addition in recent years there were two major flood events in 2007 and 2013 that caused widespread damage to properties and businesses in the area, once again bringing flood alleviation to the forefront of the policy agenda. The risk of flooding has been a significant barrier to growth within the town impacting on the viability of development and inward investment.

Despite this there are major opportunities for growth in Lowestoft particularly in offshore renewables and offshore related engineering reinforcing the need to provide further protection to the area from potential future flood events. Lowestoft is designated as a growth area at national, sub-regional and local level as evidenced by its Enterprise Zone (EZ) status, description in the LEP's growth ambitions and through the local planning policy framework as the following section will outline.

[4] Waveney has now joined with Suffolk Coastal to become East Suffolk as of 2019

Figure 2.1: Key socioeconomic issues in Waveney

Source: Waveney Local Plan 2019 Adopted-Waveney-Local-Plan-including-Erratum.pdf (eastsuffolk.gov.uk)

2.3 National Policy

2.3.1 The Ten Point Plan for a Green Industrial Revolution (2020)

In November 2020, The UK Government published their Ten Point Plan for a Green Revolution outlining their key strategies to build back better, support green jobs and accelerate the UK's path to net zero. The Ten Point Plan seeks to mobilise £12bn of government funds and attract up to £36bn from the public sector to create c.250,000 jobs in the clean energy sector. The key points set out in this plan include:

1. Advancing offshore wind;
2. Driving the Growth of Low Carbon Hydrogen;
3. Delivering New and advanced Nuclear Power;
4. Accelerating the shift to Zero Emission Vehicles;
5. Green Public Transport, Cycling and Walking;
6. Jet Zero and Green Ships;
7. Greener Buildings;
8. Investing in Carbon Capture, Usage and Storage;
9. Protecting Our Natural Environment;
10. Green Finance and Innovation.

The East coast, including Lowestoft, are well placed to capitalise on this investment and reap the rewards from a growing green energy sector. The key development sites explored in this report have been allocated for offshore wind energy. This will promote public and private sector investment, deliver high paying jobs and has the potential to drive economic regeneration in Lowestoft.

2.3.2 Building Back Better: Our plan for growth,

This plan was published in 2021 and is a publication setting out the government's post pandemic plans to support economic growth through significant investment in infrastructure, skills and innovation. The plan aims to drive the levelling up of the UK, to support the UK's transition to net zero and help the country to take advantage of opportunities following the departure from the European Union through a global Britain. As above Lowestoft is well placed to capitalise on the focus of national policy through its current emphasis on building back better through investment in sectors such as clean energy.

2.3.3 Levelling Up White Paper

Given the dominance of London, and the relatively weak performance of the other regions in the UK, the UK government has long discussed the need to rebalance or 'level up' the economy and associated socio-economic outcomes. In February 2022 the Government published The Levelling Up White Paper that sets out the plan to 'level up' the UK and reduce the geographical disparities in productivity, pay, educational attainment, health and deprivation. The approach is built around five 'pillars' with key missions to rebalance the economy as set out in Table 2.1 below.

Table 2.1: Levelling up missions

Focus area	Mission
Boost productivity, pay, jobs and living standards by growing the private sector, especially in those places where they are lagging	
Living standards	By 2030, pay, employment and productivity will have risen in every area of the UK, with each containing a globally competitive city, and the gap between the top performing and other areas closing.
Research and Development	By 2030, domestic public investment in R&D outside the Greater Southeast will increase by at least 40%, and over the Spending Review period by at least one third. This additional government funding will seek to leverage at least twice as much private sector investment over the long term to stimulate innovation and productivity growth.
Transport Infrastructure	By 2030, local public transport connectivity across the country will be significantly closer to the standards of London, with improved services, simpler fares and integrated ticketing.
Digital Connectivity	By 2030, the UK will have nationwide gigabit-capable broadband and 4G coverage, with 5G coverage for the majority of the population.
Spread opportunities and improve public services, especially in those places where they are weakest	
Education	By 2030, the number of primary school children achieving the expected standard in reading, writing and maths will have significantly increased. In England, this will mean 90%of children will achieve the expected standard, and the percentage of children meeting the expected standard in the worst performing areas will have increased by over a third.
Skills	By 2030, the number of people successfully completing high-quality skills training will have significantly increased in every area of the UK. In England, this will lead to 200,000 more people successfully completing high-quality skills training annually, driven by 80,000 more people completing courses in the lowest skilled areas.
Health	By 2030, the gap in Healthy Life Expectancy (HLE) between local areas where it is highest and lowest will have narrowed, and by 2035 HLE will rise by five years.
Well-being	By 2030, well-being will have improved in every area of the UK, with the gap between top performing and other areas closing.
Restore a sense of community, local pride and belonging, especially in those places where they have been lost	
Pride in Place	By 2030, pride in place, such as people's satisfaction with their town centre and engagement in local culture and community, will have risen in every area of the UK, with the gap between top performing and other areas closing.
Housing	By 2030, renters will have a secure path to ownership with the number of first-time buyers increasing in all areas; and the government's ambition is for the number of non-decent rented homes to have fallen by 50%, with the biggest improvements in the lowest performing areas
Crime	By 2030, homicide, serious violence and neighbourhood crime will have fallen, focused on the worst affected areas
Empower local leaders and communities, especially in those places lacking local agency	
Local Leadership	By 2030, every part of England that wants one will have a devolution deal with powers at or approaching the highest level of devolution and a simplified, long-term funding settlement.

Source: Levelling Up White Paper 2022 Levelling Up the United Kingdom (publishing.service.gov.uk)

The Levelling Up White Paper demonstrates government's renewed commitment to addressing the geographical disparities evident throughout the UK. The Levelling Up White Paper makes specific reference to coastal towns and the impacts that global restructuring has had on these communities and their economies. Areas such as Lowestoft therefore have the potential to capitalise on this opportunity and support the UK's levelling up agenda through government investments such as Towns Fund, Levelling Up Fund and UK Shared Prosperity funding. Crucial to supporting the outcomes of this investment is ensuring that the right infrastructure is in place to protect current and future economic activity. This includes aspects such as flood defences to ensure that economic activity is protected both now and in the future.

2.4 Regional Policy

2.4.1 New Anglia Local Enterprise Partnership

The New Anglia Local Enterprise Partnership (LEP) was established in December 2010. The organisation is a business-led organisation with clear goals: to create jobs and remove the barriers to growth that exists in Suffolk and Norfolk – enabling the region to achieve its full potential. The LEP has published a number of economic growth plans which demonstrate the importance of Lowestoft within the wider region.

2.4.1.1 Local Industrial Strategy

The Local Industrial Strategy published in 2019 sets out a series of coherent and specific actions that will drive productivity and growth across the economy as a whole and identifies the three largest opportunity areas. The opportunity areas and the key actions are listed below:

- **Clean Energy**
  - Developing an ambitious research and innovation programme that will build on existing clean energy research strengths across the regional universities, Cefas and ORE Catapult. Support close collaborative working with industry to deliver increased innovation and productivity, new research collaborations and cross-sector translational projects.
  - Enhancing the capacity and capability of Norfolk and Suffolk's ports with a series of ambitious projects to attract and capture investment in operations and maintenance, manufacturing and construction to serve the offshore energy market.
  - Expanding OrbisEnergy's scope from offshore renewables to 'clean energy', delivering an ambitious innovation and growth programme focussing on supply chain development, new technology solutions, investment in skills and talent, attracting investment, increasing global exports and supporting collaboration across industry.
- **Agri-food**
  - Invest in a Food Innovation Hub based at the Honingham Food Enterprise Zone to deliver business growth through innovation, productivity, processing, exports and supporting new start-ups.
  - Collaborate with partners including Lincolnshire, Cambridgeshire and Peterborough leveraging the existing strengths of Agri-Tech East to realise the collective power as the UK centre for high-tech, precision agriculture and food production.
  - Develop a world-leading hub for plant and microbial research at the John Innes Centre.
- **ICT/ digital creative sectors.**
  - Deliver the Adastral Park 2025 vision to take the site to a new level as a major national strategic asset and growth engine for the UK.
  - Create a new digital hub in Norwich for the incubation of start-ups and accommodation of scale-up businesses in the digital and creative cluster.
  - Develop the economic case for a Smart Emerging Technology Institute (SETI) and testbed – a unique advanced high-speed optical and wireless network (including 5G) which interlinks Internet of Things testbeds to support large-scale experiments and data transfer.

The Local Industrial Strategies focus on opportunity areas such as clean energy highlight the importance of reinforcing flood protection measures to support growth in this sector at Lowestoft to support the LEP's wider growth ambitions.

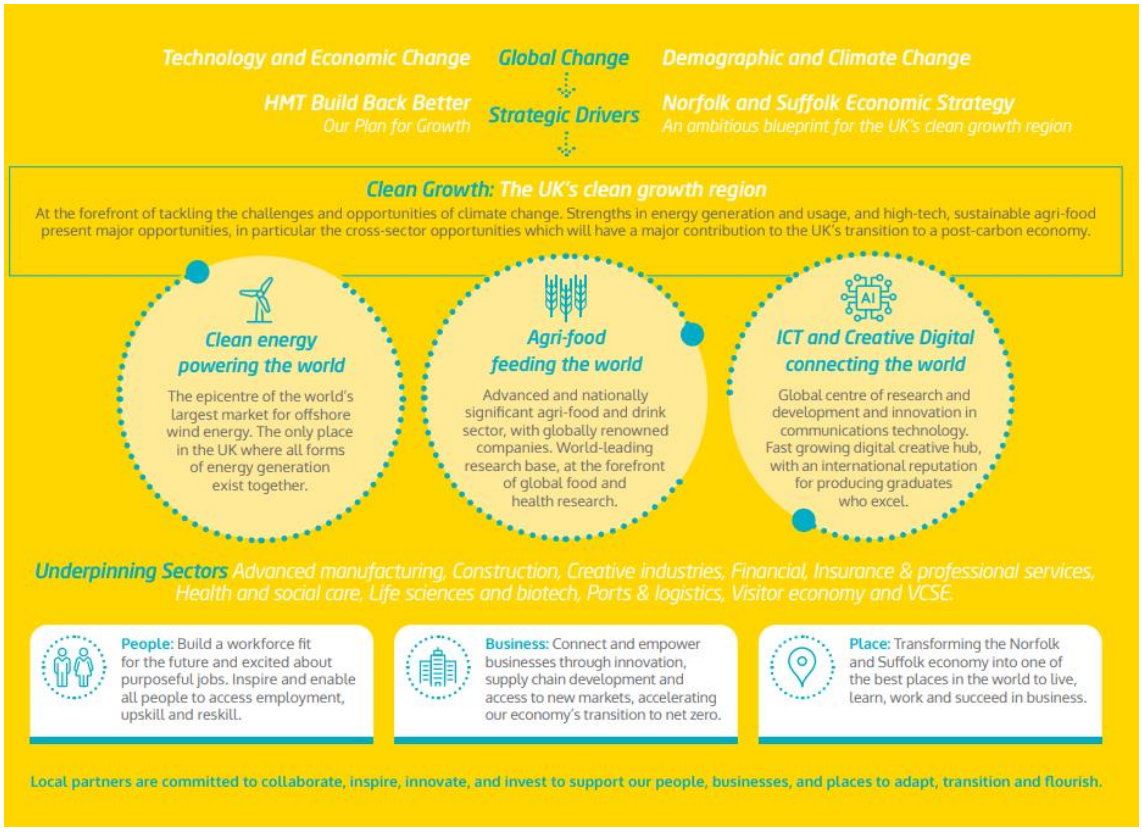
2.4.1.2 New Anglian LEP Economic Strategy

The New Anglian LEP Economic Strategy was published in 2022 and builds on the COVID-19 Economic Recovery Restart Plan. It also replaces the old Economic Strategy published in 2017 and the Local Industrial Strategy published in 2019.

New Anglia LEP's Economic Strategy (2022) sets out the LEPs ambition to harness the areas distinct sector strengths and natural assets to deliver new jobs, increase productivity, wages, business, homes and education level across Suffolk and Norfolk. New Anglia LEP's ambition for Norfolk and Suffolk is set out in the Economic Strategy:

> *Our ambition is to transform our economy into a globally recognised, technology-driven and inclusive economy which is leading the transition to a zero-carbon economy through sustainable food production, clean energy generation and consumption and digital innovation; becoming one of the best places in the world to live, work, learn and succeed in business."*
>
> New Anglia LEP Economic Strategy 2022

Figure 2.2: New Anglia LEP Economic Strategy



Source: New Anglia LEP (2022), Economic Strategy. Available at: FINAL-Norfolk-and-Suffolk-economic-strategy-Jan-2022.pdf (newanglia.co.uk)

Key to delivering on this ambition the Economic Strategy identifies the following as crucial sector specialisms for securing this ambition

- **Clean growth**
    - The strategy recognises Norfolk and Suffolk is at the UK's epicentre for energy generation with a mix of onshore and offshore renewables, gas and nuclear generation and emerging opportunities for hydrogen worth almost £1 billion per annum. The strategy recognises Norfolk and Suffolk's role in supporting the UK's successful transition to a zero carbon economy and delivering on the UK's net zero ambitions as the UK's 'Clean Growth Region'. Planned investment in new generation projects will make Norfolk and Suffolk the largest contributor of clean energy in the UK providing power for 58% of the UK's homes. Lowestoft's port (alongside Great Yarmouth) has become a strategic centre for the offshore wind sector, and locally based organisations such as Orbis Energy have supported innovation in the energy sector. This is a key growth sector, and the region has the potential to benefit from growth in offshore wind jobs which the strategy projects will grow by 6,150 full time jobs by 2032. Norfolk & Suffolk has the potential to supply up to 50% of the UK's 40GW target from offshore wind by 2030.
- **Agri-food**
    - The strategy recognises the Agri-food sector as a key sector specialism for Norfolk and Suffolk. The region has some of the most productive farmland in the UK and is home to key facilities which support agri-food research and innovation such as Norwich Research Park and Lowestoft based Centre for Fisheries and Aquaculture Science (Cefas). Innovation centres such as these are supporting the nationally significant food and drink sector and contributing to world leading global food and health research. Cefas for example is a leading institution in in marine science and technology providing innovative solutions for the aquatic environment, biodiversity and food security. The strategy looks to build on these strengths, supporting adoption of technology to increase productivity and wider collaboration with industry partners to unlock the sectors potential.
- **ICT digital**
    - The strategy recognises ICT digital as a key sector specialism for Norfolk and Suffolk. Norfolk and Suffolk is a national leader in 5G and future network infrastructure and is at the cutting edge of digital innovation, with distinct strengths in telecoms, cyber security, satellite applications, data centres, software development, quantum technology, artificial intelligence, Internet of Things and user experience design. The region is playing a central role in developing and deploying these technologies at digital creative tech clusters such as Adastral Park and Norwich Digital Creative Cluster.

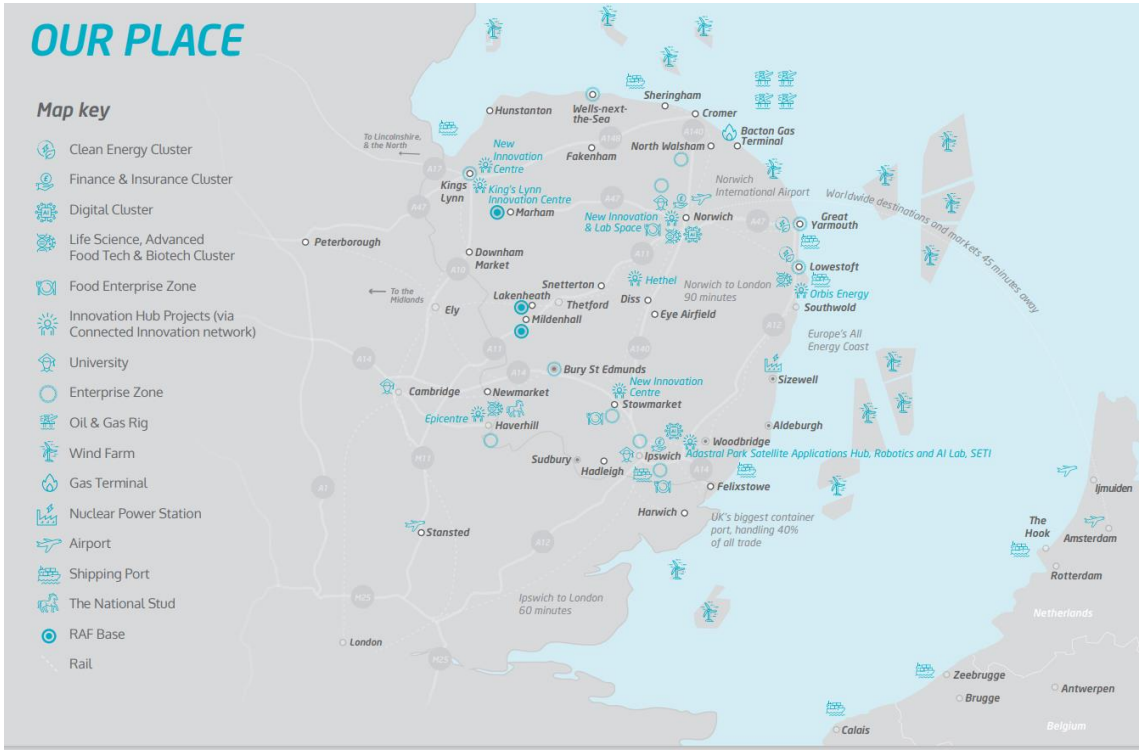
In addition to these sector specialisms the strategy identifies the following underpinning sectors as being key to supporting the region's growth potential.

