



Riverside, 4 Canning Road, Lowestoft, Suffolk,
NR33 0EQ

Full Council

Members: All Councillors

Members are invited to a **Meeting of the Full Council**
to be held in the Conference Room, Riverside,
on **Wednesday, 15 March 2023** at **6.30pm**

This meeting will be broadcast to the public via the East Suffolk YouTube
Channel at <https://youtu.be/ZYHWyY8xiDc>.

The Chairman of the Council has agreed to accept an urgent item of business for this meeting, listed at item 14. The urgent matter relates to a report on the outcome of an investigation of a complaint, which was considered by the Audit and Governance Committee at its meeting on 13 March 2023.

The special circumstances for considering this item as a matter of urgency are that the Audit and Governance Committee, at its meeting on 13 March 2023, resolved that Full Council would receive a report at its meeting on 15 March 2023.

An Agenda is set out below.

Part One – Open to the Public

1 Apologies for Absence

To receive apologies for absence, if any.

2 Declarations of Interest

Members and Officers are invited to make any declarations of interests, and the nature of that interest, that they may have in relation to items on the Agenda and are also reminded to make any declarations at any stage during the Meeting if it becomes apparent that this may be required when a particular item or issue is considered.

3 Announcements

To receive any announcements from the Chairman, the Leader of the Council, members of the Cabinet, or the Chief Executive, in accordance with Council Procedure Rule 5.1(e).

4 Questions from the Public

No questions have been submitted by the electorate as provided by Council Procedure Rule 8.

5 Questions from Members

The following question(s) from Members has/have been submitted in pursuance of Council Procedure Rule 9:

a) Question submitted by Councillor Ed Thompson to Councillor Letitia Smith, Cabinet Member with responsibility for Communities, Leisure and Tourism

We have been made aware that between 1/4/2022 and 30/09/22 Citizens Advice East Suffolk (CAES) dealt with 237 Ipswich clients using core funding, but that Ipswich CAB looked after 841 East Suffolk Residents over an annual period (16.8% of their overall service). Considering that even tripling the six-month figure does not even the playing field, the strain put upon the Ipswich CAB is increased by East Suffolk Residents. Taking these figures into consideration, would the Cabinet Member for Communities review the possibility of providing funding to the Ipswich CAB for the services they provide to East Suffolk residents?

b) Question submitted by Councillor Caroline Topping for Councillor James Mallinder, Cabinet Member with responsibility for The Environment

On November 24th 2021, I submitted a motion to Full Council about reducing unnecessary car journeys, which was seconded by Councillor Mallinder; this was approved. Would it be possible to get an update as to the Council's progress on the outcome of this motion, particularly in relation to car-sharing and using public transport for work purposes?

c) Question submitted by Councillor Janet Craig for Councillor Norman Brooks, Cabinet Member with responsibility for Transport

Great Yarmouth Borough Council has already provided at least 16 Electrical Vehicle charging points in its Town Centre car parks, as an incentive for tourists to stay longer locally.

How many EV charge points will be available in East Suffolk Council's car parks for visitors to our resort towns by this summer season?

d) Question submitted by Councillor Tess Gandy to Councillor Steve Gallant, Leader of the Council

Are you able to provide me with the number of times external Counsel have been instructed by ESC in relation to housing and other issues, and at what cost, in the last 12 months?

e) Question submitted by Councillor Peter Byatt to Councillor Gallant, Leader of the Council

A Labour Motion to Full Council in January 2022 proposed that our suppliers declare responsible tax conduct as part of our new high-standard procurement process, but this was referred to Audit and Governance for in-depth consideration.

The Chair acknowledged that this was an urgent matter, and in March added it to the Work Programme for discussion in September 2022. However, this did not happen and the topic remains outstanding.

Will this be an Agenda item in March 2023, 14 months after the motion, and when will this Council fully embrace Social Value, including consideration of the ethics of our suppliers, and where they pay their tax?

6 Petitions

No petitions have been received as provided by Council Procedure Rule 10.

7 Notices of Motion

The following Motion has been submitted in pursuance of Council Procedure Rule 11:

a) Motion submitted by Councillor David Beavan, to be seconded by Councillor Tom Daly

Proportional Representation for the Electorate of East Suffolk

This Council Notes:

- That recent, peer-reviewed studies revealed that adopting proportional representation allows policy to respond strongly to changes in public opinion, whereas the current UK system can cause ‘policy [to] move in the opposite direction to public opinion for a considerable length of time’[1].
- As of January 18th 2023, 21 councils have passed motions for proportional representation at different levels including City, District and Town[2].
- That ‘the effectiveness of the party system... depends on the relationship between the Government and the Opposition parties [such as by] the creation of policy and legislation through constructive criticism’[3].
- There is innately a significant disparity in representation – e.g., the Conservative Party had 71% of the councillors with 38% of the vote[4].

This Council resolves to:

- Based on academic and political precedent, call a meeting between the party leaders to discuss how ESC can promote proportional representation and ensure that all voters across the district are fairly heard.
- To advise the council incumbent after May 4th 2023 to elect a member of the opposition as chair of the scrutiny committee, and that the committee itself should reflect the vote shares of the election.

[1] McGann, Anthony J., et al. “Dynamics of Public Opinion and Policy Response Under Proportional and Plurality Elections.” *Economics and Politics*, vol. 35, no. 1, 2023, pp. 333–55, <https://doi.org/10.1111/ecpo.12217>.

2 Councils for PR Update – Councils for PR

3 The party system - UK Parliament

4 East Suffolk Council district elections - Thursday 2 May 2019 » East Suffolk Council

8	Climate Action Framework To receive a presentation from Councillor Mallinder, Cabinet Member with responsibility for the Environment and Paul Mackie, Lead Officer for Environment and Climate Change.	
9	Lowestoft Flood Risk Management Project ES/1504 Report of the Cabinet Member with responsibility for Planning and Coastal Management.	1 - 570
10	Review of Code of Corporate Governance ES/1460 Report of the Leader of the Council	571 - 591
11	Scrutiny Committee Annual Report 2022/23 ES/1503 Report of the Chairman of the Scrutiny Committee.	592 - 614
12	Cabinet Members Report and Outside Bodies Representatives Reports to Council ES/1508 Report of the Leader of the Council.	615 - 636
13	Exempt/Confidential Items It is recommended that under Section 100A(4) of the Local Government Act 1972 (as amended) the public be excluded from the meeting for the following item of business on the grounds that it involves the likely disclosure of exempt information as defined in Paragraphs 1 and 2 of Part 1 of Schedule 12A of the Act.	

Part Two – Exempt/Confidential

14	Urgent Item of Business - report on the outcome of an investigation of a complaint <ul style="list-style-type: none"> Information relating to any individual. Information that is likely to reveal the identity of an individual. 	
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Close



Chris Bally, Chief Executive

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www.local.gov.uk/Community-Leadership



FULL COUNCIL

Wednesday, 15 March 2023

Subject	Lowestoft Flood Risk Management Project
Report by	Councillor David Ritchie Cabinet Member with responsibility for Planning and Coastal Management
Supporting Officer/s	Karen Thomas Head of Coastal Partnership East Karen.thomas@eastsuffolk.gov.uk Mobile: 07920 411955 Philip Ridley Head of Planning and Coastal Management philip.ridley@eastsuffolk.gov.uk Nick Khan Strategic Director nick.khan@eastsuffolk.gov.uk

Is the report Open or Exempt?	OPEN
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Category of Exempt Information and reason why it is NOT in the public interest to disclose the exempt information.	Not applicable
Wards Affected:	Harbour & Normanston Gunton & St Margaret's Kirkley & Pakefield Carlton Colville Oulton Broad

Purpose and high-level overview

Purpose of Report:

The purpose of this report is to:

- Set out that it is expedient for the Council to promote and submit an application to the Secretary of State for the Environment, Food and Rural Affairs (Secretary of State) for an Order under the ¹Transport and Works Act 1992 (TWAO) to authorise the proposed construction, operation and maintenance of a new tidal barrier with a moveable gate across the channel entrance to Lake Lothing on the seaward side of the Bascule Bridge in Lowestoft, East Suffolk. The Order (if made) would, amongst other things, confer powers on the Council to compulsorily acquire and temporarily use land and to carry out other works and include provisions necessary for the purposes of, or for purposes ancillary to, the construction, operation and maintenance of the proposed tidal barrier;
- Approve (Subject to the above), that the Head of Planning and Coastal Management in consultation with a Cabinet Member with responsibility for the coast, take all such steps as may be necessary or expedient to carry the above recommendations into effect, including all those steps required for the Council to apply for and thereafter to promote its application for the Order; and the corporate seal of the Council being affixed to any documents required to be sealed in connection with the application for and subsequent promotion of the Order.

Background:

The Lowestoft Flood Risk Management Project (LFRMP) is developing a way forward in managing flood risk to protect residents and businesses from disruption, threat to lives and livelihoods and to support the economic growth and regeneration of Lowestoft and avoid unnecessary and potentially additional flood risk management recovery costs.

The tidal element of the project comprises of tidal flood walls demountable defences and a 40m tidal barrier in the form of mitre gates seaward of the Bascule Bridge.

The tidal walls and demountable defence phase will be complete in Autumn 2023. The tidal barrier is the final phase of the project and will enable the navigation channel from the sea to Lake Lothing to be closed in the event of a tidal surge. The tidal barrier will be the only one of its kind to be constructed in a working channel with no possible diversion. Given the risk to livelihoods, economic growth and regeneration of Lowestoft moving positively forward, the Town cannot remain undefended from the flooding.

The town has become increasingly vulnerable to flooding from all sources for decades. Heavy rainfall events led to significant fluvial and pluvial flooding in 2015 and flooded 33 homes in the Aldwyck Way and Velda Close area of the town. Tidal flooding in 2013 tidal surge when 158 residential and 233 commercial properties flooded in Lowestoft and Oulton Broad. Key transportation links such as the railway and A12 also flooded impacting on flood response, recovery and clean up.