- **Advanced manufacturing and engineering**- The advanced manufacturing and engineering sector in Norfolk and Suffolk reflects the area's diverse economic strengths. There are several specialist advanced manufacturing and engineering companies in the area, including: Lotus (Hethel), a class-leading manufacturer of sports cars; Multimatic (Thetford), a specialist in vehicle dynamics; and Philips AVENT (Glemsford).
- **Construction and development**- Norfolk and Suffolk's strong economy and attractive location for housing has driven economic success in the construction and development sector.

- **Creative industries** - Strong and diverse sector, with major concentrations around Norwich and Ipswich.
- **Financial services, insurance & professional service** - New Anglia LEP is home to one of the largest financial services and insurance clusters in Europe. Greater Norwich has been a base for financial industries for over 200 years and is one of the largest general insurance markets in Europe
- **Health and social care** - Transformational partnership working to deliver first of its kind Integrated Care Academy and research impact through the Norwich Institute of Healthy Ageing.
- **Life sciences and biotech -** Norfolk and Suffolk offer international expertise in the fields of food, health and the microbiome, an advanced cluster of animal health and emerging pharmaceutical manufacture on the Cambridge-Norwich Corridor.
- **Ports and logistics**- Contains the UK's largest container port at Felixstowe and nationally significant ports for the energy and agri-food sectors (e.g. Lowestoft), with a strong logistics cluster. There are significant opportunities such as Freeport East, smart logistics hubs along the A14 corridor, and Port expansion and innovation plans (e.g. PowerPark)
- **Visitor economy** - Norfolk and Suffolk has a thriving visitor economy which attracts 5m overnight visitors annually.
- **Voluntary, community and social enterprise** - The voluntary, community and social enterprise sector, together with adult learning provision supports labour market reintegration and re-skilling through training, volunteering or employment.

Figure 2.3 shows the Norfolk and Suffolk area and outlines the key sectors for growth. As is demonstrated by Figure 2.3 Lowestoft is home to key growth sectors including Clean Energy, Shipping, Life Sciences, Advanced Food Tech and Biotech illustrating the importance that Lowestoft plays in supporting New Anglia LEP's growth ambitions.

Figure 2.3: New Anglia LEP Key sectors map



Source: New Anglia (2017), Economic Strategy. Available at: https://newanglia.co.uk/wp-content/uploads/2020/03/New-Anglia_Norfolk-Suffolk-Unlimited_Economic-Strategy-Brochure-1-1.pdf

In addition, there are three enterprise zone sites located in Lowestoft at South Lowestoft Industrial Estate, Mobbs Way and Riverside which is part of the New Anglia- Great Yarmouth and Lowestoft Enterprise Zone[5]. The allocation of the enterprise zone is designed to help attract business to locate in an area by providing a variety of attractive subsidies. The aim of these enterprise zones is to encourage clusters of energy related businesses in order to create high skilled jobs.

To unlock the potential in the area's key sectors and to create new jobs and businesses requires focused investment by local partners and Government to improve the area's infrastructure, ensure businesses have a supply of skilled workers and the right support to grow. Part of this mix of infrastructure support is flood protection and mitigation schemes to protect current economic activity while also removing barriers to development on sites that can accommodate future growth.

2.5 Local policy

2.5.1 East Suffolk Council

The previous report which was developed in 2015 was commissioned on behalf of Waveney District Council. Since the original report there have been some administrative changes to the council which are important to note. In February 2018 the Secretary of State for Housing Communities and Local Government agreed the shared proposals to create a new single East Suffolk Council which encompassed both Suffolk Coastal District Council and Waveney District Council. East Suffolk Council was formally adopted in 2019 and replaces Waveney District Council and Suffolk Coastal District Council.

2.5.2 East Suffolk Economic Growth Plan

The East Suffolk Growth Group (ESGG) was previously established in 2013 to provide direction to the task of growing the East Suffolk economy in response to the local and countywide aspiration to achieve economic growth. The Group previously comprised members and officers of both Suffolk Coastal District Council and Waveney District Council. Its aspiration was to develop a plan for sustainable economic and housing growth whilst maintaining and enhancing the high quality built and natural environment. A refreshed East Suffolk Economic Growth Plan (ESEGP) was published in 2018 and covers a 5-year period between 2018 and 2023.

The ESEGP sets out its growth ambitions through the development and enhancement of key sectors and strategic growth locations. The seven key sectors that will be the focus of this plan are: Agriculture, food and drink; Energy; IT, tech and digital creative; Manufacturing and Engineering; Marine; Ports and logistics; Visitor economy and cultural sectors which will facilitate economic expansion across the East Suffolk economy. The vision set out in the ESGP is that *businesses across East Suffolk have the confidence to invest and grow, creating opportunities for people of all ages and improving further the quality of life in an outstanding environment.*

East Suffolk will be more prosperous; with more businesses, stronger businesses and more jobs. ESGG will achieve this vision by focusing on these 3 main priorities:

1. Supporting entrepreneurs and entrepreneurship in East Suffolk.
2. Encouraging established businesses to invest and grow
3. Attracting inward investment to East Suffolk, focused around existing and emerging sectors and supply chains

[5] The scheme is a joint venture between New Anglia Local Enterprise Partnership, Suffolk County Council, Norfolk County Council, East Suffolk Council and Great Yarmouth Borough Council

ESEGP's goals are challenging but ESGG will work with county, regional and national partners to achieve the following:

- Support jobs by creating the right conditions to increase the total number of jobs to 113,400 jobs by 2023. This is a 0.6% per annum increase over the 5-year period.
- Create the right conditions to increase the GVA per person in East Suffolk by 1.75% per annum between 2018 and 2023. This will increase the GVA per job for East Suffolk to £44.8k (2011 prices)
- Facilitate the creation of at least 1,000 new enterprises by 2023, so that the area is consistent with the New Anglia Economic Plan for Norfolk and Suffolk.

2.5.3 Waveney Local Plan (2019)

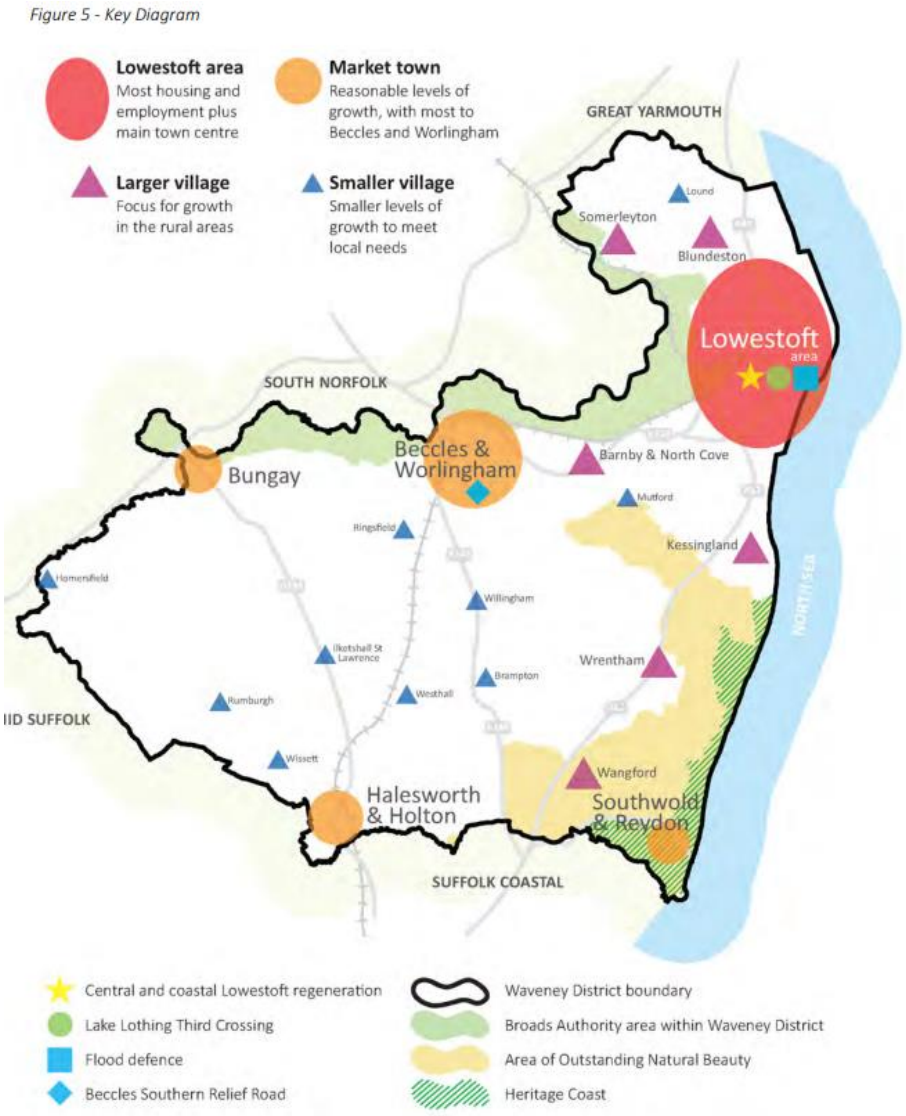
The Local Plan was adopted in 2019 and predates the merger of both Suffolk Coastal District Council and Waveney District Council. At the time of writing East Suffolk Council have not produced a Local Plan for the overall district. This Local Plan covers the area previously covered by Waveney District Council and covers a 22-year period from 2014-2036. It was updated in March 2019 to outline a more recent overview of the districts planning needs. The Local Plan sets out the level of growth which needs to be planned in the Waveney area (excluding the Broads Authority area) and identifies where that growth should be located and how it should be delivered.

The Local Plan acknowledges 10 strategic priorities as follows:

- To improve health, wellbeing and education opportunities for the population
- To deliver at least 8,223 new homes to meet the housing requirements of the whole community (both in urban and rural) including those wishing to move into the area
- To enhance and protect the natural, built and historic environment
- To reduce contributions to climate change and mitigate the effects and conserve natural resources
- To achieve sustained and resilient economic growth in towns and rural areas in order to support 5,000 new jobs in the district
- To support the growth of the tourism industry
- To protect and enhance the districts varied cultural facilities
- To enhance the viability and vitality of town centres and service provision in towns and villages
- To significantly improve the quality of urban design across the district
- To improve the quality and provision of all types of infrastructure.

Over the Local Plan period (2014-2036) 56% of new dwellings, 60% of allocated employment land and 60-70% of allocated convenience retail floorspace within Waveney is designated within Lowestoft, demonstrating the importance of Lowestoft in supporting the authority's overall growth ambitions. Figure 2.4 below, presents East Suffolk Council's Key Diagram for the geographical area of Waveney, providing a spatial representation of the Local Plan in relation to development and growth across the district.

Figure 2.4: Key Diagram – Waveney Local Plan



Source: Waveney Local Plan 2019 Item-11-APPENDIX-A-Waveney-Local-Plan.pdf (eastsuffolk.gov.uk)

Considering these principles and priorities, key points identified within the spatial planning and strategic objectives for Lowestoft area include:

- Provision of a at least 5,206 new dwellings across the local plan period from 2014-2036;
- Lowestoft Town Centre is recognised as the main town centre within the district;
- Lowestoft should provide around 20% of all housing developments to be affordable;
- Housing developments in the Lowestoft must provide 20% affordable housing;
- Local Plan allocates 38 hectares of new employment land;
- Key transport policies includes:
  - the delivery of the third crossing over Lake Lothing,
  - Improvements to Bloodmoor roundabout
  - and servicing and access improvements to Enterprise Zones.

2.5.3.1 Central and Coastal Lowestoft

The Central and Coastal Lowestoft area has long been identified as a strategic opportunity for regeneration. The area is centrally located within the town and has substantial redevelopment opportunities on currently derelict and vacant former industrial sites. The Lake Lothing Area Action Plan (AAP) previously provided a spatial policy framework for the revitalisation of Lake Lothing and the Outer Harbour by identifying opportunities for a range of employment, residential, recreational, community, transport and environmental improvements. This document is now outdated and has been superseded by the Local Plan. The objectives for the Central and Coastal Lowestoft area are now included in the new Local Plan. These objectives include:

- Improve connections and permeability within the area. Including ensuring the third crossing supports connections through central Lowestoft and to the town centre, creating better pedestrian and cycle connections between the Broads, East of England Park and North Denes and South Beach through to Pakefield.
- Create a better relationship to the waterfront, particularly along the south side of Lake Lothing.
- Support Lowestoft Port and capitalise on the growth of offshore renewables and offshore related engineering.
- Enhance the vitality and viability of Lowestoft Town Centre.
- Bring back underutilised and derelict land into positive use.
- Enhance the tourism offer of the area.
- Enhance the quality of design, the public realm and the historic environment, particularly around the Historic High Street.
- Deliver new housing in an accessible location bringing a better mix of tenures and types of housing to the area.
- Reduce the need to travel by car.
- Improve the natural, historic and built environmental quality of the area.

The Local Plan highlights the importance of Central and Coastal Lowestoft in supporting the town's growth ambitions. The area around Lake Lothing in particular has long been considered a strategically important area for regeneration[6] which can help to drive forward the town's economic growth by transforming former industrial sites which are now derelict or underutilised. The area around Lake Lothing is particularly at risk from flooding and investment in effective flood mitigation measures is required to secure the future regeneration of the town and accelerate the adoption of growth sectors such as offshore renewables and engineering.

The opportunity areas in the Central and Coastal Lowestoft area are summarised below in Table 2.2 and shown spatially in Figure 2.5.

[6] As evidenced through the previous Lake Lothing & Outer Harbour Area Action Plan Adopted-Area-Action-Plan.pdf (eastsuffolk.gov.uk)

Table 2.2: Central and Coastal Lowestoft opportunity areas

Number	Themed Opportunity Area	Summary
1	North Denes and Beyond Tourism and Ecological Area	Enhance the tourism offer, protect and enhance existing open space and protect and enhance biodiversity habitats around Gunton Warren
2	East of England Parks	Enhance the open space comprising the East of England Park, Ness Point, and the links between nearby parks
3	Historic High Street and Scores	Enhance the heritage experience and support the existing shops, cafés and restaurants
4	Town Centre Residential Area	Support further residential development which will support the shops and services provided by the town centre
5	Office and Town Centre Services Area	Retain and support the office and service function of the area
6	Retail Core and Enhanced Leisure Area	Expand and enhance the retail and leisure offer including multiplex cinema and restaurants.
7	PowerPark	Continue to promote the creation of a cluster of business in the offshore renewables, engineering and oil and gas sectors
8	Peto Square Leisure Area	Promote growth of leisure uses such as public houses and restaurants
10	South Beach Tourism Focus	Support proposals which enhance the tourism offer.
11	Kirkley Village Centre	Protect and enhance the existing retail area and expand the provision of restaurants and cafes.
12	Kirkley Rise Employment Area	Retain employment uses in either existing buildings or through redevelopment
13	Lothing Park Existing Retail Area	Continue to improve the appearance of this key gateway to the town.
14	Lake Lothing Third Crossing	Support the plans for the third crossing over Lake Lothing.
15	Inner Harbour Port Area	Protect and support the enhancement of port related activities e.g. offshore renewables and engineering sectors
16	High Quality Connections between the Seafront and the Broads	Establish a waterfront pedestrian and cycle route which links the seafront to the broads.
17	Kirkley Waterfront and Sustainable Urban Neighbourhood	This site will deliver 1,400 new homes, community facilities and new employment premises
18	Pedestrian and Cycle Crossing	Key pedestrian and cycle link between Brooke Peninsula and Normanston Park.
19	Harbour Road Maritime Employment Area	Protect existing premises in employment use and support development of new employment connected to maritime industries
20	Western End of Lake Lothing	Create mixed use area, including new employment and tourism uses associated with maritime activities and new residential development
21	Oulton Broad Shopping and Leisure Area	Protect and enhance existing retail and leisure offer
22	Denmark Road Corridor	Promote enhancements to the corridor as one of the main gateways to the town centre and regenerate brownfield sites for employment uses.

Source: Waveney Local Plan 2019

Figure 2.5: Opportunity Areas in Central and Coastal Lowestoft

Source: Waveney Local Plan (2019)

2.5.4 Lowestoft Town Centre Masterplan (2020)

The Town Centre Masterplan provides a strategy to inform regeneration activities in the town centre of Lowestoft and has been developed to support the post-pandemic recovery. The strategy supports the adaptation of the town centre to changing patterns of consumerism which have been accelerated by the pandemic and resulted in a declining retail offer within the town centre.

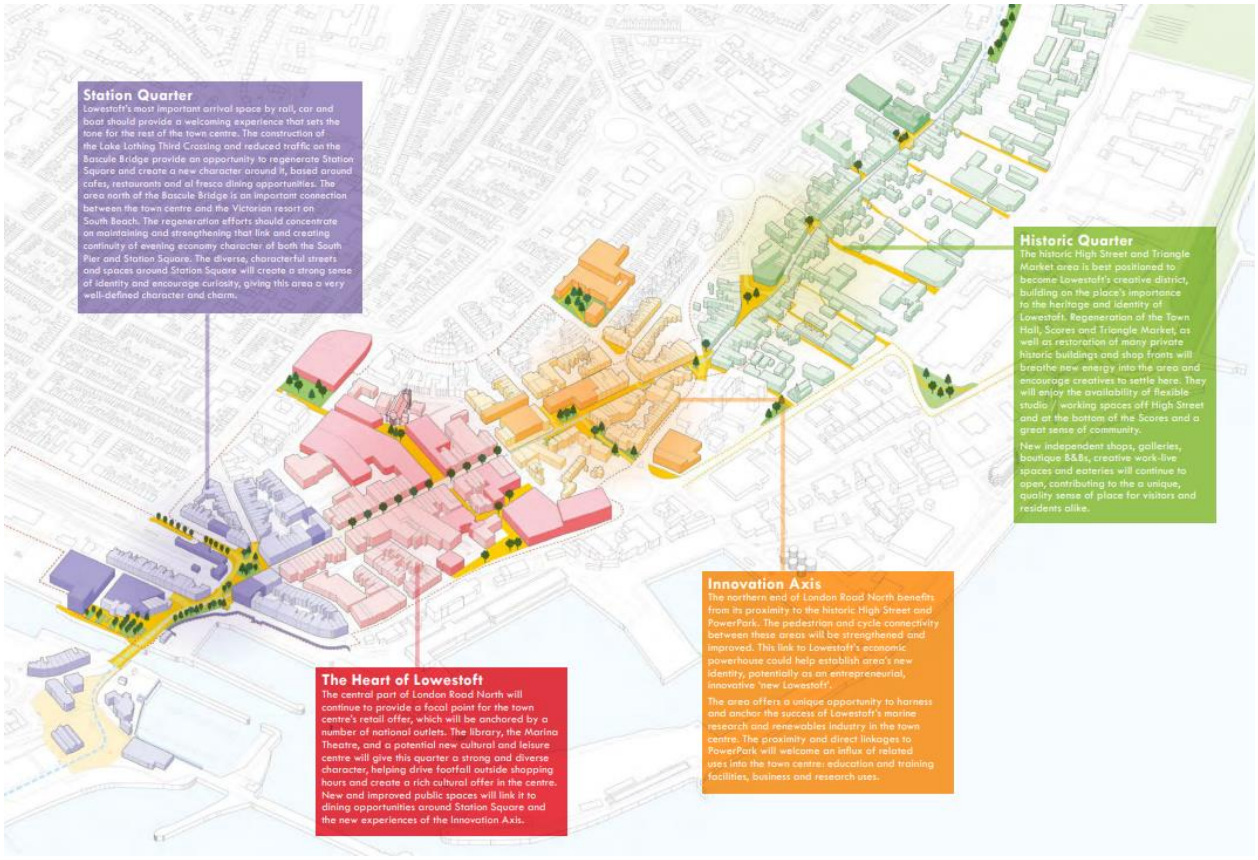
The masterplan identifies a development framework of four distinctive character areas within the town centre set out in Table 2.3 below and shown spatially in Figure 2.6.

Table 2.3: Town Centre Masterplan Character Areas

Character Area	Aim
Station Quarter	As the town's main arrival point this area should focus on the food and drink offer to help to develop the evening economy.
The Heart of Lowestoft	The area surrounding the Britten Centre and the Marina Theatre needs to build on its offer of large ground floors, central location and existing shops to become the retail emphasis of the town centre. Promote complimentary uses for cultural institutions. New development should be aimed at strengthening footfall and creating active frontages
Innovation Axis	Building on the success of the PowerPark and marine and energy industry the Innovation Axis should promote creative and flexible use of existing and proposed buildings to attract start up offices and workshops alongside research, education, community and civic facilities.
Historic Quarter	In the area surrounding the historic High Street flexible use of buildings should be promoted, in line with the character of this quarter. Uses relating to creativity and hospitality should be promoted such as art studios, artisan food and beverage and independent retail offer, small b&bs and hotels.

Source: Town Centre Masterplan 2020 LDA_09_Submission_Plain_A4_P (eastsuffolk.gov.uk)

Figure 2.6: Town Centre Masterplan Character Areas



Source: Town Centre Masterplan 2020 LDA_09_Submission_Plain_A4_P (eastsuffolk.gov.uk)

The Masterplan demonstrates the development plans for regenerating the town centre, and reinforces the requirement to invest in effective flood mitigation to protect future development and attract inward investment.

2.5.5 Lowestoft Town Investment Plan (2021)

In 2019, 101 town centres across the UK were invited to negotiate a 'Towns Deal' as part of a new £3.6bn fund from the MHCLG. The purpose of the Investment Plan was to submit 'Shovel ready' projects that could be complete by 2026 and would attract further investment from both public and Private sector.

Lowestoft Place Board in Partnership with East Suffolk Council submitted a Town Investment Plan in October 2019 and were successfully awarded £24.9m (subject to business cases). The report developed around five key thematic areas which would reflect the vision of the town. These are:

1. Employment, Enterprise and Skills;
2. Transforming our town centre; retail and leisure;
3. Celebrating our culture and heritage;
4. Living your life in Lowestoft; and
5. Collaborating and connecting.

Building on these key areas for the town's development, Lowestoft Place Board and East Suffolk Council identified five key projects that were allocated Towns Deals funding. These are summarised in Table 2.4 below. The award of Towns Fund funding demonstrates the commitment from government to support the revitalisation of Lowestoft's town centre and the 'levelling up' of the local economy. This investment reinforces the need for flood mitigation measures that will protect the area from future flood events and protect the ultimate development projects which will be the outcome of this investment.

Table 2.4: Lowestoft Towns Fund Project Summary

Project	Overview	Town Project Cost	Towns Fund ask
Cultural Quarter 	The Cultural Quarter project will demolish and clear the Battery Green Car Park and Retail space to support a new performing arts centre; upgrade the existing Marina theatre and improve public realm outside the theatre; improve connectivity between Marina Theatre, the Town Centre, and create a walkway to the PowerPark.	**£35.8m**	**£14.7m**
Station Quarter 	This project looks to redevelop the derelict part of the station building; redevelop the grade II listed former post office and sorting office; and improve public realm work to improve connectivity to other parts of the Town Centre.	**£28.2m**	**£2.9m**
Historic Quarter 	The project will take a conservation-led approach to bring forward benefits beyond the scope of the Heritage Action Zone (HAZ). One element of the project will repurpose the Grade II listed former Town Hall to a mixed-use property for events, weddings and gallery space. The second part will repair 'The Scores', medieval passageways down to the former fishing village, and connect the high street with key employment sites and green spaces.	**£7.4m**	**£3.3m**
Improvements to the Port Gateway	The development will include two key elements at vital entry points to the port. The	**£4.6m**	**£2.7m**

Project	Overview	Town Project Cost	Towns Fund ask
	first will involve reinforcing the quay wall which will bring back an underutilised site to full working order. The second element of the project looks at improvements to the entry point to the port, the outer harbour and PowerPark.		
Seafront Vision 	The Seafront vision is a programme of projects set to improve the seafront. The changes include: ● Improve and co-ordinate public realm along 1.5 miles of promenade which will support the town's £60m tourism economy. ● Replace the Royal Plain Fountains located next to the East Point Pavilion. ● Redevelop the East Point Pavilion to provide a modern and flexible eating offer and a cultural event space.	**£7.9m**	**£1.3m**

Source: Lowestoft Town Investment Plan (2020). Available at: https://www.eastsuffolk.gov.uk/assets/Business/Regeneration-projects/Lowestoft-Investment-Plan/Lowestoft-Town-Investment-Plan.pdf

2.6 Summary

This section has aimed to provide a review of relevant planning policy documents for Lowestoft highlighting the area's strategic importance within the wider local, regional and national economy.

At a national level the review has demonstrated that there is a clear drive for a clean economic recovery post pandemic with a focus on clean energy growth sectors to support the UK's transition to net zero. This is all set against a national strategy to rebalance the economy and 'level up' the UK to reduce the geographical disparities in productivity, pay, educational attainment, health and deprivation.

Regionally, the LEP identifies Lowestoft as supporting key growth sectors including Clean Energy, Shipping, Life Sciences, Advanced Food Tech and Biotech illustrating the importance that Lowestoft plays in supporting New Anglia LEP's growth ambitions.

At a local level, the Local Plan highlights the importance of Central and Coastal Lowestoft in supporting the town's future growth with key opportunity areas identified to support both residential and employment focused development. The area around Lake Lothing in particular has long been considered a strategically important area for regeneration which can help to drive forward the town's economic growth by transforming former industrial sites which are now derelict or underutilised. These areas will support future residential and commercial development, but also provide opportunity to further develop the town's strengths in offshore renewables, offshore related engineering and port related services which are well aligned to central government's 'clean growth' and 'levelling up' policies. In addition, the production of the Town Centre masterplan and the successful award of Towns Fund funding demonstrates the regeneration activities taking place to revitalise the town centre post pandemic.

Despite this opportunity, the area around Lake Lothing is particularly at risk from flooding and this is a key barrier to future development. Investment in flood mitigation to protect these areas

is crucial to not only protect existing uses but also support this future development which will help to support local, regional and national policy aims.

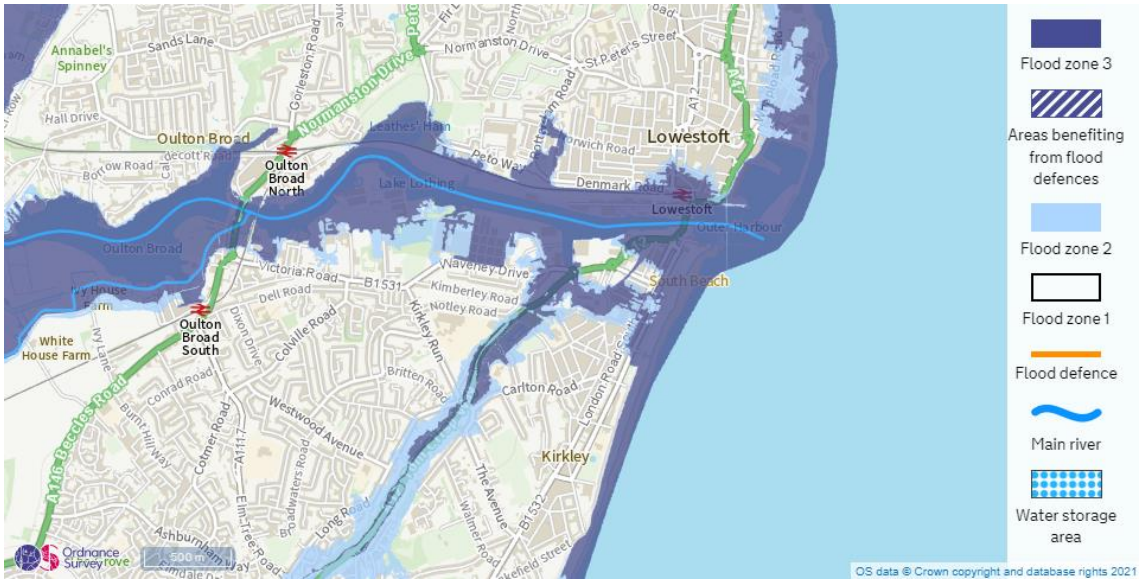
3 Flooding and Flood Risk

3.1.1 Flood risk background

The town of Lowestoft is situated either side of the Lowestoft Estuary with the North Sea to the east and the Broads river catchment to the west with Lake Lothing in between. The Lowestoft Estuary (Outer and Inner Harbour) and Lake Lothing are subject to tidal influences up to Mutford Lock. Freshwater input enters the system from the River Waveney via the Oulton Broads west of Mutford Lock and Kirkley Stream that drains the South Lowestoft catchment area. The flow of freshwater into Lake Lothing is controlled by the level of tidal water at the downstream points of Oulton Broad and Kirkley Stream. Freshwater flow is halted when tidal water levels reach a level at which tidal locking occurs (i.e. closure of tidal gates by natural processes). Tidal locking helps prevent flooding in the centre of Lowestoft.

The Environment Agency (EA) is responsible for issuing flood warnings to the public and also publishing flood risk maps for river and tidal flooding. Figure 3.1 shows the flood extent for river and sea flood events[7]; one with a probability of occurring in any given year of 0.5% i.e. a Return Period (RP) of 1 in 200 years and 0.1% (1 in 1000 years RP). The RP is an estimate of the likelihood of an event of this level occurring once in so many years.

Figure 3.1: Lowestoft flood map for planning (River and Sea) showing flood extents for a flood that has a 1 in 200-year RP (dark blue) and 1 in 1000 year RP (light blue) chance of occurring



Source: Environmental Agency accessed November 2021

Three types of flooding pose a risk to Lowestoft:

- **Fluvial** – high river levels.
  - Tidal locking means that fluvial flood risk is generally limited to the west of Mutford Lock and Kirkley Stream (see explanation above).
- **Pluvial** – surface water flooding caused by runoff.

[7] Note the map does not distinguish between the two types of flooding

Within the Suffolk Flood Risk Management Strategy (2016), Lowestoft is highlighted as one of two areas which have the highest priority group in terms of properties at risk from 1in100 year surface water flood risk. Areas of Lowestoft at risk of surface water flooding include (Suffolk and Waveney DC, 2008):

- Central Lowestoft: Sewer capacity and tidal locking result in flooding following periods of heavy rainfall. Areas at risk include Station Square, Bevan Street, Tonning Street, Norwich Street, Belvedere Road, London Road and St John's Road and Marine Parade. The area is dependent on storm water overflows into the harbour so during periods of high sea levels the risk is heightened.