Currently 221 residential and 373 commercial properties are at risk of tidal flooding in addition to a number of locations earmarked for future development within the Lowestoft Local Plan. Following the installation of the Barrier in combination with previous phases of work the scheme will ensure that homes and businesses are better protected to a high standard.

¹ c.42

The Lowestoft Economic Footprint and Impact Report was revised in 2022 (Appendix G) to consider the wider impacts of flooding on housing and the local Lowestoft economy along with the economic growth benefits that tidal flood protection would provide.

The study found that the future economic footprint of the area could support 12,000 direct jobs which could generate £641m of annual GVA, increasing to 15,600 Jobs and £833m GVA per year when indirect and induced benefits are considered.

Members will recall that at the November 23 2022 Meeting of Full Council it was Resolved that

- 1) That the submission of the Outline Business Case to the Environment Agency's Large Project Review Group be supported by Full Council.
- 2) That continuing the design and construction of the 40m tidal barrier to the east of the Bascule Bridge - subject to partnership funding and ²Transport and Works Act Order approval (Option 1) be endorsed.
- 3) That the preparation of a Transport Works Act Order be supported and Full Council noted that further recommendations would be brought to Full Council throughout the Order process.

This Report is to seek a resolution to proceed with submitting the Order but Members should acknowledge that the team have progressed items 1) and 2) above. In respect of Item 4 the Funding of the Barrier is progressing. Through the Project Executive Chaired by Cllr Ritchie significant work is being undertaken by the team working with our partners and beneficiaries. Subject to gaining the Order and securing the funding it is anticipated that to meet optimum project timescales the works to deliver the barrier should be commenced late 2024 when set alongside known other activity in the port.

Members should note that the delivery of the barrier will in addition to protecting people, homes and businesses will also provide a catalyst for further investment in the area by providing flooding protection to a 1-200 year level. Officers are also engaging with government officials across a number of departments to promote the opportunity the barrier presents to the town to achieve national policies in respect of Net Zero and Levelling Up as well as delivering on many aspects of the Strategic Plan

The tidal walls element of the project will be complete in Autumn 2023. The tidal barrier is the final phase of the project and will enable the navigation channel from the sea to Lake Lothing to be closed in the event of a tidal surge. The tidal barrier will be the only one of its kind to be constructed in a working channel with no possible diversion. Given the risk to livelihoods, economic growth and regeneration of Lowestoft moving positively forward, the town cannot remain undefended from the flooding.

Lowestoft is now central in the wider Government agenda for Energy Resilience- notably offshore wind- a key component of national and international ambitions to reduce carbon and impacts of climate change.

² 1992 c.42

Outline Business Case:

In 2018, an Outline Business Case (OBC) (Appendix D) for the construction of the tidal walls was presented to the Environment Agency (EA) for technical assurance, which was given. A further OBC has now been provided to the Environment Agency for the construction of the tidal barrier. This iteration of the OBC has highlighted the need for a change from the initial 28m tidal barrier to the necessary 40m tidal barrier this reflects the requirement for a safe navigation and longer-term impact from vessels on the operation of the port.

The business case OBC was reviewed and updated in 2022 which includes a significant change in overall project cost, the project cost is being re-estimated based on the updated design; it will be based on market costs and will be independently reviewed by cost managers to give us more certainty on reported figures. Following EA technical review, and the review of the project cost forecast the OBC will be amended and reported to Full Council in autumn 2023 for approval to enable the Council's Capital Programme to be revised, during ongoing conversations with East Suffolk Council's Finance Team

Transport Works Act Order:

In addition to financial and technical approval, the tidal barrier requires a ³Transport Works Act Order (TWAo) to enable the Council to have the appropriate powers to access land to build and then to maintain the tidal barrier. It also grants the Council the necessary powers to alter navigation permanently.

- The process of developing the application for the Order has begun but requires Full Council's approval to continue the application process. *Having taken legal advice, the Council needs to give their approval for two key points in the TWAo process-*
- Ahead of the Order application (under section 20 (2) of the Transport and Works Act 1992, which requires the promoting body (East Suffolk Council) to comply with any conditions which apply to its corresponding power to promote a Bill in Parliament. This date is planned for 15th March 2023.
- Once the Order application has been submitted to the Defra TWAo unit, section 20 of the Transport and Works at 1992, states a further resolution confirmed by a like majority at a further meeting which must take place 'as soon as may be after the expiry of 14 days after the TWAo application is made' and if the resolution is not confirmed, the local authority must take all necessary steps to withdraw the application. The date for this is planned for 26th July 2023.

The target date for submission is 16th May 2023. This report and its appendices highlights the risks, the environmental impacts and the consultation undertaken with stakeholders and the public ahead of TWAo application submission.

The tidal barrier requires a Transport Works Act Order. This is granted by the Secretary of State and is needed when construction can change or affect navigation. A TWAo can take up

³ 1992 c.42

to two years to be approved hence we are targeting an early date for submission to ensure we can complete the project in a timely fashion.

Legislation relating to a Local Authority:

Section 20(1) of the Transport and Works Act 1992 confers powers on bodies who can promote or oppose Bills in Parliament to apply for, or object to, an Order under that Act. In this respect, section 20(2) requires the promoting body to comply with any conditions which apply to its corresponding power to promote a Bill in Parliament.

Local authorities enjoy the power to promote Bills in Parliament under section 239 of the ⁴Local Government Act 1972 and so, in the case of a promotion by East Suffolk Council, this is the relevant provision for the purposes of section 20 of the ⁵Transport and Works Act 1992. That section specifies certain procedural requirements that must be followed before such a promotion is possible. These require that a local authority wishing to promote a Bill (in this case an Order under the Transport and Works Act 1992) must pass two resolutions as follows:

- 1. A resolution passed by a majority of the whole number of the members of the Council to promote the TWAO application; and*
- 2. A further resolution confirmed by a like majority at a further meeting which must take place 'as soon as may be after the expiry of 14 days after the TWAO application is made' and if the resolution is not confirmed, the local authority must take all necessary steps to withdraw the application.*

30 days prior notice of each of the above meetings must be provided in relevant local newspapers. [The requisite notice for the 15 March Council meeting to enable Council members to consider the first resolution required was published on 10 February 2023 in the Lowestoft Journal, the Beccles and Bungay Journal, the East Anglian Daily Times and the Eastern Daily Press.]

Should Council members resolve to make the TWAO application, it will therefore still be necessary for a further resolution of the Full Council, confirming the decision to submit the TWAO application, to take place in due course.

Key points to note:

If the council agree that it is appropriate to continue to prepare and submit the TWAO application in May 2023:

- There will be planned costs incurred from engaging with legal counsel for representing East Suffolk Council in supporting the application.
- There will be planned costs incurred from utilising specialist consultants on the TWAO application.
- There will be limited costs if we proceed, from engagement with stakeholders (residents, landowners, businesses etc).
- If full council does agree to continue with the TWAO process, even upon approval, there is no obligation to build the tidal barrier if we cannot fund it, however there is an increased likelihood that funding will be secured.
- An additional full council meeting will be needed post submission, in line with the TWAO process.

⁴ 1972 c.70

⁵ 1992 c.42

- The application can still be withdrawn at any point in the TWAO process (decision lead by council).

If the council decides to stop the TWAO process:

- Costs associated with consultants working on preparing the application and appendices will be incurred
- Aborted costs for Legal Counsel and legal team
- There will be a delay to the project programme.
- The level of costs for stopping the process will be c£400,000

If the council decides to not proceed:

- To change the navigable channel requires formal consent. Without a TWAO it would not be possible to construct a tidal barrier, this would mean that Lowestoft would still be significantly at risk of tidal flooding.

Options:

1. Preferred Option.

- 1.1 ⁶**Transport at Works Act Order (TWAo)**: Fundamentally, the powers sought by the Council in the TWAO are essential to the successful delivery of the LFRMP, which has broad levels of support amongst public and local stakeholders. As such, the TWAO application is the crucial first step in obtaining these powers.
- 1.2 Applications for Orders under the Transport and Works Act 1992 are, as a result of section 20 of that Act, subject to section 239 of the ⁷Local Government Act 1972. This requires that before a local authority submits such an application, an approving resolution of that authority is passed.
- 1.3 As such, the Council is required to pass an approving resolution prior to the Application being submitted. Given the local elections in May 2023 and associated pre-election period, this meeting of the Council is the last opportunity for such a resolution to be considered if the target date for submission on or around 16th May 2023 is to be met to meet wider project timescales.
- 1.4 Under section 239 of the Local Government Act 1972, a further confirmatory resolution is required to be passed by the Council following the submission of the Application. There are no set timescales for this, but should the Application be submitted in May 2023, it is expected that such a resolution will be presented for consideration by the Council as soon as possible thereafter
- 1.5 There are no statutory timescales applicable to the regime under the Transport and Works Act 1992, but it is likely that a decision on the Application will be made by the Secretary of State etc in 2024.

Other options considered:

Harbour Revision Order (HRO), these are used to change the existing legislation governing the management of a harbour or harbours controlled by the same statutory harbour authority. The possibility of HRO application was explored with Associated British Ports (ABP) at the beginning of this project. As a statutory consultee ABP did not consider this to be an appropriate route.

⁶ 1992 c.42

⁷ 1972 c.70

It is important to note that section 3(2) of the Transport and Works Act 1992 provides that a Transport and Works Act Order (**TWAO**) cannot be made if the relevant Secretary of State is of the opinion that the primary objective of the order could be achieved by means of an order under the Harbours Act 1964.

The Council has considered whether it might possible to authorise the proposed new tidal barrier by means of an order under the Harbours Act 1964. Two types of harbour orders are possible under that Act; harbour revision orders (**HROs**) under section 14 of the 1964 Act or harbour empowerment orders (**HEOs**) under section 16 of that Act. It is not considered that either form of harbour order could be employed for the reasons set out below. In this context, it is also worth noting that other recent tidal barriers have successfully been promoted by means of Transport and Works Act Order.