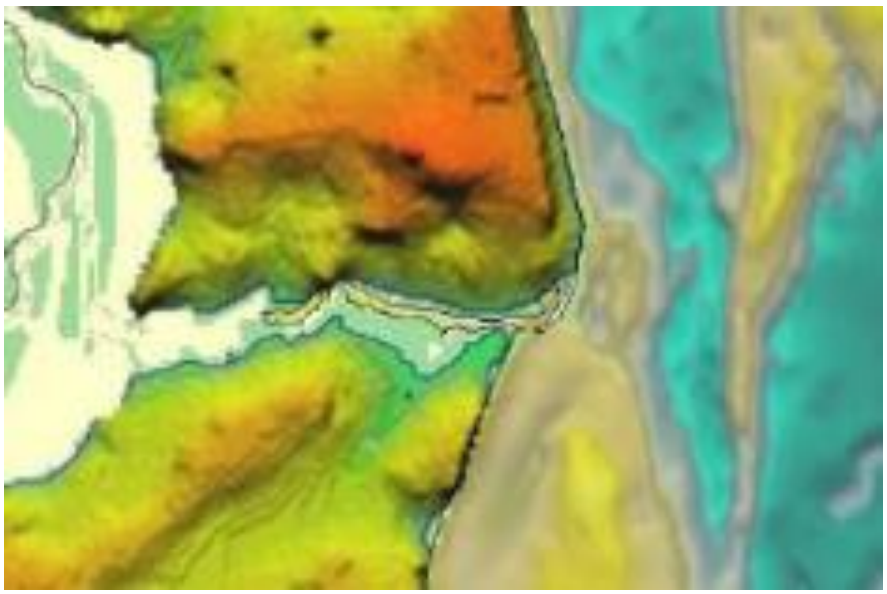
- **Tidal** – high / extreme sea levels.

  Tidal flooding at Lowestoft occurs when extreme sea levels exceed the level of the flood defences. Extreme sea levels are a combination of two components; an astronomical component (predicted tide level) and meteorological component (storm surges). The lowest lying areas of Lowestoft are at greatest risk of tidal flooding. Figure 3.2 shows the general topography and bathymetry at Lowestoft. Areas surrounding the Lowestoft Estuary are particularly vulnerable to tidal flooding. Key areas include:

  - Commercial Road / Station square;
  - Sections of the A12 along Belvedere Road and Waveney Road;
  - St Johns Road / B1532;
  - Durban Road;
  - Bridge Road; and
  - Industrial / commercial land on the south and north banks of Lake Lothing, Inner and Outer Harbour.

Whilst the three types of flooding can occur independently, tidal flooding poses the greatest risk to Lowestoft with the boundaries of Lake Lothing and the Inner and Outer Harbour being the most vulnerable. An additional source of flooding is wave overtopping. At Lowestoft the location of Outer Harbour breakwaters and nearshore sand bank system reduces this form of flood risk by causing incoming waves to break.

Figure 3.2: Lowestoft topography (land) and bathymetry (sea) map showing the harbour entrance and low-lying land to the west



Source: SMP7 (WDC, 2010) Black and orange colours represent higher elevations; green and white represent lower elevations. Yellow (shallower) and turquoise (deeper) areas east of the estuary mouth in the centre of the map represent the sea floor elevations. The sand banks offshore of Lowestoft are in light yellow.

3.1.2 History of flooding

Lowestoft has a history of tidal flooding. The largest flood event was caused by the 1953 North Sea storm surge. This caused widespread flood damage to the UK and Netherlands resulting in over 300 deaths in the UK. Coastal defences were breached with a peak water level recorded at Lowestoft of 3.35m AOD causing flooding of over 400 properties. The event at Lowestoft was estimated to have a 1 in 250 year RP and triggered increased awareness of coastal flood risk in the UK and monitoring of water levels including storm surges.

The top 10 highest extreme sea levels (up to and including 2017) recorded at Lowestoft are shown in Table 3.1 . An event in February 1993 caused an estimated £250,000 of damage in the region due to a combination of tidal flooding and runoff due to a saturated catchment. Flood records show that although tidal flooding is dominant, fluvial and pluvial events can cause flooding, such as surface water flooding in the Lowestoft area in September 2006 (WDC, 2008).

Table 3.1: Highest recorded sea levels for Lowestoft (1964 to Jan 2020)

Date	Level (M AOD)	Date	Level (in AOD)
1953 Storm Surge	*3.35*	28 January 1994	2.41
5th December 2013	*3.26*	13 January 2017	2.38
Top 11 extreme sea level of record (1964 to Jan 2020)		1 January 1995	2.36
5 December 2013	3.26	27 November 2011	2.33
29 September 1969	2.71	14 November 2011	2.33
1 February 1983	2.69	**Astronomical tide levels**	
21 February 1993	2.68	*Highest Astronomical tide (HAT)*	1.4
3 January 1976	2.68	*Mean High Water Spring (MHWS)*	0.9
9 November 2007	2.63	*Mean High Water Neap (MHWN)*	0.6

Source: National Oceanography Centre, 2021. The December 2013 storm surge, 1953 North Sea storm surge and astronomical tide levels have been included for comparison (show in italics)

More recently, three significant events caused by North Sea storms have resulted in tidal flooding:

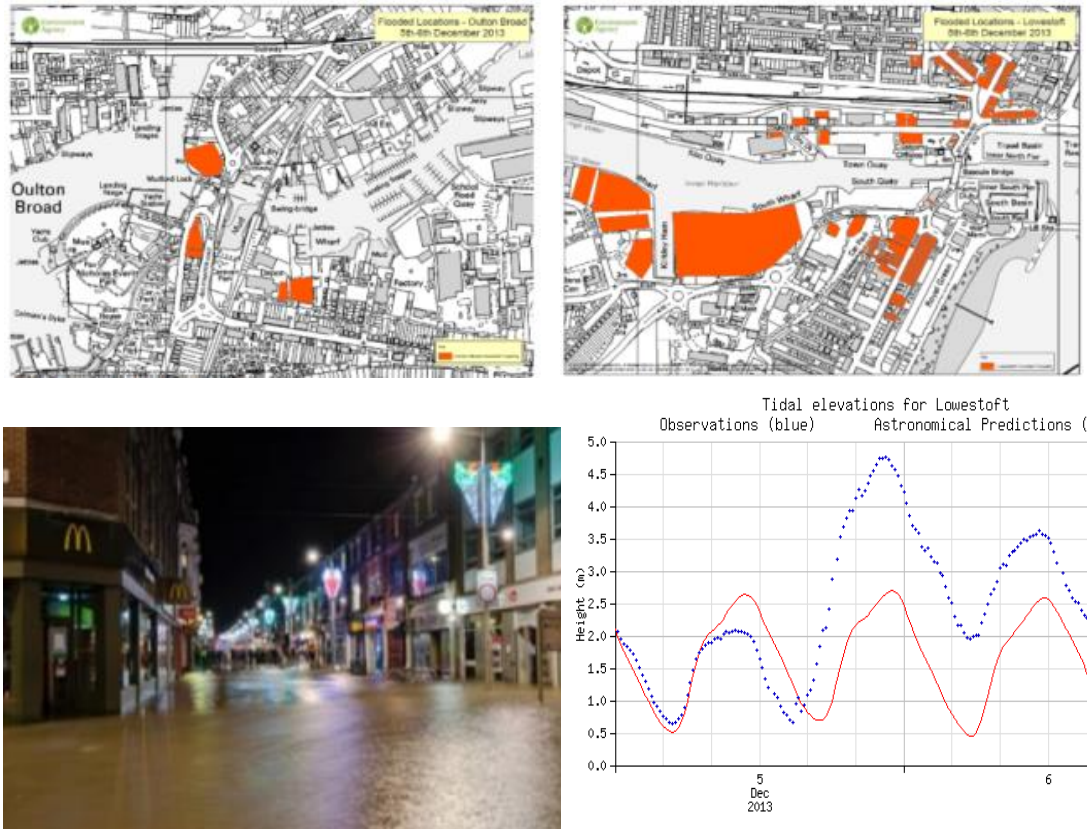
- 9th November 2007 (2.63m AOD);
- 5th December 2013 (3.26m AOD); and
- 13th January 2017 (2.38m AOD).

Figure 3.3 shows flooding in 2007. Water levels recorded were estimated to have a probability of occurring of 7% (i.e. a 1 in 15 year RP). The flood event caused limited flooding to the Lowestoft area but critically, highlighted the risk to flood waters outflanking the tidal defences at Mutford Lock (ground levels around the lock are up to 0.25m below the crest of the lock). The December 2013 event exceeded the largest water level on record and was the biggest UK storm surge since 1953. Figure 3.4 shows flooding in the centre of Lowestoft. The event flooded 250 properties in Lowestoft. The peak water level at Lowestoft was comparable with the 1953 storm surge (2013 event was only 0.09m lower) and equates to a water level with a probability of occurring of 0.4% (1 in 250-year RP).

Figure 3.3: 2007 flood event: Water bypassing Mutford Lock

Source: WDC, 2013Water is flowing downstream from Lake Lothing into Oulton broads

Figure 3.4: December 2013 storm event: Flood maps showing records of flooding in West Lowestoft (top left) and East Lowestoft (top right), Lowestoft tidal gauge showing recorded level in blue and astronomical tide prediction in red (bottom left). Flooding at station square / London Road (bottom left). The properties at Mutford Lock were flooded as a result of tidal locking and the Lower Elevation of land surrounding the lock system



Source: WDC, 2013; NTSLF, 2015

3.1.3 Flood risk policy and management

The Flood and Water Management Act 2010 (FWMA) provides legislation for the management of risks associated with flooding and coastal erosion. The Act defines various bodies as 'Risk Management Authorities'. Other key policy frameworks include The National Planning Policy Framework (2019) under the National Planning Policy Framework and Coastal Protection Act 1947. These reinforce the responsibilities of the Maritime Local Authority for managing flood risk and protecting coasts respectively. At Lowestoft, East Suffolk Council is both the Lead Local Flood Authority (LLFA) and Maritime Local Authority.

The LLFA is required to develop, maintain, apply and monitor a local strategy for flood risk management in its area. Lowestoft falls within the Suffolk Local Flood Risk Management Strategy (SLFRM) issued by the Suffolk Flood Risk Management Partnership (of which East Suffolk Council is part of). Lowestoft is regarded as the 2nd priority town at risk according to the SLFRM (Suffolk Flood Risk Management Partnership, 2016). AECOM completed the latest available Strategic Flood Risk Assessment (SFRA) (Level 2) for Lowestoft on behalf of the East Suffolk Councils in 2018. The Level 2 SFRA states the following recommendations:

- Only compatible development or essential infrastructure should be considered in areas of high risk (Flood Zone 3b).
- The finished floor levels should be raised 300 mm above the estimate 0.5% AEP plus the climate change tidal flood level in areas that are 'more vulnerable' and where achievable for areas that are 'less vulnerable'. Furthermore, an emergency refuge structure should be placed above the 0.1% AEP flood level (including adjustment for climate change).
- Site specific flood emergency procedure and/or plan must be enforced, including evacuation and refuge procedures.
- Any land raising requires site specific analysis and agreement from the EA and Local Authority.
- A 16 m buffer strip along the main rivers and formal coastal defences should be maintained. Any development required in these areas should apply for an environmental permit and consult the Local Authority.
- All new development should consider SuDS implementation.

The Lake Lothing AAP concluded that there are limited areas within the Local Development Framework Potential Growth Area that lie outside the EA flood zones and that the areas may not be available or appropriate for development. The recommendation is that these areas be investigated, and all options exhausted before sites within the EA flood zones are considered. East Suffolk Council has the responsibility for managing flood risk at Lowestoft and new development sites should follow the SFRA approach with the EA consulted to confirm acceptance.

The strategic plan for the long-term management of the coastline is defined within non-statutory plans called Shoreline Management Plans (SMP). The current SMP approach for Lowestoft is to hold the line by maintaining all existing defences at Lowestoft Ness and Outer Harbour, the Inner Harbour and South Beach (Waveney Council, 2010).

3.1.4 Current flood defences

The EA asset databases (currently AIMS) details the location and condition of flood defences for Waveney. The details presented here are a summary from the SFRA. The Lowestoft coastline and estuarine sections of Lake Lothing include different types of man-made structures. Current

flood defences structures include concrete seawalls, sheet pile quay walls and *ad-hoc* flood walls. However, it is identified in the SFRA that there are no “formal” flood defences protecting the area, although it is noted that the extensive lengths of hard engineered riverbanks and seawalls do provide some level of protection. A summary of flood defences at Lowestoft is given in Table 3.2 with images shown in Figure 3.5 of the Kirkby waterfront river wall and the PowerPark sea wall.

Table 3.2: Existing flood defences

Location	Flood Defences
North beach shoreline	Tidal: Concrete seawall, rock armour
Inner and outer Harbour	Tidal and fluvial: North and South pier, quay walls and ad-hoc flood walls
Lake Lothing	Tidal and fluvial: Quay walls, undefended areas and Mutford Lock
Kirkley Stream	Tidal, fluvial and pluvial: Flapped culvert, Linear defences and defence structure (NFCDD data)
South Beach shoreline	Tidal: Concrete seawall

Source: Suffolk and Waveney DC, 2008; WDC, 2010; WDC, 2013

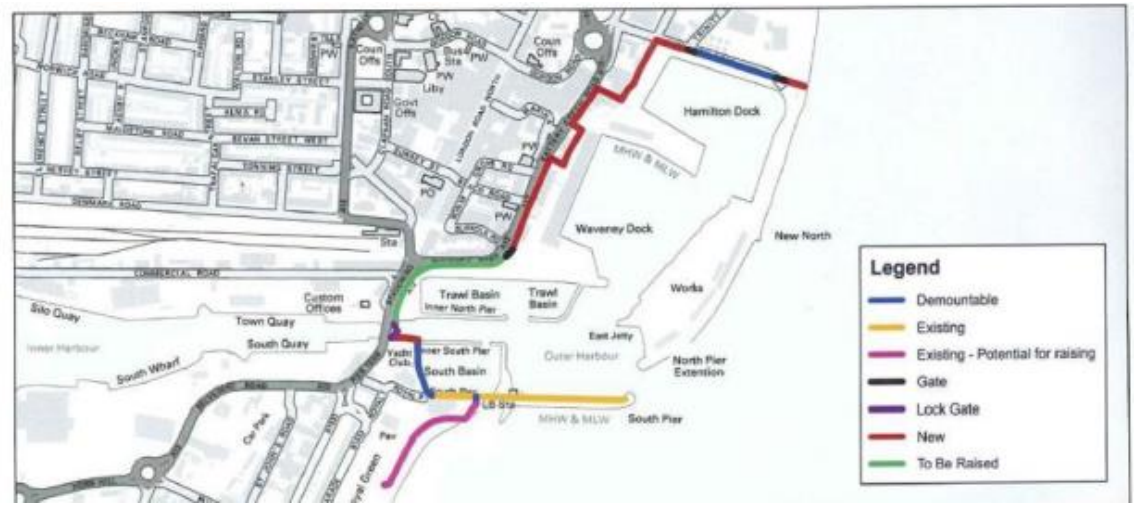
Figure 3.5: Lowestoft Flood Defences: Rivel wall along Kirkby waterfront (left), Sea wall along PowerPark (right)

Source: Suffolk and Waveney, DC, 2008

There are a number of bodies responsible for the flood defences in Lowestoft including the EA, East Suffolk Council and private landowners such as Associated British Ports. The 2018 SFRA maintains that although there are no ‘formal flood defences the existing defences are generally in good condition, however, the flood defence levels are not high enough to prevent tidal flooding in the future under present projected changes in sea levels.’

Based on the Lowestoft hydraulic modelling study (CH2M, 2014), the Local Flood Risk Management Strategy (2016) proposed several options to mitigate flooding. The final option chosen was option 5 – *Bascule Bridge Barrier and Walls* XX (East Suffolk Councils, 2018). It is understood that this scheme is currently being progressed.

Figure 3.6: Existing and proposed flood defences based on the Lowestoft Hydraulic modelling study



Source: East Suffolk Councils, 2018

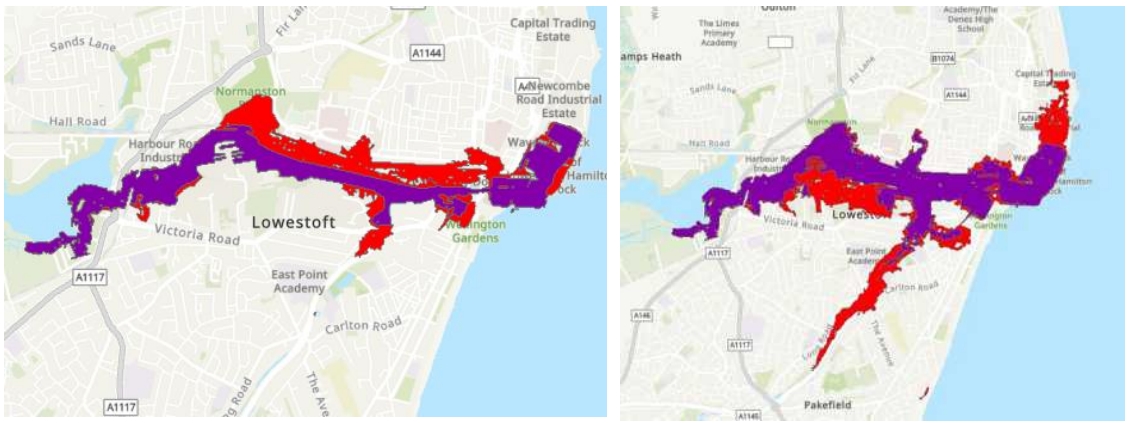
3.1.5 Lowestoft flood risk studies and flood maps

Whilst the EA flood maps (see Figure 3.1) have been reviewed, the most up to date flood risk studies at Lowestoft have been undertaken in 2017 by Jacobs for Waveney District Council. The summary of present day and future flood risk presented below is based on flood map extents obtained from Jacobs.

3.1.5.1 Present day flood risk

Figure 3.7 Shows the present-day tidal flood risk 1 in 20, 1 in 100 and 1 in 200 and 1 in 1000 tear RP events.

Figure 3.7: Maximum flood extents (Do-Nothing Scenario)
1 in 20 (purple) and 1 in 100-year RP (red) present day flood extent (left)
1 in 200 (purple) and 1 in 1000 year RP (red) present day flood extent



Source: Jacobs, 2017

The 1 in 20-year event (5% probability of occurring in any given year) results in almost no flooding to Lowestoft. Only the low-lying land north and south of Belvedere Road and parts of St John's Road are at risk. Areas at risk for the 1 in 100-year (1%) event are Commercial Road / Station Square, Waveney Road, Denmark Road, north bank of Lake Lothing (near Peto Way),

London Road South, additional properties on St John's Road, areas of the North Quay retail park and areas further downstream along Kirkley Stream.

The less frequent but more severe events (1 in 200 year and 1 in 1000-year events) indicate significant flooding in Lowestoft, particularly areas north and south of Lake Lothing, the area around St Johns Road and north of Hamilton Dock.

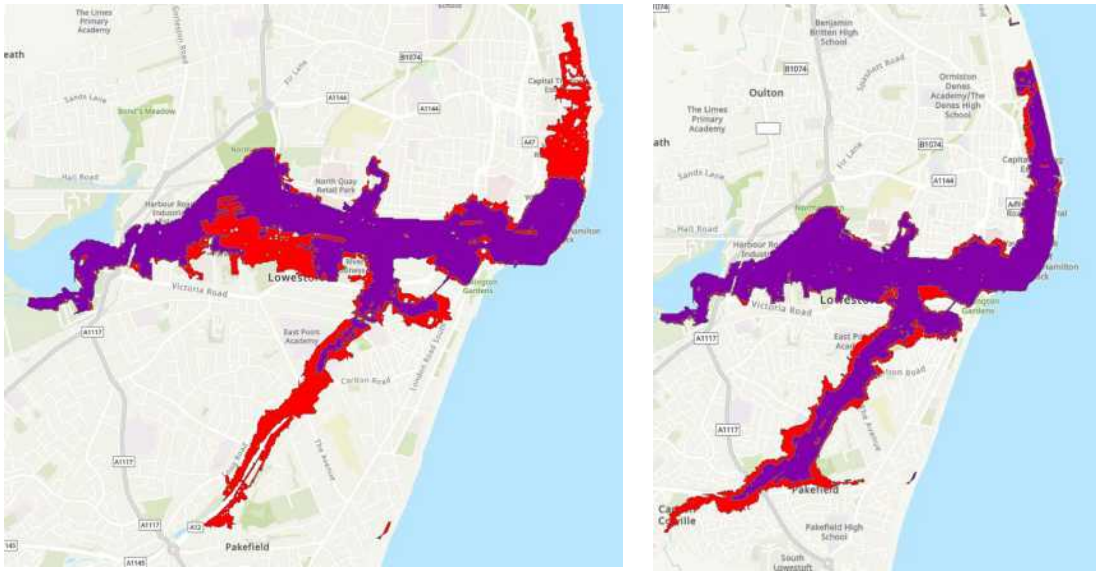
The critical flood pathways are at Waveney Road / Station Square and Belvedere Road (Outer Harbour), the north and south banks of Lake Lothing / Inner Harbour and Mutford Lock. Overtopping of tidal waters occurs for events with a probability of occurrence of 4% (1 in 25-year RP) in Central Lowestoft and 10% (1 in 10 year RP) at Mutford Lock. A recent 'near miss' event on 10th January 2015 resulted in a recorded water level with an estimated 25% (1 in 4-year RP) probability of occurrence in any given year (2.21m AOD). Minor overtopping of defences at Mutford Lock was observed but there was no reported flooding to properties at Lowestoft.

3.1.5.2 Future Flood Risk estimates

At Lowestoft, mean sea level is projected to rise by 0.97 m by 2111, assuming that the base year is 2011 and considering the UKCP18 RP8.5 climate change scenario within the 70th confidence percentile (Mett Office, 2021). With a similar frequency, track and magnitude of storms, higher sea levels will significantly increase flood risk in Lowestoft both in terms of flooding extent and frequency.

Figure 3.8 shows the future day (2117) tidal flood risk 1 in 20, 1 in 100, 1 in 200 and 1 in 1000-year RP events.

Figure 3.8: Maximum flood extents predicted for future years with climate change effects (2117)
1 in 20 + Climate Change (CC)(Purple) and 1 in 100-years + CC (Red) flood extent (Left)
1 in 200 + CC (Purple) and 1 in 1000-year + CC RP (Red) present day flood extent (Right)



Notwithstanding areas at flood risk today, the additional areas at flood risk in 2117 are:

- properties at the upstream end, downstream end and on banks of Kirkley Stream including as far south as Lowestoft and Stradbroke Road;
- shoreline and low-lying land fronting the coastal cliffs at and north of Ness Point; and
- south bank of Lake Lothing / Inner Harbour including properties at Waveney Drive and Waveney Crescent.

3.2 Summary

The main source of flooding in Lowestoft is tidal flooding with limited fluvial and pluvial flood events being recorded. Tidal flooding occurs around the low lying boundary of Lake Lothing when Mutford Lock becomes tide locked. Existing and future developments are at risk with the impacts of climate change increasing the likely magnitude and frequency of current tidal flood events. SFRA recommendations should be followed for any new developments at Lowestoft to minimise / mitigate the impacts of flood risk.

Today, a tidal flood event with a 5% (1 in 20 year event) probability of occurring in any given year results in limited flooding to properties. Significant flooding of residential and commercial properties occurs above the 1 in 20 year event with central Lowestoft and the boundaries of Lake Lothing / Harbour areas most at risk. The December 2013 event was the largest tidal event at Lowestoft for 60 years and resulted in flooding of 250 properties. This event had a probability of just less than 1% (1 in 150 year RP). The less frequent 1 in 200 year (0.5%) and 1 in 1000 year (0.1%) RP tidal events would result in significant flooding to central, north and south Lowestoft.

If there are no changes to the existing flood defences the impact of climate change will increase flood risk at Lowestoft significantly, both in terms of magnitude and frequency. Increased sea levels mean that the probability of the December 2013 event occurring could increase from less than 1% (1 in 150) to 20% (1 in 5) or in other terms could occur as frequently as once every 5 years[8].

[8] References to flood extents in this section are from the *Lowestoft Tidal Barrier Report* produced by CH2MHill (July 2014 Issue)

4 Economic assessment

4.1 Introduction and approach

The following sets out our approach to understanding the current and future economic footprint at risk from flooding within the study area. The economic assessment calculates the current footprint of the area measured through land utilisation and employment density calculations to determine jobs and GVA figures for the study area. The same analysis is then produced for the current economic footprint with flood extent scenarios provided by Jacobs. This is then followed by production of a future economic footprint assuming the employment allocations in the Local Plan[9] are implemented and what this would mean for future jobs and GVA again set against flood extent limits.

4.2 Land utilisation

This section describes the land uses in each of the major site allocations within the study area in the Local Plan and how they are proposed to change in future through local planning policy and development aspirations The Local Plan identifies Central and Coastal Lowestoft as a strategic location for regeneration and development within Waveney to deliver future employment and housing.

4.2.1 Study site allocations

The Central and Coastal Lowestoft area is divided into 22 opportunity areas as previously set out in Figure 2.5. Within the area around Lake Lothing there are a series of strategic employment and housing allocations detailed within the Local Plan. Each site allocation has been identified as having significant opportunities for development and represents land that is suitable and likely to become available for redevelopment during the period until 2036.

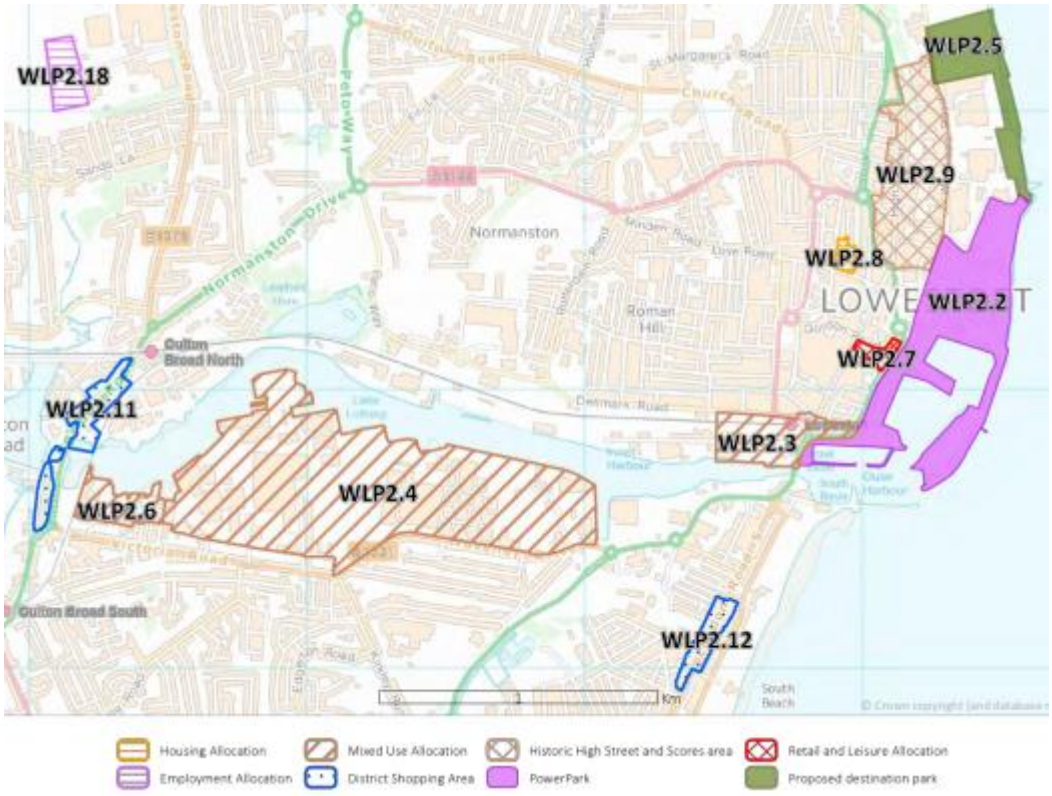
The key allocated development sites identified in the Local Plan are:

- Policy WLP2.2 – Power Park
- Policy WLP2.3 – Peto Square
- Policy WLP2.4 – Kirkley Waterfront and Sustainable Urban Neighbourhood
- Policy WLP2.5 – East of England Park
- Policy WLP2.6 – Western End of Lake Lothing
- Policy WLP2.7 – Former Battery Green Car Park
- Policy WLP2.8 – Former Lowestoft Hospital
- Policy WLP2.9 – Historic High Street and Scores Area
- Policy WLP2.10 – Inner Harbour Port Area
- Policy WLP2.11 Oulton Broad District Shopping Centre
- Policy WLP2.12 – Kirkley District Shopping Centre

This section details the development planned within the strategic employment site allocations demonstrating the significant level of development which is anticipated within the Lake Lothing area over the Local Plan period. A map of these key development sites is shown in Figure 4.1 below.

[9] Employment allocations modelled as part of the future economic footprint have been consulted on with representatives from East Suffolk Council.

Figure 4.1: Key Site Allocations around Lake Lothing



Source: Waveney Local Plan 2019

4.2.1.1 Policy WLP2.2 – Power Park

PowerPark comprises the area south of Ness Point and west of Battery Green Road and includes Hamilton Dock, Waveney Dock, along with parts of Trawl Dock and Outer Harbour. PowerPark is a large employment area situated on the coast comprising of 23.37 ha and been allocated B1, B2 and B8 land in addition to port related development. There are key opportunities to support offshore services including wind, oil and gas and other offshore renewables. The vision for the PowerPark is to create a cluster of business activity within the energy sector to capitalise on growth opportunities in this sector. This is supported in particular by the presence of OrbisEnergy who provide office space to businesses within the energy sector, and by the location of companies such as Scottish Power Renewables and Associated British Ports.

PowerPark has long been identified as a location to capitalise on the growth opportunity provided by the offshore energy sector to boost employment and productivity levels as set out originally in the Lake Lothing Area Action Plan and again within the Local Plan. An example of how the PowerPark is capitalising on the growth opportunities provided by energy includes the proposed East Anglia Array wind farm which is located 30 miles of the coast of Lowestoft. The outer harbour within the PowerPark has been chosen as the construction and operations based for the first phase of the scheme and there will be future phases which provide additional opportunities. Similarly ABP's LEEF East Project to create three new berths with an increased depth of 5.35m will provide a step change in capacity that is required to support energy company investment

Figure 4.2: Scottish Power Renewables

Source: Mott MacDonald

Figure 4.3: Orbis Centre

Source: Waveney Local Plan (2020)

4.2.1.2 Policy WLP2.3 – Peto Square

Peto Square comprises of the areas to the north of the Bascule Bridge. This area provides a key gateway to the historic townscape and is home to a number of Grade II listed buildings known as Port House, Tuttles Building and the Railway Station. This allocation forms part of the Station Quarter of the Town Masterplan.

The area contains a variety of commercial uses including retail, catering and seaside/tourism businesses. Large volumes of traffic currently run through the policy area which detracts the development of the area. The third vehicular crossing across Lake Lothing is expected to relieve traffic congestion and ultimately improve the general amenity and attractiveness of Peto Square.

Figure 4.4: Train Station

Source: Mott MacDonald

Figure 4.5: Station Square

Source: Mott MacDonald

The site covers an area of 5.8 ha and has been allocated for mixed-use development, the expected development includes:

- Commercial space including restaurants (A3), drinking establishments (A4), leisure uses (D2) and retail (A1);
- Improvements to the appearance of the railway station by renovating and repurposing vacant parts of the building;
- Easing of traffic congestion by investing in a third vehicular crossing over Lake Lothing;
- Improving pedestrian and cycle links to the seafront.

4.2.1.3 Policy WLP2.4 – Kirkley Waterfront and Sustainable Urban Neighbourhood

The vision for this site is to transform it into a vibrant, inclusive community that is integrated with the adjacent areas with access to employment and services presented by the waterfront. The site is bounded to the west by Stanley Road and to the east by the water inlet to the north of the Waveney Drive/Horn Hill roundabout. The site provides a strategic waterfront regeneration opportunity which can help to support the regeneration of the south side of Lake Lothing which is currently comprised of mainly vacant or underutilised sites. The site is c.60ha and is split into key areas shown in Figure 4.6 below:

Figure 4.6: Kirkley Waterfront and Sustainable Urban Neighbourhood site

Source: Waveney Local Plan 2019

The site is allocated for mixed use development including:

- Approximately 1,380 new dwellings;
- Retirement community comprising a care home/nursing home and extra care and/or sheltered dwellings;
- 2 form entry primary school and a pre-school setting (2.2 hectares);
- Playing field;
- Local retail centre comprising a mix of convenience retail, cafés and other local services;
- Marina facilities; and
- Approximately 7.5 hectares of employment development (falling under use classes B1, B2 or B8) and/or port related development fronting Lake Lothing.