An HRO may be sought in relation to a harbour which is being managed by a harbour authority by (i) that harbour authority or (ii) by another person appearing to the relevant Minister to have an interest. Whilst it might be possible to demonstrate that the Council falls within the latter of these two categories, such an Order can only be made where it is both:

- (i) desirable in the interests of securing the improvement, maintenance or management of the harbour in an efficient and economical manner or for facilitating the efficient and economic transport of goods or passengers by sea or in the interests of the recreational use of sea-going ships; and
- (ii) sought in order to achieve one or all of the objectives set out in Schedule 2 to the 1964 Act.

The primary purpose of the proposed tidal barrier is to improve the level of protection from tidal flooding in the town of Lowestoft and this does not reflect any of the objectives set out in Schedule 2 to the 1964 Act. As such, it is considered that an HRO could not be promoted to authorise a new tidal barrier.

An HEO may be made for the following purposes:

- (i) the improvement, maintenance or management of a harbour navigated by sea-going ships or of a port, haven, estuary, tidal or other river or inland waterway so navigated;
- (ii) the construction of an artificial harbour navigable by sea-going ships or an inland waterway so navigable

It should only be made by the Secretary of State if he is satisfied that it is desirable to make the HEO in the interests of 'facilitating the efficient and economic transport of goods or passengers by sea or in the interests of the recreational use of sea-going ships'.

As the primary purpose of the proposed tidal barrier is to improve the level of protection from tidal flooding in the town of Lowestoft, not the purposes stated above, an HEO could also not be promoted to authorise it.

Development Consent Order (DCO) application is used in the undertaking of Nationally Significant Infrastructure Projects (NSIP). The Project does not constitute a NSIP within the

meaning of the ⁸Planning Act 2008. Accordingly, it would not be possible to secure consent by means of a development consent order (DCO) unless an application was made to the Secretary of State seeking a direction under section 35 of that Act. Such a direction can enable a project to proceed by means of a development consent order notwithstanding that it does not fall within the definition of an NSIP. Whilst it is open to the Council to seek such a direction, the availability of the Transport and Works Act process to consent the scheme means that it is not considered desirable to do so.

Do not proceed. To change the navigable channel requires formal consent. Without a TWAO it would not be possible to construct a tidal barrier.

What is a ⁹Transport Works Act Order?

The TWAO is a statutory instrument “made” by the relevant Secretary of State, in this case the Secretary for the Environment, Food and Rural Affairs.

The TWAO grants “statutory authority” to construct, operate and maintain works, including powers to acquire land and interests in land.

TWAOs are routinely employed for rail and urban transit schemes but are also used in relation to a number of recent flood defence schemes. A TWAO applies when you are permanently altering navigation. For further information see Appendix A.

What powers are included in the TWAO?

- Construction of works
- Compulsory purchase of land – acquisition of rights permanent or temporary
- Temporary use of land
- Interference with highways
- Interference with navigation – protection of those who use the water
- Powers of operation
- Protective provisions
- Repeals and disapplication’s

How does a TWAO compare to the planning process?

- Scope of TWAO is far wider (e.g. CPO and operational powers)
- All applications are determined by the Secretary of State
- Financial circumstances of applicant or likelihood of funding are a key consideration
- Usually 5 years to implement (rather than 3 years)
- Applicant proposes ‘conditions’ to be imposed
- Scope of consent is usually more flexible

⁸ C. 29

⁹ 1992 c.42

Recommendations:

That Full Council:

1. Promote an application to the Secretary of State for the Environment, Food and Rural Affairs for an Order under the ¹⁰Transport and Works Act 1992 to authorise the proposed construction, operation and maintenance of a new tidal barrier with a moveable gate across the channel entrance to Lake Lothing on the seaward side of the Bascule Bridge in Lowestoft, East Suffolk. The Order (if made) would, amongst other things, confer powers on the Council to compulsorily acquire and temporarily use land and to carry out other works and include provisions necessary for the purposes of, or for purposes ancillary to, the construction, operation and maintenance of the proposed tidal barrier;
2. Approve that subject to the above, that the Head of Planning and Coastal Management, in consultation with a Cabinet Member who has responsibility of the coast, take all such steps as may be necessary or expedient to carry the above recommendations into effect, including the legal process required for the Council to apply for and thereafter to promote its application for the Order, please see appendix E for the TWAO legal process/programme required; and
3. Approve that the corporate seal of the Council is affixed to any documents required to be sealed in connection with the application for and subsequent promotion of the Order.
4. Approve that the Head of Planning and Coastal Management, in consultation with a Cabinet Member who has responsibility of the coast Executive Board, comply and deal with any public local inquiry processes and procedures arising or resulting from the submission of the Application.

Corporate Impact Assessment

Governance:

The Lowestoft Flood Risk Management Project has a comprehensive governance structure in place, which consists of Project Board, Project Executive Group, Project Delivery Group, Strategic Steering Group and Key Stakeholder Group.

ESC policies and strategies that directly apply to the proposal:

East Suffolk Council Constitution

East Suffolk Strategic Plan

East Suffolk Economic Growth Plan

East Suffolk Council – Waveney Local Plan 2019

Environmental:

A full Environmental Impact Assessment will be complete at the time of the TWAO submission to assess potential impacts and mitigation measures for the tidal barrier design.

¹⁰ 1992 c.42

Equalities and Diversity:

An equality impact assessment has been undertaken for the project as a whole. The tidal barrier element specifically has no impact. In the case of relative deprivation and socio-economic disadvantage the recommended option will have a positive impact since its focus is to enable inclusive growth and enhance community development.

Financial costs relating to the TWAO:

If the council agree that it is appropriate to continue to prepare and submit the TWAO application in May 2023:

- There will be planned costs incurred from engaging with legal counsel for representing East Suffolk Council in supporting the application.
- There will be planned costs incurred from utilising specialist consultants for the application.
- There will be limited costs if we proceed, from engagement with stakeholders (residents, landowners, businesses etc).
- If full council does agree to continue with the TWAO process, even upon approval, there is no obligation to build the tidal barrier if we cannot fund it, however there is an increased likelihood that funding will be secured.

The application can still be withdrawn at any point in the TWAO process (decision lead by council)

If the council decides to stop the TWAO process:

- Costs associated with contractors working on preparing the application and appendices
- Aborted costs for Legal Counsel and legal team

Detailed costs for the project will be established in by May 2023 following a design and cost review. The costs for the project will be covered by local and national sources.

Human Resources:

Additional funding expertise required to advocate for the project at national discussions is being managed within Coastal Partnership East (CPE). Additional Communications support may also be needed.

ICT:

No impacts,

Legal:

Ongoing legal agreement discussions with key land owners

¹¹Transport Works Act Order submission will involve significant legal support including counsel if the project is to go to Public Inquiry.

Risk:

Strategic risk register is included in Appendix B.

For risk relating to the TWAO application please see section 3 below.

¹¹ 1992 c.42

External Consultees:	ABP, all affected landowners, tenants and businesses, statutory stakeholders including Environment Agency and publics.
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Strategic Plan Priorities

Select the priorities of the Strategic Plan which are supported by this proposal: (Select only one primary and as many secondary as appropriate)		Primary priority	Secondary priorities
T01	Growing our Economy		
P01	Build the right environment for East Suffolk	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P02	Attract and stimulate inward investment	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P03	Maximise and grow the unique selling points of East Suffolk	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P04	Business partnerships	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P05	Support and deliver infrastructure	<input checked="" type="checkbox"/>	<input type="checkbox"/>
T02	Enabling our Communities		
P06	Community Partnerships	<input type="checkbox"/>	<input type="checkbox"/>
P07	Taking positive action on what matters most	<input type="checkbox"/>	<input type="checkbox"/>
P08	Maximising health, well-being, and safety in our District	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P09	Community Pride	<input type="checkbox"/>	<input type="checkbox"/>
T03	Maintaining Financial Sustainability		
P10	Organisational design and streamlining services	<input type="checkbox"/>	<input type="checkbox"/>
P11	Making best use of and investing in our assets	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P12	Being commercially astute	<input type="checkbox"/>	<input type="checkbox"/>
P13	Optimising our financial investments and grant opportunities	<input type="checkbox"/>	<input checked="" type="checkbox"/>
P14	Review service delivery with partners	<input type="checkbox"/>	<input type="checkbox"/>
T04	Delivering Digital Transformation		
P15	Digital by default	<input type="checkbox"/>	<input type="checkbox"/>
P16	Lean and efficient streamlined services	<input type="checkbox"/>	<input type="checkbox"/>
P17	Effective use of data	<input type="checkbox"/>	<input type="checkbox"/>
P18	Skills and training	<input type="checkbox"/>	<input type="checkbox"/>
P19	District-wide digital infrastructure	<input type="checkbox"/>	<input checked="" type="checkbox"/>
T05	Caring for our Environment		
P20	Lead by example	<input type="checkbox"/>	<input type="checkbox"/>
P21	Minimise waste, reuse materials, increase recycling	<input type="checkbox"/>	<input type="checkbox"/>
P22	Renewable energy	<input type="checkbox"/>	<input type="checkbox"/>
P23	Protection, education, and influence	<input type="checkbox"/>	<input checked="" type="checkbox"/>
XXX	Governance		
XXX	How ESC governs itself as an authority	<input type="checkbox"/>	<input type="checkbox"/>
How does this proposal support the priorities selected? Growing our economy: The Lowestoft Economic Footprint and Impact Report was revised in 2022 (Appendix F3) to consider the wider impacts of flooding on the local Lowestoft economy and the economic growth benefits that tidal flood protection would provide. The study found that the current economic footprint of project benefit area is estimated to provide 6,400 direct jobs and generates £342m of annual GVA. When indirect and induced			

benefits are included, this increases to 8,300 jobs and £443m GVA per year. Although the indirect and induced effects are not necessarily located in tidal flood plain area, they depend on it – such as businesses supplying the renewable energy sector operations. The study found that the future economic footprint of the area could support 12,000 direct jobs which could generate £641m of annual GVA, increasing to 15,600 Jobs and £833m GVA per year when indirect and induced benefits are considered.