Outline planning permission has already been granted for 1,180 new homes; a new retail centre; new leisure facilities; a playing field and a one and a half form entry primary school. In addition offices have been developed for East Suffolk Council and Essex and Suffolk Water. Regeneration of the site will be further supported by the development of the third crossing which will improve accessibility north and south of Lake Lothing.

Figure 4.7: Windcat Workboats

Source: Mott MacDonald

Figure 4.8: Brooke Peninsula

Source: Mott MacDonald

4.2.1.4 Policy WLP2.5 – East of England Park

Located between the beachfront and Whapload Road, the site is characterised by underutilised and poorly maintained open space. The site also incorporates Ness Point, the most easterly point in England. Despite the heritage value provided by Ness Point, the site has poor connections and is surrounded by industrial land uses to the south.

Figure 4.9: Ness Point

Source: Mott MacDonald

Figure 4.10: Ness Point Wind turbine

Source: Mott MacDonald

To vision is to create a new cultural/events space for Lowestoft which helps to celebrate the most eastern point in England linking into existing public spaces. The East of England Park will be created as a high-quality landscaped area that which will seek to include the following features:

- A pavilion/café/orientation facilities at Ness Point;
- Landmark structure/sculpture to celebrate the most easterly point; and
- Play facilities.

4.2.1.5 Policy WLP2.6 – Western End of Lake Lothing

The Western End of Lake Lothing policy area is the area to the southwest of Lake Lothing between Stanley Road and South Elmham Terrace that currently contains small scale industrial uses and under-utilised land. The vision is for the site to provide both residential and maritime related uses. Most of the site is already developed and any development on this site will be through redevelopment of existing buildings.

The Western End of Lake Lothing is a 3.83ha site that has been allocated for mixed use development including:

- Approximately 57 dwellings;
- Marine-focused employment; and
- Tourism uses.

4.2.1.6 Policy WLP2.7 – Former Battery Green Car Park

The Former Battery Green Car Park has long been identified as a site for redevelopment within Lowestoft and faces onto the A12 at Battery Green Road. The car park is being demolished following closure due to structural issues and low demand from visitors.

The Former Battery Green Car Park is a 0.87 hectare site allocated for redevelopment for town centre uses including retail and leisure development falling within A1, A2, A3, A4, C1 and D2 use classes. The site forms part of the cultural quarter identified within the Town Investment Plan.

4.2.1.7 Policy WLP2.8 – Former Lowestoft Hospital

The former Lowestoft Hospital is located to the northwest of the town centre between Alexandra Road, Milton Road East and Tennyson Road. It is a brownfield site with accessibility to the town centre. The former Lowestoft Hospital is a 0.72 hectare site allocated for development of 45 homes.

4.2.1.8 Policy WLP2.9 – Historic High Street and Scores Area

The historic High Street and Scores form some of the most historic parts of Lowestoft. The area sits within one of the 10% most deprived wards in the country and is one of the most deprived areas in Lowestoft., The area east of the historic High Street is characterised by a network of alleyways which linked the town with the original fishing port. Current uses include the Triangle market and a mix of retail, cafes, pubs restaurants and residential uses.

The Local Plan states that the Historic High Street and Scores area should be conserved and enhanced through heritage-based regeneration which is reinforced by its location within the North Lowestoft Heritage Action Zone. The objective is for the area to complement the town centre, support local tourism and provide improved connections between the town centre and the East of England Park. This area forms part of the Historic Quarter within the Town Centre Masterplan and the Town Investment Plan.

Figure 4.11: Historic High Street

Source: Mott MacDonald

Figure 4.12: Vacant Unit (High Street)

Source: Mott MacDonald

4.2.1.9 Policy WLP2.10 Inner Harbour Port Area

The Inner Harbour Port Area covers the Port of Lowestoft on the banks of the Lake Lothing and contains South Quay to the west of Bascule Bridge. The Port of Lowestoft is owned by Associated British Ports which provides port related services across Europe for sectors including the offshore energy sector as well as general cargo handling. Similarly South Quay is a heavy lifting quay providing services for the offshore energy sector. This area is protected within the Local Plan for port related uses except for land use change required to deliver the Lake Lothing Third Crossing.

4.2.1.10 Policy WLP2.11 Oulton Broad District Shopping Centre

Oulton Broad District Shopping Centre is located to the West of Lake Lothing and is a secondary retail destination with approximately 50 units[10]. The area is allocated within the Local Plan to permit New Town Centre Use Development (falling within use classes A1, A2, A3, A4, A5, C1, D2 and B1a) where this does not impact on the vitality and viability of the town. Based on this policy changes of uses of ground floor premises from retail and financial and professional services to drinking establishments and takeaways and other uses is not permitted to support the area as a district shopping centre.

4.2.1.11 Policy WLP2.12 – Kirkley District Shopping Centre

Kirkley District Shopping Centre is located to the southeast of Lake Lothing along London Road between Parade Road South and Lorne Park Road. The area is known locally as 'Kirkley Village centre' and is relatively well occupied with 80 units[11] occupied by retail and leisure uses and a good range of independent stores and cafés. The key objective for this area is to increase footfall from visitors to the area visiting the seafront through a greater range of restaurants and cafes as well as improved signage

Based on this policy uses are permitted for A1, A2, A3, A4, A5, C1, D2 and B1a use classes to support the district centre where this doesn't detract from Lowestoft Town Centre offer.

[10] This is based on 2016 monitoring data referenced in the 2019 Local Plan

[11] This is based upon information on unit counts provided within the Local Plan

4.3 Measuring the economic footprint

The economic footprint of the study area has been calculated using Mott MacDonald's in-house Transparent Economic Assessment Model (TEAM) to estimate the level of gross direct jobs that are present in the area and the indirect (supply chain) and induced (consumption-related) jobs that are linked to the direct economic activity in the area. TEAM is a versatile tool designed to calculate the economic impact of proposed infrastructure intervention and policy measures. It has been designed by experts in economics, economic development and regeneration and is in-line with HM Treasury *Green Book* principles and Homes & Communities Agency's (HCA) *Additionality* guidelines.

The project team has assessed the economic footprint for the following 2 scenarios[12]:

- **Existing position:** Analysis of the existing position based on current land use patterns and amount of economic activity on each site.
- **Future position**: Assessment of economic activity associated with future development and land utilisation anticipated based on policy in the Waveney Local Plan (2019) and consultation with East Suffolk Council.

For each scenario we capture the economic footprint in terms of jobs and GVA linked directly to land utilisation using TEAM. For each scenario the economic footprint is captured in gross terms through the following steps:

- Inputting of key land use details into TEAM, including:
  - Floorspace - this has been informed by employment survey Geographic Information Systems (GIS) data provided by East Suffolk Council and GIS analysis[13]
  - Land use classification - this has been informed by employment survey Geographic Information Systems (GIS) data provided by East Suffolk Council and GIS analysis and supported by observations from a site visit in November 2021.
- Calculation of the direct, indirect and induced economic impacts through feeding the land uses by size through TEAM to calculate:
  - Direct effects of the site in terms of employment and economic output (measured by GVA) of the site as it is in the current scenario or of it being fully developed in the future scenario[14].
  - Indirect effects in the supply chain using multiplier analysis based on the direct effects.
  - Induced effects generated by those employed directly and indirectly spending a portion of salary income on local goods and services through consumption multiplier effects.
  - A multiplier of 0.3 has been applied to gross direct impacts to estimate the number of indirect and induced jobs supported. This reflects HCA *Additionality* guidelines.

A full set of assumptions is included within the appendix of this report.

4.4 Flood Risk Scenarios

For each of the scenarios, current and future, GIS analysis has been undertaken to assess the level of economic activity at risk in the event of a 1 in 200-year flood event. These scenarios have been chosen in consultation with Coastal Partnership East and East Suffolk Council. These flood extents have been provided by Jacobs and include two flood risk scenarios.

- Scenario 1 (Do nothing)
- Scenario 2 (Do something with Preferred Tidal defence barrier)

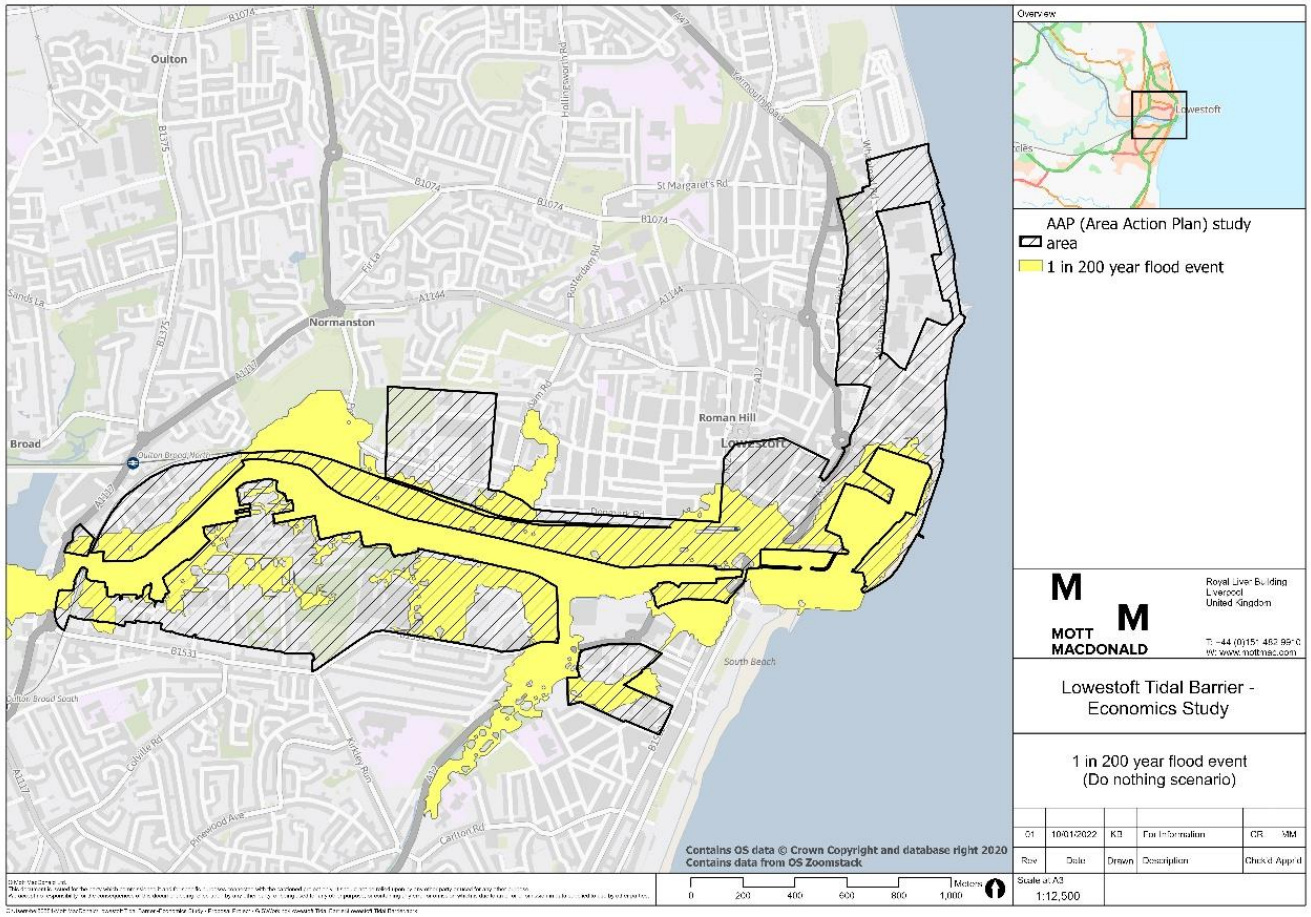
[12] As previously noted, the analysis produced here is set at the gross level. No conversion to net through allowances for deadweight, displacement and leakage is required. An average GVA per worker figure for East region has been utilised of £53,392 for all jobs.

[13] It has been assumed that floorspace in the data is GEA to be conservative and has been converted to NIA (85%) and GIA (95%) where appropriate for each land use classification

[14] It should be noted that this includes both vacant and non-vacant uses

Figure 4.13 shows the area at risk under a 1 in 200-year flood event in scenario 1 (Do nothing)

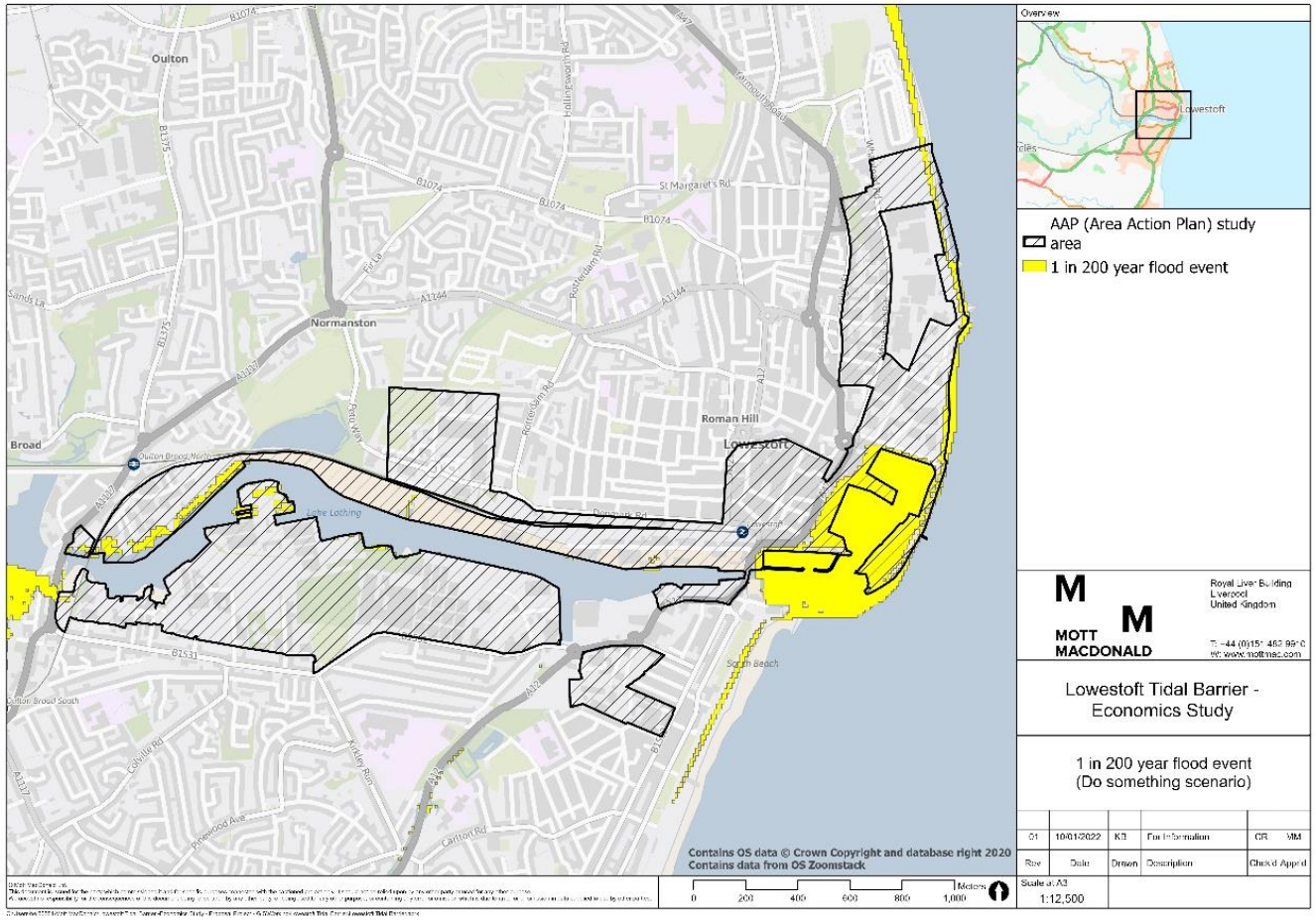
Figure 4.13: Do Nothing 1 in 200-year flood extent



Source: Mott MacDonald

Figure 4.14 shows the area at risk under a 1 in 200-year flood event in scenario 2 (Do Something with Preferred Tidal defence barrier)

Figure 4.14: Do Something 1 in 200 flood extents



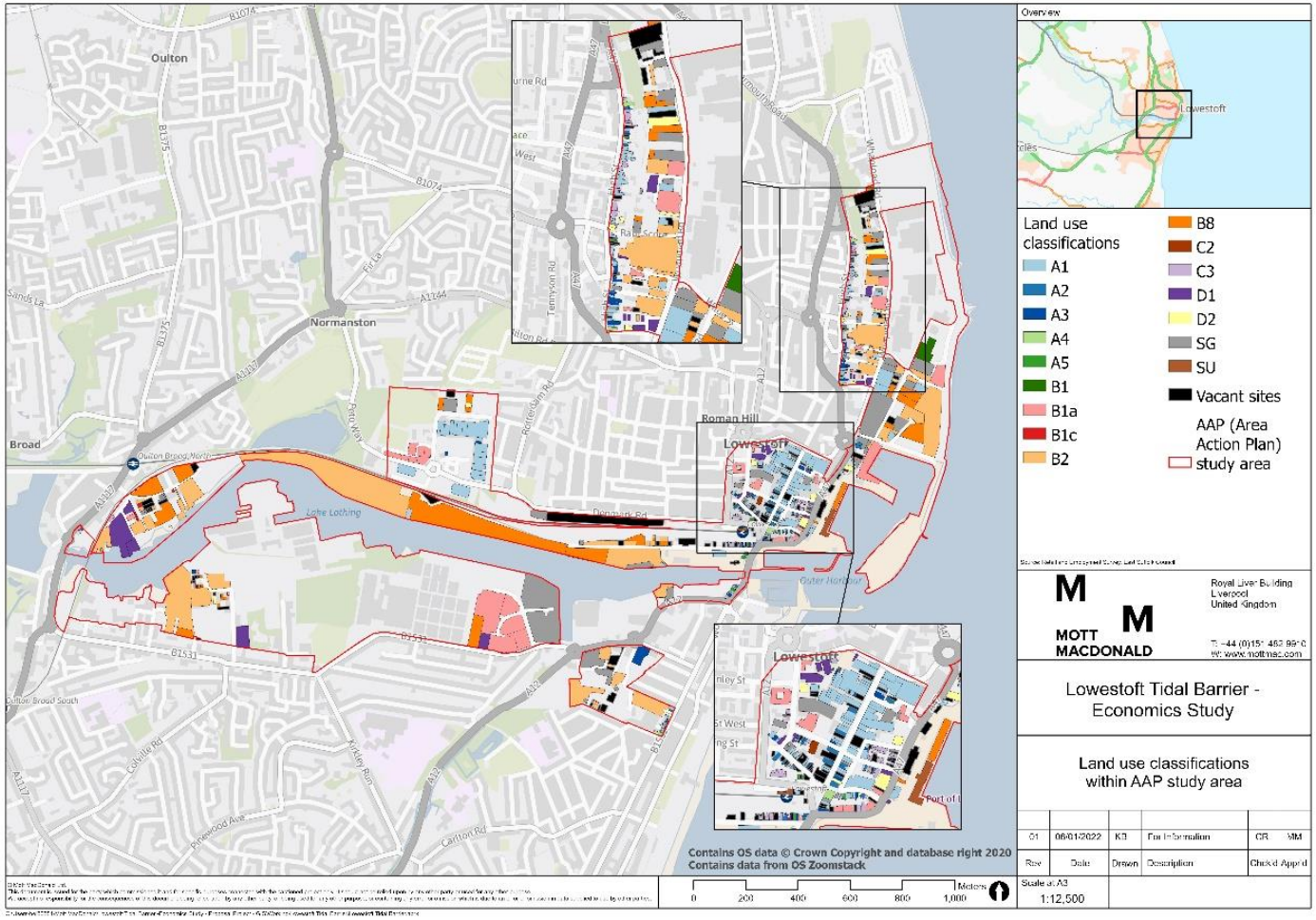
Source: Mott MacDonald

Both maps illustrate the enhanced level of protection from flooding in a 1 in 200 year flood event provided by the defences under scenario 2 (Do Something).

4.5 Economic Footprint 2021

A combination of data received from East Suffolk Council and information from a site visit in November 2021 was used to help generate information on approximate land use and site area for businesses within the study area. Figure 4.15 shows the approximate land use designated for areas in the study area This information was then inputted into TEAM to generate the current economic footprint detailed in the following sections.

Figure 4.15: Land use classes in Lowestoft AAP Area, 2021



Source: Mott MacDonald

4.5.1 Jobs and GVA

Table 4.1 below shows the gross direct, indirect, and induced jobs and GVA[15] that have been calculated using TEAM in the study area within the current economic footprint based on data provided by East Suffolk Council. The gross direct jobs are those which are directly supported by businesses in the local study area. Any indirect and induced impacts are generated as a result of supply chain benefits, and expenditure generated from gross direct employment in the area.

Table 4.1: Current economic footprint, gross position

Study sub-area	Jobs			GVA, £m[16]		
	Direct	**Indirect & Induced**	**Total**	**Direct**	**Indirect & Induced**	**Total**
Total	6,400	1,900	8,300	£342	£101	£443

Source: Mott MacDonald

The study area's current economic footprint in total supports approximately **6,400 gross direct jobs** and **£342m gross direct GVA pa**[17]. In turn this supports an additional **1,900 indirect and induced jobs** that generates an additional **£101m GVA pa for the economy**[18]. Therefore, in total the area supports **8,300 jobs** and £**443m GVA pa** illustrating the importance of this area to the East Suffolk economy, and the wider regional and national economy as a whole.

4.6 Flood risk scenarios and economic impact

4.6.1 Scenario 1 (Do nothing)

Table 4.2 shows the level of economic activity at risk within a 1 In 200 year flood event under scenario 1 (Do nothing).

Table 4.2: Economic activity at risk under scenario 1 (Do nothing) 1 in 200-year flood extent

	Current economic footprint total	Economic activity at risk in a 1 in 200-year flood event	% of current economic footprint at risk in 1 in 200 year-flood
Gross direct jobs	6,400	1,900	30%
Indirect & Induced jobs	1,900	600	
Total jobs	8,300	2,500	
Gross direct GVA (£m)	£342	£101	30%
Indirect & Induced (£m)	£101	£32	
Total GVA (£m)	£443	£133	

Source: Mott MacDonald

- Scenario 1 (Do nothing):

[15] The GVA reference throughout this section is the annual amount of GVA produced cumulatively by the economic activity in the study area. Clearly, this is not the financial impact of a flood which is a relatively short-lived event, although the GVA is at risk if companies are not able to recover and reinstate their productive activity.

[16] GVA is at 2018 prices, the latest readily available from published data sets

[17] The direct jobs and GVA are derived from economic activity undertaken within the study area boundary

[18] The indirect and induced jobs and GVA could be located anywhere. They could be in the study area, other parts of East Anglia, the UK or even overseas depending on the supply chain links though the majority will probably be within East Anglia. Indirect and induced effects are inextricably linked to direct activity and would be affected if economic activity in the study area was curtailed or extinguished due to flooding and flood events.

- In the event of a 1 in 200-year flood approximately **1,900 gross direct jobs** would be affected by flooding of the study area which would have a knock-on effect on an additional **600 indirect and induced jobs**.
- In total a 1 in 200-year flood would affect approximately **2,500 jobs**. This would affect **£101 million gross direct GVA** linked to economic activity in the study area and a further **£32 million GVA** from indirect and induced impacts. Therefore, in total a 1 in 200-year flood would negatively affect **£133 million GVA** for the wider economy.

4.6.2 Scenario 2 (Do something with Preferred Tidal defence barrier)

Table 4.3 below, sets out economic activity at risk from flooding in the event of a 1 in 200-year flood event under Scenario 2 (Do something with Preferred Tidal defence barrier). The data covers the total economic activity at risk in the whole study area.

Table 4.3: Economic activity at risk under Scenario 2 (Do something with Preferred Tidal defence barrier) 1 in 200-year flood extent

	Current economic footprint total	Economic activity at risk in a 1 in 200-year flood event	% of current economic footprint at risk in 1 in 200 year-flood
Gross direct jobs	6,400	400	6%
Indirect & Induced jobs	1,900	100	
Total jobs	8,300	500	
Gross direct GVA (£m)	£342	£21	6%
Indirect & Induced (£m)	£101	£5	
Total GVA (£m)	£443	£27	

Source: Mott MacDonald

- Scenario 2 (Do something with Preferred Tidal defence barrier):
  - In the event of a 1 in 200-year flood approximately **400 gross direct jobs** would be affected by flooding of the study area which would have a knock-on effect on **100 indirect and induced jobs**.
  - In total a 1 in 200-year flood would affect approximately **500 jobs**. This would affect **£21 million gross direct GVA** linked to economic activity in the AAP area and a further **£5 million GVA** from indirect and induced impacts. Therefore, in total a 1 in 200-year flood would affect **£30 million GVA** for the wider economy.

These results further illustrate the importance that must be stressed in providing improved flood defences for the area of Lowestoft, based on its importance to not only the local economy but also to the wider economy as a whole. It also demonstrates that even with the preferred option of flood defence a proportion of the economic activity within the current economic footprint is still vulnerable.

4.7 Future Land utilisation, flooding and economic impact

Whilst it is important to understand the impact of flooding on economic activity on the local economy in its current state, it is also imperative that we understand how flood events will affect the economy moving forward.

In order to understand the potential future impacts of flooding for economic activity in the area, information from the latest Local Plan in consultation with East Suffolk Council was used to set out the area's future economic footprint building on the current economic footprint we have calculated above. Where there is existing use on development sites, the net case has been

taken to allow for this and avoid double counting[19]. Assumptions on potential employment sites such as potential land use and site areas were taken from the Local Plan and discussed with representatives from East Suffolk Council to inform assumptions which were then run through our Economic Impact Model TEAM to derive the area's gross direct, indirect and induced economic activity. Where information on areas was not available, GIS analysis was used to derive this. We have only projected future economic activity for employment sites set out in the Local Plan and identified following consultation with East Suffolk Council. It should be noted that with the future use there is a significant amount of uncertainty (due to uncertainty around quantum, quality, scale, configuration and design of individual developments) and therefore the economic activity at risk from flooding in future is an estimation based on what is known at present and made on reasonable assumptions. The future use is the current use in addition to any future developments detailed in the Local Plan and discussed with representatives from East Suffolk Council. Following consultation with representatives from East Suffolk Council the following future employment sites have been used to understand the future economic footprint. These are detailed in Table 4.4 and represented spatially on Figure 4.16.

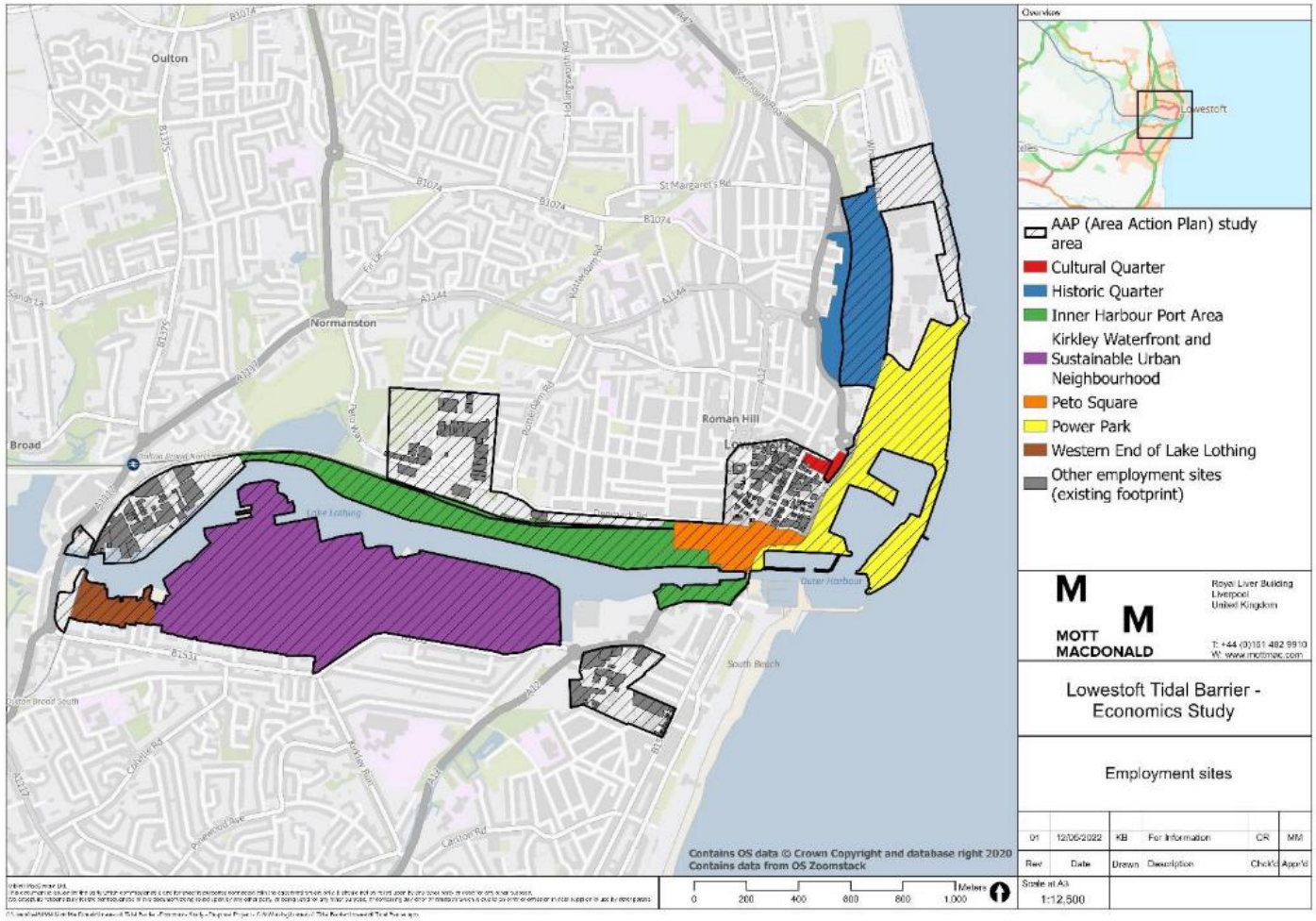
Table 4.4: Future employment site summary

Site Name	Site area (Ha)	Land-use type
Power Park	23.4	B1 (33%) B2 (33%) and B8 (33%)
Station Quarter (Peto square)	5.8	A1 (25%), A3 (25%) , A4 (25%). and D2 (25%)
Kirkley Waterfront and Sustainable Urban Neighbourhood	7.5	B1 (33%), B2 (33%) and B8 (33%)
Western End of Lake Lothing	3.8	B2 (50%) , A1 (25%) and A3 (25%)
Cultural Quarter	0.9	A1 (50%) and A3 (50%)
Historic Quarter	15.0	A1 (50%) and A3 (50%)
Inner Harbour Port Area	21.4	B1 (33%), B2 (33%) and B8 (33%)

Source: Mott MacDonald

[19] To allow for the net case where there are existing sites where future sites are allocated, for the future footprint these have been removed from the analysis to avoid the potential for double counting.

Figure 4.16: Future employment sites included within the future economic footprint analysis



Source: Mott MacDonald

4.7.1 Future Job and GVA

Table 4.5 below shows the gross direct, indirect and induced jobs and GVA[20] potentially in the study area in future following development in-line with Local Plan aspirations. The gross direct jobs are those which are directly supported by businesses in the local study area. Any indirect and induced impacts are generated as a result of supply chain benefits, and consumption expenditure generated from gross direct (and indirect) employment in the area in the same way as they were calculated for the current position above.

Table 4.5: Future jobs and GVA

Study sub-area	Jobs			GVA, £m		
	Direct	**Indirect & Induced**	**Total**	**Direct**	**Indirect & Induced**	**Total**
Total	12,000	3,600	15,600	£641	£192	£833

Source: Mott MacDonald

The study area's future economic footprint in total could support approximately **12,000 gross direct jobs** and **£641 million gross direct GVA pa**[21]. In turn this supports an additional **3,600 indirect and induced jobs** that generates an additional **£192 million GVA pa for the economy**[22]. Therefore, in total the area supports **15,600 jobs** and **£833 million GVA** illustrating the importance of this area to East Suffolk's future economy, and the wider regional and national economy, as a whole.