Although these wider national economic benefits are not necessarily located in Lowestoft, they depend on it – such as businesses supporting offshore renewable energy sector operations.

Enabling our communities: By significantly reducing flood risk across the area to infrastructure and important public facilities, the project will address a key risk to the community at the individual and systemic level. It will protect and prevent disruption to key assets and infrastructure the communities rely on (such as schools, GP surgeries and transport infrastructure) plus significantly reduce the pre- and post-event mental health impacts of flooding in an area of multiple deprivation. The community and schools have been involved throughout the process and maximising social value is a core component of the project. Artwork created by local students will be incorporated into the design of the tidal flood walls.

Remaining financially sustainable: The project will provide flood resilience to Lowestoft and offer certainty to existing businesses and new developers that Lowestoft is a great place to invest. The project will help protect business rate income generated in the area plus help unlock the generation of new income by enabling growth and development by reducing the cost of site-level flood mitigation on key sites in the town.

Delivering digital transformation: The project will protect infrastructure that will be part of the Lowestoft Full Fibre project, plus broader IT infrastructure assets.

Caring for our environment: The project will protect a range of environmental and landscape benefits within the town that make up the existing programme of improvements to public realm. Lowestoft is the gateway to The Broads and there is a thriving tourism and boating industry connected to this, which needs protection and potentially enhancing. 'Leathes Ham' nature reserve in central Lowestoft will also be protected from tidal inundation plus avoid the significant pollution resulting from a major tidal storm surge entering the urban zone.

Background and Justification for Recommendation

1	Background facts
1.1	During the December 2013 tidal surge over 158 homes and 233 commercial properties were flooded. In addition to this road and rail networks were significantly disrupted.
1.2	The Lowestoft Flood Risk Management Project was already in the early stages of development prior to the tidal surge.
1.3	The Project is developing a way forward to manage the flood risk to Lowestoft from all sources of flooding and to allow the economic growth and regeneration by introducing measures to protect existing residential and commercial properties. This has been confirmed as underpinning the Lowestoft Transport and Infrastructure Plan.
1.4	The extent of the project at risk of tidal flooding encompasses the area from the outer harbour entrance through Lake Lothing to the A1117 Bridge Road crossing and Mutford Lock, which forms the boundary with Oulton Broad. This will include the ongoing construction of tidal floodwalls and the future construction of a tidal barrier to provide protection from tidal flooding to the town of Lowestoft.
1.5	Phase 1 Works were fully funded and received technical assurance from the Environment Agency's Large Project Review Group in 2018. This included tidal flood walls, river wall and pumping station and property level protection.
1.6	The tidal barrier forms Phase 2 of the works.
1.7	The expansion of the wind energy sector in Lowestoft, potential support for the delivery of the Sizewell C construction phase and the need to ensure that the Port remains operational during construction, plus the COVID-19 pandemic have impacted upon the project's construction timetable and methodology – resulting in a substantial increase in project costs.
1.8	The tidal barrier delivers significant wider reaching benefits by significantly reducing the risk of flooding to the town centre, A road, development land and infrastructure.
1.9	In June 2021, the project team in conjunction with ABP tested the navigation simulations conclusions and verified through extensive option assessments that the only option available to deliver the project objectives was to increase the size of the barrier to 40m. ABP are supportive of the 40m barrier option, and it is critical to meet the needs of the key stakeholder landowners in the project in order to get the ¹² Transport Works Act Order (TWAo) approved. The review and subsequent discussions with both the Project Executive Group and the Project Board approved the selection of the 40m barrier as the preferred option.
1.10	Construction of the tidal floodwalls has been completed along the majority of Hamilton Road and Waveney Road. Construction is now progressing at Station Square, South Pier and the Royal Norfolk and Suffolk Yacht Club and adjacent to the Harry Levy Amusement Arcade. Completion of all floodwalls works is programmed for autumn 2023.

¹² 1992 c.42

2	Current position
2.1	<p>Current key activities being undertaken on the project include:</p> <ul style="list-style-type: none"> - Updated Outline Business Case has been submitted to the Environment Agency. - Completion of all floodwalls works is programmed for autumn 2023. - Outline design is currently being reviewed and cost estimate will be updated in May 2023. - The TWAO process is underway for submission on 16 May 2023. - Discussions with Government Departments are taking place regarding additional funding - final cut off for a funding decision will be October 2023. - Ongoing consultation with key stakeholders, statutory consultees, landowners, tenants, businesses and the community. - The Draft Order, Draft Order Explanatory Memorandum, Draft Statement of Aims, Environmental Statement, Consultation Report, Book of Reference are all nearing completion and will be completed ahead of the ¹³TWAO application.

3	Risk relating to the Order application
3.1	<p>It should be noted that the Application will present an opportunity for objectors to submit representations/objections to the Project.</p> <p>These are most likely to come from a limited set of objectors that fall into the following categories:</p> <ul style="list-style-type: none"> • affected landowners. • persons that object to the proposals to close the channel and/or change navigation; and • persons affected by or objecting to adverse impacts caused by the Project as a whole (e.g., noise, vibration etc). <p>These objections may be considered at a public inquiry before an Inspector. The Council will be required to justify the powers it is seeking in the Order, by reference to suitable evidence. The decision on the Application is taken by the Secretary of State for the Environment, Food and Rural Affairs. There is a risk that the Application may be refused in whole or certain elements omitted. In addition, a decision on an Order could be subject to legal challenge by third parties.</p> <p>The project team and officers have identified key risks to the Application being determined favourably and these are being managed, mitigated through preparation of robust supporting documentation with input from legal, planning, and technical consultants.</p> <p>We have engaged with ABP and the Royal Norfolk and Suffolk Yacht Club thoroughly and are currently in the process on agreeing Heads of Terms with both.</p> <p>Appendix A - Consultation Report and Appendix C - Environmental Statement refer to actions taken to raise awareness of the project, to understand concerns, take mitigating action and reduce the risk of objection to the Order application.</p>

¹³ 1992 c.42

4	Reasons for recommendation
4.1	Full Council is being asked to agree to the submission of the Order only at this meeting, when all the preparatory work is completed. It is not committing to the actual construction of the barrier as that will be subject to future reports next year. However, the submission of the Order is a crucial stage in the process formalising, after many years of preparation, how we are going to deliver this crucial project for the town.
4.2	The main driver for the project is to reduce the risk of flooding to people and property in Lowestoft. The December 2013 tidal surge event caused significant damage and disruption to the Lowestoft community and economy and it is considered that without intervention to manage these risks Lowestoft will not be able to develop and will probably go into decline.
4.3	Investment to manage tidal flood risk in Lowestoft is supported by the SMP2's policy of hold the line for the coastal frontage. The proposals are compatible with the recommendations of the Gorleston to Lowestoft Coastal Management Strategy.
4.4	Lowestoft is a town of multiple deprivation that has become increasingly vulnerable to flooding from all sources for many decades.
4.5	At present Lowestoft does not have any formal tidal defences protecting the town and without intervention, it has become increasingly vulnerable to tidal flooding due to climate change. Lowestoft is currently considered to be at risk from the onset of flooding from tide levels with around a 1in5 (20%) to 1in10 (10%) Annual Exceedance Probability (AEP). A 1in200year (0.5% AEP) event (2018) would put approximately 221 residential and 373 commercial properties at risk of tidal flooding in addition to a number of locations earmarked for future development within the Lowestoft Local Plan
4.6	This situation gets significantly worse when the impacts of climate change are considered with the low standard of protection restricting the growth potential of the local economy with a 1in200 year (0.5% AEP) SoP being the standard considered by developers and the Local Planning Authorities to enable the majority of new developments.
4.7	The December 2013 storm surge event was between a 1in100 (1%) and 1in150 (0.67%) AEP event) and approximately 158 residential and 233 commercial properties were flooded in Lowestoft. The tidal flooding also resulted in the closure of key transportation links including Lowestoft railway station and the A47 through Lowestoft.
4.8	To effectively manage risk of flooding from all sources in Lowestoft, East Suffolk Council (ESC) have developed an integrated Lowestoft Flood Risk Management Project. In 2021 we completed the fluvial and pluvial elements of this project and in 2018 we began work on tidal defences.
4.9	However, we now need to deliver a 40m tidal barrier to complete the integrated package of works. The lack of defences are continuing to put people and property at risk, suppressing the ability of Lowestoft to develop and grow and are not allowing the deprived areas of the town to "Level Up" as per wider Government outcomes.
4.10	The lack of certainty of tidal flood risk is holding Lowestoft back and allowing social deprivation to remain a key issue for the town. To enable a tidal barrier to be

	constructed it is essential that a ¹⁴ Transport Works Act Order (TWAo) is obtained. A TWAo allows for changes to navigation and rights of access during construction and for operation and maintenance post construction.
4.11	4.10 Additionally, the scheme aims to underpin the wider development of Lowestoft port as a central hub for marine and offshore industry notably supporting an accelerated delivery programme for ABP's LEEF project and as a marine transport hub for the Sizewell C nuclear power station (national infrastructure project).

Appendices

Appendices:	
Appendix A	Consultation Report (Sub appendix 1a, 2a, 3a, 4a, 5a and 6a)
Appendix B	Strategic Risk Register
Appendix C	Environmental Statement (Early draft)
Appendix D	Outline Business Case
Appendix E	TWAo Programme
Appendix F	TWAo s.239 Notice
Appendix G	Lowestoft Economic Footprint and Impact Report
Appendix H	TWAo Full Process

Background reference papers:
None.

Definitions:

'Application' refers to the documents needed for the submission of a ¹⁵Transport and Works Act Order

'Application process' refers to the legal process in which the application should be prepared as advised by key pieces of legislation, mainly the Transport and Works Act

¹⁵ 1992 c.42

East Suffolk Council

Transport and Works Act 1992



Consultation Report



**Lowestoft Tidal Barrier Order
May 2023**

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1. Introduction

East Suffolk Council is applying for an Order under the Transport and Works Act 1992 (the TWA) and associated planning permission for the purposes of authorising a tidal defence barrier across the channel in the outer harbour east of the Bascule Bridge, together with associated works.

a. Purpose of this report

East Suffolk Council has carried out extensive consultation and engagement providing key organisations with the opportunity to inform option selection and the development of the scheme. More targeted and meaningful engagement helps build longer-term trust with our partners, communities, businesses and organisations. The approach adopted to communications and engagement for the Lowestoft Flood Risk Management Project has been one of two-way symmetrical dialogue, ensuring that we have reached out to those directly and indirectly impacted upon by the proposed approach, understood their viewpoint and have used these to shape the project's progression.

This report documents the process of consultation and feedback that has been taken on board and shaped project development.

The report is a summary of consultations undertaken by East Suffolk Council in the development and design of the proposals and has been prepared to comply with rule 10(2)(d) of the Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006.

b. Scheme objectives

The main objective of the Lowestoft Flood Risk Management Project is to reduce the risk of tidal and pluvial fluvial flooding to residential and commercial properties in Lowestoft in a sustainable way that promotes economic growth and development.

Works to manage the risk of pluvial and fluvial flooding have been completed and therefore this objective has been partially met. Works to reduce the risk of tidal flooding are ongoing and a crucial element of this is the construction of a 40m tidal barrier.

The project will deliver National Government outcomes for at least six Government Departments and contribute significantly to the growth of the economy.

The scheme aims to underpin the wider development of Lowestoft port as a central hub for marine and offshore industry notably supporting an accelerated delivery programme for ABP's LEEF project and as a marine transport hub for the Sizewell C nuclear power station (national infrastructure project).

c. Overview of the Lowestoft Flood Risk Management Project

Lowestoft is a town of multiple deprivation that has become increasingly vulnerable to flooding from all sources for many decades. In December 2013 an East Coast storm surge event had significant consequences for Lowestoft. The surge was between a 1in100 (1%) and 1in150 (0.67%) AEP event) and approximately 158 residential and 233 commercial properties were flooded. The tidal flooding also resulted in the closure of key transportation links including Lowestoft railway station and the A47 through Lowestoft.

At present Lowestoft does not have any formal tidal defences protecting the town and without intervention, it has become increasingly vulnerable to tidal flooding due to climate

change. Lowestoft is currently considered to be at risk from the onset of flooding from tide levels with around a 1in5 (20%) to 1in10 (10%) Annual Exceedance Probability (AEP). A 1in200year (0.5% AEP) event (2018) would put approximately 221 residential and 373 commercial properties at risk of tidal flooding in addition to a number of locations earmarked for future development within the Lowestoft Local Plan.

This situation gets significantly worse when the impacts of climate change are considered with the low standard of protection restricting the growth potential of the local economy with a 1in200 year (0.5% AEP) Standard of Protection being the standard considered by developers and the Local Planning Authorities to enable the majority of new developments.

To effectively manage risk of flooding from all sources in Lowestoft, ESC has developed an integrated Lowestoft Flood Risk Management Project. In 2021 the Council completed the fluvial and pluvial elements of this project. Tidal walls, the first phase of the tidal protection, will be complete in autumn 2023. However, the construction of a 40m tidal barrier is required to complete the integrated package of works. The lack of defences is suppressing the ability of Lowestoft to develop and grow and are not allowing the deprived areas of the town to “Level Up” as per wider Government outcomes. The lack of certainty of tidal flood risk is holding Lowestoft back and allowing social deprivation to remain a key issue for the town.

i. The tidal barrier

The town has become increasingly vulnerable to flooding from all sources for decades. Tidal flooding to 400 homes occurred in the East Coast surge of 1953 and this was replicated again in 2013 tidal surge when 158 residential and 233 commercial properties flooded in Lowestoft and Oulton Broad. Key transportation links such as the railway and A12 also flooded impacting on flood response, recovery and clean up. The town currently relies on a temporary barrier system which is deployed when flood forecasting triggers a surge warning. Defences were most recently deployed in 2017 when severe flood warnings were triggered and a 2.1m surge was predicted. Thankfully the surge diminished due to changing weather patterns. The town currently relies on the temporary barrier solution until a more permanent solution can be delivered.

Lowestoft is particularly susceptible to flooding from tidal surges due to the small normal tidal range compared to other locations along the east coast of England. Lowestoft has a tidal range of approximately 2m. This is low when compared to locations along the outer Thames and Humber estuaries which have tidal ranges in excess of 5m. A consequence of this low tidal range is that a significant tidal surge (<2m) at Lowestoft could cause flooding at almost any state of the tide whereas at locations with a greater tidal range where the timing of the surge event compared to high water has greater influence and reduces the likelihood and/or severity of flooding from the surge.

The impact of tidal flooding on the local economy is significant. A port like Lowestoft can only exist in a coastal location arguably in a flood risk zone. The port is one of only a few east coast ports that are in a position geographically to support offshore wind energy development and contribute to our national economy and wider government outcomes for greener energy supplies and carbon neutrality. The damage and disruption that is caused by flooding- like the 2013 surge -coupled with the lack of confidence for investors in the town that flood risk brings is stymying local growth. This in turn affects the local population due to reduced employment opportunities and diminishes the services available to them as taxable returns to ESC to offer such services are also limited.

The lack of certainty on flood risk is preventing development opportunities at key sites in and around the Lake Lothing area of the town making land uneconomic for private development which is needed to stimulate growth and provide much needed housing for local people. Homes for England have recently visited Lowestoft and are keen to work with the Council on delivering improved housing offers in Lowestoft to meet local need and deliver their housing requirements nationally. This housing will also fuel the economic regeneration of large parts at the centre of the town. Whilst some of this housing will be in the floodplain it is inevitable that development in seaside towns at risk of flooding is needed if coastal seaside towns are to remain viable. This is clearly set out in the Government 'Regeneration of Seaside Towns report'⁴ which acknowledges that without resilient coastal defences we cannot have resilient places.

The UK relies on a number of key coastal towns for nationally important economic outcomes as gateways to the marine and offshore industries and arguably we cannot meet the needs of the offshore and marine industries without coastal towns – arguably all are at risk of coastal flooding due to their proximity to the coast- we therefore require them to become more resilient and the LFRMP project aims to do that for Lowestoft. Without this scheme the only alternative is to manage flood risk through the existing temporary barriers until such time they are overwhelmed.

The only other option is to not proceed with a barrier project and the Council is not prepared to effectively 'decommission' Lowestoft as a town, nor is there any precedent to do so given the size and scale of the place and the opportunities it presents to local and national outcomes.

An initial long list of options was developed in 2017 and presented to the public as part of a consultation. At this time, the preferred option was for a combination of tidal flood walls and a 28m tidal barrier. As the table below highlights, following the results of a Navigation Impact Assessment, a wider barrier was introduced to improve barrier reliability by reducing the risk of ship impacts (and associated costs and environmental effects of repairs) when compared to the 28m barrier in Option 5. The increased width of the barrier improves the resilience of the barrier gates and reduces restrictions on the future development of the Lake Lothing entrance channel.

The defence alignment of this option is the same as Option 5 except with a wider barrier and a shorter length of demountable defences.

Short listed Option	Option Description
1 Do nothing	No maintenance or improvements would be undertaken on the existing flood defences.
2 Maintain - Do minimum	Maintenance of the existing flood wall along the east side of the A12 Waveney Road would continue to provide an informal flood defence, preventing tidal flood waters up to a level of 2.90m AOD from reaching the town centre from the Outer Harbour. No new flood defences would be provided. Provision of the flood warnings would continue.
3 Improve – flood walls only	Construction of approximately 5.5km of flood walls to the north and south of Lake Lothing and around the perimeter of the Outer Harbour. Where the defence line crosses the A47, lift-up/demountable flood barriers will be required from year 50. The Lake Lothing tidal walls tie into high ground towards the western end of Lake Lothing but do not continue all the way to Mutford lock. Continuing to the south in front of the Royal Norfolk & Suffolk Yacht Club, along the south pier access road tying into the existing Children's Corner sea wall. To the north of the Bascule Bridge, the tidal walls would be set back following the perimeter of the port estate, tying into high ground to the north of the

	<p>main ABP port entrance. To accommodate an existing intermediate pressure gas pipeline, a section of demountable defences is required adjacent to the north west corner of the trawl dock, set to the east of the existing port security fence.</p> <p>A further wall with sections of demountable barriers providing access would be</p>
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	<p>provided along Hamilton Road, tying into high ground in the west at the A47 and with the existing Hamilton sea wall to the east.</p> <p>A flood gate across the dual Norwich to Lowestoft railway line previously considered was ruled out due to technical and legal considerations.</p> <p>The tidal flood walls would be typically between 0.3m and 2.6m high including several sections of demountable defences, especially on the northern side of Lake Lothing to allow access to the port quaysides. A number of drainage outfalls would require adjustment to prevent the backflow of tidal water.</p>
5 Improve – 28m Bascule Bridge barrier and walls	<p>Construction of a 28m wide (navigable width) tidal barrier across the Lake Lothing entrance channel on the seaward side of the A47 Bascule Bridge.</p> <p>Approximately 1.0km of flood walls, flood gates and demountable barriers (0.3m to 1.9m high) would be constructed along the same alignment as Option 3 around the outer harbour with the flood walls tying into the tidal barrier structure, high ground and existing coastal defences to the north and south of the outer harbour.</p> <p>A number of tidal flap valves would also be required to seal existing drainage outfalls into the outer harbour. The existing tide gauge adjacent to the Bascule Bridge would need to be relocated to enable the construction of the tidal barrier.</p>
9 Improve – 40m Bascule Bridge barrier and walls	<p>This new option with a wider barrier was introduced to improve barrier reliability by reducing the risk of ship impacts (and associated costs and environmental effects of repairs) when compared to the 28m barrier in Option 5. The increased width of the barrier improves the resilience of the barrier gates and reduces restrictions on the future development of the Lake Lothing entrance channel.</p> <p>The defence alignment of this option is the same as Option 5 except with a wider barrier and a shorter length of demountable defences.</p>

d. Structure of this report

This report and its appendices sets out the consultation and engagement undertaken as part of the development of the Lowestoft Flood Risk Management Strategy and the development into the Lowestoft Flood Risk Management Project and is structured as follows:

Chapter 2 sets out the overall approach to consultation and engagement.