4.8 Flooding scenarios and future economic footprint

Using the future economic footprint, we are able to assess the economic activity at risk under each of the flooding scenarios. The proportion of gross direct jobs impacted by flooding relative to the current total economic footprint has been applied to the future economic footprint to understand the economic activity at risk from flooding in the future.

4.8.1 Scenario 1 (Do nothing)

Table 4.6 shows the level of economic activity at risk in the event of a 1 in 200-year flood event under scenario 1 (Do nothing).

[20] The GVA reference throughout this section is the annual amount of GVA produced cumulatively by the economic activity in the study area. Clearly, this is not the financial impact of a flood which is a relatively short-lived event, although the GVA is at risk if companies are not able to recover and reinstate their productive activity.

[21] The direct jobs and GVA are derived from economic activity undertaken within the study area boundary

[22] The indirect and induced jobs and GVA could be located anywhere. They could be in the study area, other parts of East Anglia, the UK or even overseas depending on the supply chain links though the majority will probably be within East Anglia. Indirect and induced effects are inextricably linked to direct activity and would be affected if economic activity in the study area was curtailed or extinguished due to flooding and flood events.

Table 4.6: Economic activity at risk under scenario 1 (Do nothing) 1 in 200-year flood extent

	Future economic footprint	Economic activity at risk in a 1 in 200-year flood event	% of current economic footprint at risk in 1 in 200 year-flood
Gross direct jobs	12,000	7,400	62%
Indirect & Induced jobs	3,600	2,200	
Total jobs	15600	9,600	
Gross direct GVA (£m)	£641	£395	62%
Indirect & Induced (£m)	£192	£117	
Total GVA (£m)	£833	£513	

Source: Mott MacDonald

- Scenario 1 (Do nothing):
  - In the event of a 1 in 200-year flood approximately 7,400 gross direct jobs would be affected by flooding of the study area which would have a knock-on effect on an additional 2,200 indirect and induced jobs.
  - In total a 1 in 200-year flood would affect approximately 9,600 jobs. This would affect £395 million gross direct GVA linked to economic activity in the study area and a further £117 million GVA from indirect and induced impacts. Therefore, in total a 1 in 200-year flood would negatively affect £513 million GVA for the wider economy.

4.8.2 Scenario 2 (Do something with Preferred Tidal defence barrier)

Table 4.7 shows the level of economic activity at risk in the event of a 1 in 200-year flood event under scenario 2 (Do something with Preferred Tidal defence barrier).

Table 4.7: Economic activity at risk under scenario 2 (Do something with Preferred Tidal defence barrier) 1 in 200-year flood extent

	Future economic footprint	Economic activity at risk in a 1 in 200-year flood event	% of current economic footprint at risk in 1 in 200 year-flood
Gross direct jobs	12,000	2,600	22%
Indirect & Induced jobs	3,600	800	
Total jobs	15,600	3,400	
Gross direct GVA (£m)	£641	£139	22%
Indirect & Induced (£m)	£192	£43	
Total GVA (£m)	£833	£182	

Source: Mott MacDonald

It is evident that in Scenario 2 a much lower proportion of economic activity will be at risk in future than for Scenario 1 (do nothing) and the area will be largely protected. However it should be noted that still a proportion of economic activity would still be at risk with the improved protection. A discussion of the results is detailed below.

- Scenario 2 (Preferred Tidal Gate and Wall Scheme (static) impact
  - In the event of a 1 in 200-year approximately 2,600 gross direct jobs would be affected by flooding of the study area which would have a knock-on effect on 800 indirect and induced jobs.
  - In total a 1 in 200-year flood would affect approximately 3,400 jobs. This would affect £139 million gross direct GVA linked to economic activity in the study area and a further

£43 million GVA from indirect and induced impacts. Therefore, in total a 1 in 200-year flood would affect £182 million GVA for the wider economy.

These results further illustrate the importance that must be stressed in providing improved flood defences for the area of Lowestoft, based on its importance to not only the local economy but also to the wider economy as a whole. It also demonstrates that even with the preferred option of flood defence the area is still vulnerable as a proportion of the future economic footprint would still be at risk.

4.9 Summary

4.9.1 Current economic footprint

The study area is already a locus of economic activity and planning policy is in place to support further economic growth and development in this area as detailed within the Local Plan. The contribution the area makes to the local economy is substantive, our estimates of the current economic footprint suggest that the study area:

- accommodates 6,400 direct jobs: and,
- these jobs generate £0.3bn (£342m) of GVA per annum.

Clearly the area is at risk of flooding and also has recent experience of flooding and devastation. With climate change predicted to worsen the dynamic situation on the coast around Lowestoft by increasing water depth, wave height and subsequent coastal erosion the dramatic effects of flooding could potential be more devastating. By taking the latest flood extent analysis and using GIS to map this against the economic footprint for the study area that we have established, the preferred flood mitigation scenario (Scenario 2 Do something with Preferred Tidal defence barrier) can be expected to have the following effects on the economic footprint in the area. Note that we have compared the impact of a 1 in 200-year flood event for each of the scenarios. This is based on discussions with the client and based on the premise that flood defences are built to standards to provide protection from 1 in 200-year flood events.

- Scenario 1 – under the Do-nothing situation (based on 1 in 200-year event), up to:
  - 30% of jobs and 30% of GVA within the current economic footprint are at risk of flooding under the flood extents
- Scenario 2 – under Do something with Preferred Tidal defence barrier (based on 1 in 200-year event), up to:
  - 6% of jobs and 6% of GVA within the current economic footprint are at risk of flooding under the flood extents

4.9.2 Future economic footprint

The contribution the area makes to the local economy is substantive and set to increase, our estimates of the future economic footprint suggest that the study area could potentially:

- accommodate 12,000 direct jobs: and,
- these jobs could generate £0.6bn (£641m) of GVA per annum.

On the basis of this analysis, the economic footprint of the area is significant, and a substantive quantum of the future economic footprint can be protected through introducing the measures associated with Scenario 2. Note that we have compared the impact from a 1 in 200-year flood event for each of the scenarios. This is based on discussions with the client and based on the premise that flood defences are built to standards to provide protection from 1 in 200-year flood events. When future economic growth is factored into the analysis the situation is as follows:

- Scenario 1 – Do-nothing situation (based on 1 in 200-year event), up to:

  - 62% of jobs and 62% of GVA within the future economic footprint are at risk from flooding under the 1 in 200 year extern
- Scenario 2 – (Do something with Preferred Tidal defence barrier) (based on 1 in 200 year event), up to:
  - 22% of jobs and 22% of GVA within the future economic footprint are at risk of flooding under the 1 in 200 year extent.

5 Study findings

5.1 Introduction

Lowestoft is an important economic hub for the East of England and this is reflected in local and sub-regional planning and economic development strategy and policy. The study area and adjoining areas are the prime focus of economic activity and this position is set to strengthen as the Local Plan policies in support of development are realised.

5.2 Economic footprint

The current economic footprint of the study area is estimated to be 6,400 jobs and £342m of GVA. When indirect and induced effects are included these increases to 8,300 jobs and £443m GVA, though the indirect and induced effects are not necessarily located in the study area of Lowestoft but depend on it.

Table 5.1: Current economic footprint

	Current economic footprint
Gross direct jobs	6,400
Indirect & Induced jobs	1,900
Total jobs	8,300
Gross direct GVA (£m)	£342
Indirect & Induced (£m)	£101
Total GVA (£m)	£443

Source: Mott MacDonald

5.2.1 Flood risk and mitigation

Table 5.2 shows how the interventions proposed under Scenario 2 have a dramatic effect in reducing the risk of flooding and economic devastation based on the current economic footprint of the area.

Table 5.2: Proportion of current economic footprint at risk under two scenarios (1 in 200 year

Scenarios	**Jobs**	**GVA**
Scenario 1 (Do Nothing)	30%	30%
Scenario 2 – (Do Something – Preferred Tidal defence barrier)	6%	6%

Source: Mott MacDonald

5.3 Future economic footprint

The future economic footprint is based on the current economic footprint with the development proposed in the study area is fully delivered. In essence, this removes some of the existing economic footprint to replace it with future development and flood extents are then broadly modelled against potential future land uses as the precise layout, configuration and height of buildings is not yet known. Given this, it is still possible to make some broad assumptions on the future economic footprint which is set out in Table 5.3.

Table 5.3: Future economic footprint assuming Local Plan fully delivered

	Future economic footprint
Gross direct jobs	12,000
Indirect & Induced jobs	3,600
Total jobs	15,600
Gross direct GVA (£m)	£641
Indirect & Induced (£m)	£192
Total GVA (£m)	£833

Source: Mott MacDonald

5.3.1 Flood risk and mitigation

Table 5.4 shows how the future economic footprint is at risk from future flood extents. Interventions proposed under Scenario 2 have a dramatic effect in reducing the risk of flooding and economic devastation based on the current economic footprint of the area.

Table 5.4: Proportion of future economic footprint at risk of flooding under two scenarios (1 in 200 year event)

Scenarios	Jobs	GVA
Scenario 1 (Do Nothing)	62%	62%
Scenario 2 – (Do Something – Preferred Tidal defence barrier)	22%	22%

Source: Mott MacDonald

5.4 Summary

The economic footprint of the study area is significant currently and will, as a minimum, remain so in future although the expectation is that the area's economic importance will grow considerably. Installing the interventions under Scenario 2 will reduce the risk of flooding in the area and, consequently, lessen the likelihood of significant detrimental economic impact as well as removing potential barriers to growth and investment by current and future businesses in the area.

A. Assumptions

Figure 5.1: TEAM Land-use assumptions

Assumptions	Additional information	Default Data Assumptions	
Site size, ha			0
Plot ratios (where applicable)		Best practice	40%
Number of storeys (where applicable)		N/A	1
GEA to NIA converter		HCA Employment Density Guide 2015	85%
GEA to GIA converter		HCA Employment Density Guide 2015	95%
Occupancy rate (full development)		No 'rule of thumb' suggest sensitivity testing	75%
Employment density assumptions:			
Corporate	NIA m2/FTE	HCA Employment Density Guide 2015	13
Professional Services	NIA m2/FTE	HCA Employment Density Guide 2015	12
Public Sector	NIA m2/FTE	HCA Employment Density Guide 2015	12
Tech	NIA m2/FTE	HCA Employment Density Guide 2015	11
Finance & Insurance	NIA m2/FTE	HCA Employment Density Guide 2015	10
Call Centres	NIA m2/FTE	HCA Employment Density Guide 2015	8
R&D Space	NIA m2/FTE	HCA Employment Density Guide 2015	50
Light Industrial	NIA m2/FTE	HCA Employment Density Guide 2015	47
Industrial & Manufacturing	GIA m2/FTE	HCA Employment Density Guide 2015	36
National Distribution Centre	GEA m2/FTE	HCA Employment Density Guide 2015	95
Regional Distribution Centre	GEA m2/FTE	HCA Employment Density Guide 2015	77
Final Mile' Distribution Centre	GEA m2/FTE	HCA Employment Density Guide 2015	70
Incubator	NIA m2/FTE	HCA Employment Density Guide 2015	45
Maker Spaces	NIA m2/FTE	HCA Employment Density Guide 2015	28
Studio	NIA m2/FTE	HCA Employment Density Guide 2015	30
Co-Working	NIA m2/FTE	HCA Employment Density Guide 2015	13
Managed Workspace	NIA m2/FTE	HCA Employment Density Guide 2015	30
Wholesale	GEA m2/FTE	HCA Employment Density Guide 2015	575
Wholesale Dark Site	GEA m2/FTE	HCA Employment Density Guide 2015	920
Co-location Facility	GEA m2/FTE	HCA Employment Density Guide 2015	360
High Street	NIA m2/FTE	HCA Employment Density Guide 2015	18
Foodstore	NIA m2/FTE	HCA Employment Density Guide 2015	18
Retail Warehouse	NIA m2/FTE	HCA Employment Density Guide 2015	90
Finance & Professional Services	NIA m2/FTE	HCA Employment Density Guide 2015	16
Restaurants & Cafes	NIA m2/FTE	HCA Employment Density Guide 2015	18
Limited Service/Budget	FTE per bed	HCA Employment Density Guide 2015	0
Mid Scale	FTE per bed	HCA Employment Density Guide 2015	0
Upscale	FTE per bed	HCA Employment Density Guide 2015	1
Luxury	FTE per bed	HCA Employment Density Guide 2015	1
Budget Fitness Centre	GIA m2/FTE	HCA Employment Density Guide 2015	100
Mid Market Fitness Centre	GIA m2/FTE	HCA Employment Density Guide 2015	65
Family Fitness Centre	GIA m2/FTE	HCA Employment Density Guide 2015	65
Cinema	GIA m2/FTE	HCA Employment Density Guide 2015	200
Visitor & Cultural Attractions	GIA m2/FTE	HCA Employment Density Guide 2015	165
Amusement & Entertainment Centres	GIA m2/FTE	HCA Employment Density Guide 2015	70

Source: Mott MacDonald

Figure 5.2: TEAM Economic Impact Assumptions

Assumptions	Default Assumptions	
Composite multiplier	Additionality Guide 2016	1.29
GVA per worker assumptions, by use, £		
Corporate	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Professional Services	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Public Sector	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Tech	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Finance & Insurance	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Call Centres	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
R&D Space	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Light Industrial	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Industrial & Manufacturing	ONS (Regional workplace GVA / Workforce Jobs) matched to Manufacturing	£53,392
National Distribution Centre	ONS (Regional workplace GVA / Workforce Jobs) matched to Manufacturing	£53,392
Regional Distribution Centre	ONS (Regional workplace GVA / Workforce Jobs) matched to Manufacturing	£53,392
Final Mile' Distribution Centre	ONS (Regional workplace GVA / Workforce Jobs) matched to Manufacturing	£53,392
Incubator	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Maker Spaces	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Studio	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Co-Working	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Managed Workspace	ONS (Regional workplace GVA / Workforce Jobs) matched to Professional services excluding real estates	£53,392
Wholesale	ONS (Regional workplace GVA / Workforce Jobs) matched to Manufacturing	£53,392
Wholesale Dark Site	ONS (Regional workplace GVA / Workforce Jobs) matched to Manufacturing	£53,392
Co-location Facility	ONS (Regional workplace GVA / Workforce Jobs) matched to Manufacturing	£53,392
High Street	ONS (Regional workplace GVA / Workforce Jobs) matched to wholesale and retail	£53,392
Foodstore	ONS (Regional workplace GVA / Workforce Jobs) matched to wholesale and retail	£53,392
Retail Warehouse	ONS (Regional workplace GVA / Workforce Jobs) matched to wholesale and retail	£53,392
Finance & Professional Services	ONS (Regional workplace GVA / Workforce Jobs) matched to wholesale and retail	£53,392
Restaurants & Cafes	ONS (Regional workplace GVA / Workforce Jobs) matched to wholesale and retail	£53,392
Limited Service/Budget	ONS (Regional workplace GVA / Workforce Jobs) matched to wholesale and retail	£53,392
Mid Scale	ONS (Regional workplace GVA / Workforce Jobs) matched to wholesale and retail	£53,392
Upscale	ONS (Regional workplace GVA / Workforce Jobs) matched to wholesale and retail	£53,392
Luxury	ONS (Regional workplace GVA / Workforce Jobs) matched to wholesale and retail	£53,392
Budget Fitness Centre	ONS (Regional workplace GVA / Workforce Jobs) matched to other services	£53,392
Mid Market Fitness Centre	ONS (Regional workplace GVA / Workforce Jobs) matched to other services	£53,392
Family Fitness Centre	ONS (Regional workplace GVA / Workforce Jobs) matched to other services	£53,392
Cinema	ONS (Regional workplace GVA / Workforce Jobs) matched to other services	£53,392
Visitor & Cultural Attractions	ONS (Regional workplace GVA / Workforce Jobs) matched to other services	£53,392
Amusement & Entertainment Centres	ONS (Regional workplace GVA / Workforce Jobs) matched to other services	£53,392
Total	ONS (Regional workplace GVA / Workforce Jobs) matched to total	£53,392

Source: Mott MacDonald

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