Chapter 3 sets out the consultation approaches, methodology and channels for the Lowestoft Flood Risk Management Strategy and its progression to the Lowestoft Flood Risk

Management Project.

Chapter 4 sets out an overview of the overall consultation undertaken for the Environmental Impact Assessment.

Chapter 5. summarises the consultation undertaken with TWAO stakeholders. This includes those identified under Rule 13 and those named in Schedules 5 and 6 to the TWAO Rules

Chapter 6. sets out the future approaches to consultation and engagement.

2. Approach to consultation

East Suffolk Council and its partners in the Lowestoft Flood Risk Management Project strive to deliver effective stakeholder engagement and meaningful consultation with a wide range of interested parties and individuals as a fundamental component of major projects and schemes. They recognise the importance of maintaining effective channels of communication to enable a two-way flow of information and opinions and appreciate the

value that stakeholder feedback can add to projects. Consultation with those organisations listed in Schedules 5 and 6 is a requirement of the TWAO Rules. It is confirmed that all those named in column (2) of Schedules 5 and 6 of the TWAO Rules have been consulted where authority is sought for works or other matters described in column (1) of those tables. In addition, the 2006 Transport and Works Act (TWA) Guide to Procedures (Department for Transport, 2006) clearly identifies the benefits of pre-application consultation and recommends that promoters 'consult thoroughly on their proposals with relevant statutory authorities, with statutory utilities whose services may be affected, and with all other persons likely to be affected by the proposals'. Pre application consultation has therefore formed an important part of the development of the Lowestoft Flood Risk Management Project, which has been consciously collaborative.

Proposals have been developed by close working between East Suffolk Council and its project partners, the Environment Agency, the New Anglia Local Enterprise Council and Suffolk County Council, taking views from a range of stakeholders. The project's Strategic Steering Group and Key Stakeholder Group have additionally played an important role in developing the Project.

Throughout the development of the Lowestoft Flood Risk Management Project, information has been openly shared and discussion has been welcomed. In this way, the overall direction and design of the Project has been formulated collaboratively. Consultation has also helped shape the evolving design, in response to comments raised. This Chapter provides a high-level overview of the main consultation activities undertaken.

Throughout the development of the Lowestoft Flood Risk Management Project various approaches have been adopted, including:

- Partnership working and close engagement to jointly develop proposals and consider issues.
- Consultation to gather comment on specific proposals.
- Wider communication sharing of information.
- The use of social, digital and virtual tools to ensure that a full age range and social demographic has been explored. This approach also supported continued engagement through social restrictions during the COVID 19 pandemic.

The overall approach to communication, consultation and engagement adopted has been based on the following principles:

- Engaging directly with key partners and the wider local community.
- Being honest and open and making every effort to avoid raising unrealistic expectations.
- Being transparent about how we will engage with the broader community.
- Making time to listen and involve people properly.
- Being clear about what can be considered in and out of the scope of the Project.
- Listening and, where appropriate, acting upon feedback to shape the detail and design.
- Being clear about the decisions made and the rationale for them.
- Ensuring that all engagement is clear and ethical and in accordance with the Chartered Institute of Public Relations Code of Conduct.

These principles were reflected in an initial Stakeholder Engagement Plan prepared at an early stage of the Project. This has been updated at key stages and used to guide all stages

of communications and engagement. The development of the Project has happened over a number of years and a comprehensive engagement log is appended to this report.

3. Consultation for the Lowestoft Tidal Barrier

3.1 Lowestoft Flood Risk Management Strategy

The proposals for the new tidal barrier form part of the wider Lowestoft Flood Risk Management Project (LFRMP). The Lowestoft Flood Risk Management Project is a major scheme to reduce flood risk to Lowestoft and commenced in 2014. The strategy received initial technical approval through a Strategic Outline Case in 2017, with an Outline Business Case submission in November 2022 gaining further approval **in February 2023**. This recommends a **xx from OBC** million investment in new flood defences for Lowestoft to significantly reduce the risk of tidal flooding. The investment will reduce the risk of flooding to over 1500 residential properties and 800 businesses.

Extensive consultation was undertaken during the development of the Lowestoft Flood Risk Management Project from the initial development of the Strategy between 2014 and 2016 (when the Lowestoft Flood Risk Management Strategy was published) to project development to 2023.

For the development of the Strategy over 35 organisations (including statutory bodies and non-governmental organisations), Lowestoft Town Council, parish councils and the general public were consulted at key stages of the Lowestoft Flood Risk Management Strategy through meetings of the Strategic Steering Group, as part of the Lowestoft Transport Infrastructure Group and the publication of consultation documents issued during the formal consultation in June 2016. In addition, the strategy development was launched at a Lowestoft Rising public event attended by over 100 people. This ensured that the views of all interested parties were identified and could be taken into account during the development of the Lowestoft Flood Risk Management Strategy which then formed the basis of the Lowestoft Flood Risk Management Project.

3.2 Lowestoft Flood Risk Management Project

East Suffolk Council is committed to ensuring that all those who may have an interest in the proposed Lowestoft Flood Risk Management Project tidal barrier outside of the statutory consultation process, have adequate opportunity to express their views. A comprehensive stakeholder mapping was undertaken by the project team and the Strategic Steering Group, early on in the project's development to identify and classify stakeholders based on their relationship to the scheme. The stakeholder analysis is regularly reviewed to ensure that it reflects the current state of play. This is included in the communications plan appendix 4. The results of the analysis were used to prepare a programme of consultation and engagement activities. Diversity, inclusion and demographic are assessed and have been applied to all consultation and engagement (Equalities Impact Assessment appendix 5).

A summary of the formal consultation activities undertaken to date is provided in the following sections. A full summary of engagement activities from 2015 is included in appendix 1. This also includes sector specific engagement, for example landowners and fishing groups.

Formal consultation activities since the approval of the Strategic Outline Case:

Public consultation (13th October 2017 to 14th December 2017)

The Lowestoft Flood Risk Management Project sought views on four areas of the scheme (at the time including fluvial and pluvial flood risk) to develop a way to reduce flood risk in Lowestoft. Information was shared with the community through a range of means including an Open Day, a Stakeholder workshop, through email to businesses, residents, those previously flooded, key stakeholders, as well as politicians and community groups. Information was also shared through local media publications and social media, and through posters in prominent areas of Lowestoft.

Documents were made available with stakeholders, and those in at risk areas, as well as being available on the LFRMP website, www.lowestoftfrmp.org.uk

Over 50 key stakeholders attended a workshop was held at the Orbis centre on 1st November 2017 to engage with each area of the project.

Feedback from the public consultation and the November workshop provided direction for the further development of the project.

Public open day (30th November 2017)

A public exhibition was held in Lowestoft to support the public consultation. The consultation was widely advertised through the use of traditional media and covered by the East Anglian Daily Times, Lowestoft Journal and local radio. The objective was to provide people with an overview of the project development and to provide a platform to raise their concerns and learn about any constraints.

We were seeking views on:

- Proposals for the look of the tidal walls and tidal barrier to reduce the risk of flooding from the sea.
- Views from the river and harbour users.
- Environmental aspects of the project.

41 people attended including key stakeholders, local businesses and members of the community. Presentations were given on a rolling basis throughout the day as well as information boards, opportunities to ask questions of the project team and information to take away.

Virtual visitor centre launch May 2021 – see comments and figs below

Key stakeholder workshop (21st October)

A workshop was held on 21st October, hosted by the Project Key Stakeholder Group, to provide an overview of the project development to date and to explore the implications of the Navigation Impact Assessment, construction of the tidal barrier, operation of the tidal barrier and the Environmental Impact Assessment. This was an opportunity to provide feedback on plans, ahead of a wider consultation held between 21st November 2022 and 12th January 2023.

36 people attended the workshop. Of these 7 represented Section 5 & 6 schedule consultees. Feedback was collated from the event and fed into project development. It also provided an opportunity to review and further amend consultation material. Responses to questions raised during the workshop was fed back to all those attending and those invited who were unable to attend.

Public consultation (21st November to 12th January 2023)

Following the workshop, a public consultation was held to explore the implications of the Navigation Impact Assessment, construction of the tidal barrier, operation of the tidal barrier and the Environmental Impact Assessment more broadly. The consultation was advertised:

Media (by press release)

Eastern Daily Press
Lowestoft Journal
Local radio
BBC website

Local outlets

Lowestoft library
Lowestoft shop fronts
East Suffolk Council offices

Social media

Facebook
Insta
Twitter

Direct mail

Project stakeholder database: 306 (including Section 5 & 6 schedule consultees)
Book of Reference stakeholder list: 604
Residents directly affected (through electoral roll) 131
Taylor Properties (residents) 161

Two public consultation drop in events were held in Lowestoft on 23rd and 24th November 2022. These were attended by 42 people. Adverse weather conditions raised concerns about in person attendance and identified gaps in engagement with specific groups. Additional engagement took place with businesses (directly affected), fishing groups (commercial and leisure) and inner harbour marine users. These are included in the engagement log (Appendix 1.)

Social, digital and virtual media

The Global pandemic provided significant challenges for consultation. The use of social and digital media provided new opportunities for engagement. In March 2021 the Project extended its social media channels providing increased opportunities for engagement in the project development.

Table 1. Social media

2021	Twitter	Facebook	Insta	LinkedIn	Total
Impressions	61972	55783	3159	14718	135632
Page Views	6717	497	263	917	8394
2022	Twitter	Facebook	Insta	LinkedIn	Total
Impressions	31415	52432	1971	35216	121034
Page Views	4014	618	96	474	5202

Jan 23	Twitter	Facebook	Insta	LinkedIn	Total
Impressions	1520	4600	137	2500	8757
Page Views	81	152	6	184	423

Table 2. Digital media

Website stats	2021	2022	Jan 23	Total
Page visits (unique)	7608	5931	622	14161
Visitors	6803	4585	474	11862

Average dwell time www.lowestoffrmp.org: 27 seconds

In May 2021 a virtual visitor centre was launched to provide regular updates to the community, businesses and organisations, providing information that could be accessed 24/7. The visitor centre is regularly updated and provides an opportunity to leave feedback. A resulting consequence of including virtual engagement tools has been the engagement from the full range of age groups. During the consultation period in 2022/23, the virtual visitor centre was used to supplement in person exhibitions, strengthening the reach of engagement during this critical period.

Link to virtual engagement room [Lowestoft Flood Risk Management Tidal Barrier Engagement - East Suffolk Council \(virtualconsultation.co.uk\)](https://www.lowestoffrmp.org)

To date, the engagement rate is as follows:

- 1077 sessions
- 382 page views
- Bounce rate 42.96%

Fig 1. New and returning users

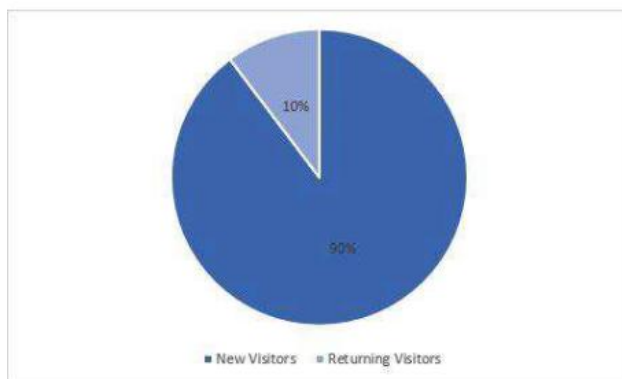
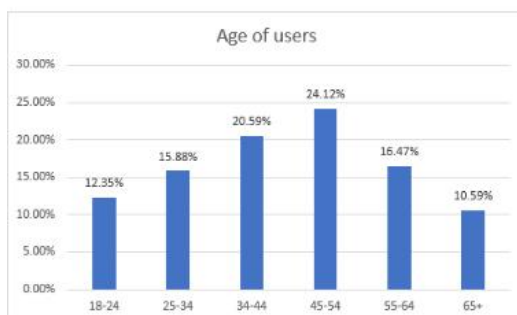


Fig 2. Demographic of visitors



Engagement with schools and colleges

We recognise the importance of engaging students in the understanding of climate change and flood risk, particularly relating to where they live. In 2017, in partnership with Flipside UK and as part of the Watertight Words literacy initiative, an exercise took place involving over 1,000 students of schools and colleges in Lowestoft. Students were encouraged, through a series of workshops, to express the words and phrases that they associated with the sea. The results of these workshops were translated into display boards that were placed initially on the Town Hall and then moved to other locations in Lowestoft.

A series of those words and phrases will be etched inside the glass tidal flood walls which are adjacent to the tidal barrier and will be accompanied by interpretation boards.

We have initiated a number of events at schools and colleges including:

- Careers fairs
- Talks with colleges about career opportunities/apprenticeships on the project (resulting in 6 apprenticeships to date)
- School visits
- Virtual and in person work experience (30 weeks in total)
- Virtual student career's fair (from 2021 to date) [Norfolk and Suffolk Coast Forum Careers Fair 2022 - in partnership with the Lowestoft Flood Risk Management Project \(exhibition.app\)](#)
- Student specific Norfolk and Suffolk Coast Conference workshops and learning opportunities (2018, 2019, 2021 (virtual) and 2022 (virtual) conference).

In October 2022 a competition was launched to schools in Lowestoft to encourage entries to support the naming of the proposed tidal barrier. This closes at the end of the academic year 2023. Further activities leading up to this period, designed to encourage participation, are planned.

4. Regulatory Environmental Impact Assessment (EIA) Consultation

Jacobs to provide

5. Consultation with organisations named in Schedule 5 and 6

Certain organisations specified in Schedules 5 and 6 the Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006 ("the Rules") are required to be given

copies of particular application documents or notification of the application at the time that the application is made. It is also a requirement of those Rules that this report confirms whether those bodies have been consulted by East Suffolk Council and,

if not, the explanation for this.

As described in Sections 2.1 and 2.2 of this report, there has been detailed and wide-ranging consultation by East Suffolk Council on the development and implementation of the Lowestoft Flood Risk Management Project generally and then more specifically in relation to the proposals for the Lowestoft Flood Risk Management Tidal Barrier. Most of the Schedule 5 and 6 parties have had the opportunity to participate in this and, as described above, East Suffolk Council has engaged with those most directly affected on an individual basis.

Appendices 5 and 6 to this report list the Schedule 5 and 6 bodies on whom documents and/or notice of the TWA Order application will be given and summarises how each has been consulted up to 11th May 2023. Each of the Schedule 5 and 6 parties was sent notification of the TWAO application and a draft Order on xxxxxx. In addition to the Schedule 5 and 6 parties, notification was also sent, on xxxxxx to the following interested parties:

6. Future consultation

Should the Secretary of State determine to authorise the Lowestoft Flood Risk Management Project, consultation, engagement and information sharing will continue throughout the detailed design, construction and operational stages. Future planned consultation activities include:

- Individual meetings with landowners, and their representatives, who are directly affected by the proposals.
- Affected landowners will be consulted further about the proposals through future design development and construction stages.
- Ongoing meeting with other affected groups, in particular with marine users and the fishing community
- The local community and general public will also continue to be kept informed of scheme progress.
- Ongoing Strategic Steering Group and Key Stakeholder Group meetings through the detailed design stage to support and inform further development and to help identify opportunities and enhancements that the Lowestoft Flood Risk Management Project could help to deliver.
- A Community Liaison Group will be set up to provide a mechanism for ongoing dialogue with affected residents and businesses.

East Suffolk Council



**Would you like to find out more about the Lowestoft
Flood Risk Management Project?**

email

lowestoftfrmp@eastsuffolk.gov.uk

or visit our website

www.lowestoftfrmp.org.uk



**Lowestoft Tidal Barrier Order
May 2023**



Appendix 1. Engagement Log

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Log of external communications:

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
First edition community newsletter	12/01/2016	Winter edition available on LFRMP website.	Raise awareness of the project.
Second edition community newsletter	05/01/2017	Available on LFRMP website.	Raise awareness of the project.
Community newsletter	06/01/2018	Available on LFRMP website.	Raise awareness of the project.
Press Release	16/06/2018	Watertight words art installation.	Picked up by Lowestoft Journal.
Factsheet	06/2019 – 07/2019	Factsheet on ground investigations works.	Highlight works programme and implications of the works. Contact details provided to assist raising concerns.
Media Article	08/03/2020	Velda Close/ Kirkley Stream construction start, wider LFRMP mention.	Appeared in the Eastern Daily Press.
Press Release	13/07/2020	Press release regarding £43m funding for LFRMP.	Full page in EDP and piece in EADT. Interview with BBC Radio Suffolk. TV coverage on regional ITV and BBC.
Press Release	02/02/2021	Marine Ground Investigations.	Picked up by Lowestoft Journal, Ground Engineering.
Media Inquiry	26/02/2021	LFRMP section in Lowestoft regen special of Lowestoft Journal.	Article included, providing a good overview of the project.
Press Release	08/03/2021	Press release regarding site compound set up.	Picked up by Lowestoft Journal.
Newsletter	12/03/2021	LFRMP Newsletter.	Regular newsletters will be issued following feedback in Strategic Steering Group and Key Stakeholder Group meetings. Positive feedback from Chairs Peter Aldous MP and Phil Aves.
Media Article	31/03/2021	A47 Road Closure.	Lowestoft Journal pick up on UKPN works for LFRMP which will close A47 overnight.
Press Release	08/04/2021	Press release re. start of flood wall construction.	Picked up by EDP, Lowestoft Journal.
Press Release	30/04/2021	Press release regarding Virtual Public Meetings.	Picked up by East Suffolk One, Lowestoft Journal.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Press Release	21/05/2021	Press release regarding Tidal Flood Walls Ground Breaking.	Picked up by EADT, EDP, Lowestoft Journal, Global Legal Chronicle.
Press Release	25/05/2021	Press release regarding Virtual Visitor Centre opening.	Picked up by East Suffolk One, EADT, EDP, Lowestoft Journal.
Letter	27/05/2021	Letter – Waveney Road Night Works .	Letter to residents/ businesses of Waveney Road, uploaded to website & linked on SM.
Letter	27/05/2021	Letter – Hamilton Road Sheet Piling Works.	Letter to businesses of Hamilton Road, uploaded to website & linked on SM.
Factsheet	04/06/2021	Start of flood wall construction.	Distributed to residents on Waveney Road and Hamilton Road.
Letter	05/06/2021	Letter re. Waveney Road night works.	Distributed to residents on Waveney Road.
Media Article	06/07/2021	Lowestoft Journal pick up on A47 Road closure.	Picked up from tweet, with info from letter to residents on website.
Newsletter	26/07/2021	LFRMP Newsletter.	Newsletter distributed via Mailchimp.
Letter	13/08/2021	Letter – Hamilton Road SPR Cadent Works.	Distributed to businesses on Hamilton Road.
Press Release	19/10/2021	Press release re. temporary flood defence exercise.	Picked up by EDP and Lowestoft Journal.
Media Article	23/11/2021	Media articles from full Council report on delays to the start of package two.	Articles on BBC, EDP, EADT & Lowestoft Journal. Comment provided by ESC.
Press release	01/12/2021	Press release – 40m mitre floodgate.	Announcement of 40m mitre flood gate design. Picked up by EDP, EADT, Lowestoft Journal and Suffolk News.
Newsletter	21/12/2021	Newsletter shared to the Lowestoft Harbour and Maritime Business Group.	Info shared on LFRMP behalf.
Press Release	02/01/2022	Press release from BDB Pitmans regarding representing LFRMP.	Law trade press highlighting legal process of preparing for a tidal walls/tidal barrier project.
Letter	04/01/2022	Letter/ SM re. night closure of Waveney Road and footpath closure.	Letter hand delivered to residents on Waveney Road – included link to Virtual Visitor Centre.
Factsheet	17/01/2022	Factsheet – Package 2 work start.	Delivered to local businesses and residents and uploaded to the website.
Factsheet	17/01/2022	Factsheet – Port Entrance Works.	Delivered to ABP and their tenants.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Press Release	20/01/2022	Press release – Start of work on flood gate (Flood Walls Package 2).	Picked up by Lowestoft Journal, online and print.
Press Release	31/01/2022	Press release – Pink Orange sponsorship.	Picked up by Lowestoft Journal, EDP and EADT online and in print. Achieved BB's SCAPE “good news” story KPI.
Newsletter	01/02/2022	Newsletter – January edition	Raising awareness, highlighting progress and social value.
Newsletter	29/04/2022	Newsletter – April edition	Raising awareness, highlighting progress and social value.
Factsheet	01/06/2022	Factsheet re. footpath closure on Waveney Road.	Shared widely on social media, uploaded to website and shared with ESC comms team.
Factsheet	05/06/2022	Factsheet re. Hamilton Road Closure.	Shared with Hamilton Road businesses, on SM, project website and with ESC comms team.
Email	13/06/2022	Email query re. footpath closure on Waveney Road	Email response explaining the reasons for the footpath closure and shared the factsheet.
Newsletter	29/07/2022	Newsletter - July Edition	Raising awareness, highlighting progress and social value.
Social Media	04/08/2022	Social media re. pause of floodwall works on South Pier for the season.	Reshared by ESC.
Factsheet	08/08/2022	Factsheet re. traffic management changes to the port entrance.	Shared with ABP to share with their tenants and uploaded to website.
Letter	08/08/2022	Letter to residents of Waveney Road re. night closure 22/08 - 26/08.	Shared on SM, uploaded to website & informed ESC comms.
Factsheet	04/10/2022	Factsheet regarding recommencement of works on the South Pier/ Yacht Club	Factsheet sent to businesses and residents on/ around South Pier; shared on social media.
Factsheet	03/11/2022	Factsheet re. change of access to the South Pier works to allow for Anglian Water sewage works	Sent to businesses on/ around the South Pier, local residents, blue light responders. Shared on social media.
Press Release	15/11/2022	Press release promoting public consultation and drop-in events.	Picked up by BBC, Lowestoft Journal, Greatest Hits Radio, Suffolk Live.
Social Media	w/c 06/02/2023	Raise awareness of apprenticeship opportunities for local young people on LFRMP.	Profiles produced and shared on SM.

Log of consultation activities:

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Lowestoft Rising Community Event	11/02/2015	Initial introduction to the project.	Over one hundred visitors to the event who had an early opportunity to discuss what
Email	15/05/2016	Draft of consultation materials by email for comment to business advisory group.	To ensure that the consultation materials were fit for purpose and to gather independent views to help them to be developed.
Public Consultation	06/06/2016 - 29/07/2016	Introduction to the Lowestoft Flood Risk Management Strategy and to demonstrate links to the Gorleston to Lowestoft Coastal Strategy. Drop ins on 20th and 21st June.	Opportunity for the community and businesses to make early comment.
Lowestoft Fayre	17/03/2017 - 18/03/2017	Introduction to all projects and initiatives happening or planned for in Lowestoft.	Good engagement and information promoted.
Consultation period on four aspects: Fluvial / pluvial, Tidal, Environmental aspects of tidal, and views from river users.	30/10/2017 - 14/12/2017	Initial options appraisal. Setting out options considered, withdrawn and the reasoning behind this. Comments requested on information shared, to stakeholder data base, through local papers, social media.	Comments received largely supportive of the approach.
Workshop	01/11/2017	To explore the options appraisal and environmental concerns. Comments requested on information shared, to stakeholder data base, through local papers, social media.	Comments received largely supportive of the approach.
Project Open Day	30/11/2017	To set out options appraised and strategy progress. Format followed was a mix of formal presentation and Q&A and informal drop in style engagement. Comments requested on information shared, to stakeholder data base, through local papers, social media.	Comments received largely supportive of the approach.
Public Meetings (virtual)	04/05/2021 06/05/2021	Update on the project for the public to begin to bring out any concerns.	Concerns recorded; attendees added to contact database for future engagement.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
	10/05/2021		
Tidal Flood Walls Ground Breaking (In person and live streamed)	21/05/2021	Tidal Flood Walls Ground Breaking (In person and live streamed)	Coverage in local newspapers. EADT/EDP/Lowestoft Journal and across social media. In person engagement with 30 key stakeholders on site due to COVID restrictions. Over 140 people joined the event through the live-streaming provision. Coverage included mention of the full project objectives, including tidal barrier.
Virtual Visitor Centre Launched	24/05/2021	Virtual Visitor Centre Launched.	Launched due to restricted rules (COVID 19) to allow multiple people to learn about the project, receive updates, and leave comments and questions. This form of basic gaming technology has allowed the project to reach age ranges that have previously proved challenging. Analytics are used to help continue to shape the virtual room. Will be updated throughout the project.
Virtual Visitor Centre Query	21/06/2021	"How will the defences at Lowestoft affect the River Waveney and likelihood, frequency and impacts of flooding upstream?"	Directed to flood risk assessment, clarified the project will have no influence on flooding in Bungay.
Virtual Visitor Centre Query	22/06/2021	"How will the defences at Lowestoft affect the River Waveney and likelihood, frequency and impacts of flooding upstream"	Response sent 22nd June: "As part of the planning application process a Flood Risk Assessment was undertaken, which found the project will not increase flood risk upstream of the scheme. The project will not have any influence on the flood risk in Bungay. The Flood Risk Assessment can be found at the planning portal under "supporting documents""
Virtual Visitor Centre Query	10/07/2021	"I have noticed through observing the Environment Agency tidal buoy at Lowestoft that wave heights have been very high this week. I believe wave heights reached 6.83 metres at one point. Is this indicative of an increase in wave heights and tidal velocities in the Lowestoft area?"	Response sent 26th October: "Thank you for your message. Details of the coastal management strategies for the Lowestoft area can be found in the Gorleston to Lowestoft Coastal Strategy."

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Virtual Visitor Centre Query	12/02/2022	"Hi, one question, where will the water go that is deflected by the barrier. What other flood are at risk as a result of that?"	Response confirming there would be no increased flood risk and added flood risk assessment to the Virtual Consultation Room.
Meeting	26/07/2022	Represented LFRMP at the Lowestoft Ambassadors meeting.	Regen team now have footfall counters in place - may be useful data for funding. Opportunity for volunteering/ social value with Warm Rooms. Potential construction on Station Square.
Email	21/09/2022	Email Invite to 21/10 workshop.	Sent to members of the Key Stakeholder Group as hosts, separate invite sent to list of stakeholders identified. Invite sent to Peter Langford who raised at Suffolk Resilience Forum meeting to ensure attendance of blue light responders, Suffolk Highways and National Highways.
Email	29/09/2022	Chase email invite to 21/10 workshop.	Individual chase emails to invite to 21/10 workshop - increase in RSVPs.
Letter	11/10/2022	Letter invites for 21/10 workshop.	Letter invites to stakeholders identified as landowners/ tenants of land packages impacted by barrier.
Email	14/10/2022	Final chase email invite to 21/10 workshop.	Individual chase emails to invite to 21/10 workshop - increase in RSVPs.
Workshop	21/10/2022	Key Stakeholder Workshop aiming to draw out concerns and impacts from Key Stakeholders relating to the EIA, NIA, barrier construction, operation, and maintenance.	Concerns across a range of topics drawn out and distilled for Project Team to respond to. Attendance from range of stakeholders including navigation users, schedule 5 and 6 stakeholders and blue light responders.
Letter	16/11/2022	Letter invite for consultation and drop in events to residents/ businesses potentially impacted by the tidal barrier construction.	Letter sent to addresses on Waveney Road, Pier Terrace, Marine Parade, London Road South and landowners identified in the land packages document.
Email	16/11/2022	Notes and presentation from Key Stakeholder Workshop (21/10) distributed.	Briefing sent to ESC councillors, Strategic Steering Group and Key Stakeholder Group.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Email Briefing	18/11/2022	Briefing for councillors and members of LFRMP governance structure to make aware of consultation to share with their networks.	Briefing sent to ESC councillors, Strategic Steering Group and Key Stakeholder Group.
Consultation	21/11/2022 - 12/01/2023	Consultation to draw out impacts/ concerns from stakeholders and community around the construction, operation and maintenance of the tidal barrier. Materials available to view on the virtual engagement room, Riverside, Marina Centre and Library.	13 surveys completed by stakeholder, underrepresented groups identified, and further consultation organised.
Email	21/11/2022	Email inviting database to view consultation materials and attend drop-ins.	Email sent to LFRMP stakeholder database
Drop-in Sessions	23/11/2022 - 24/11/2022	Drop-in sessions for public and stakeholders to find out more about the barrier, view consultation materials and answer any questions.	42 people attended over the two sessions. Concerns around adverse weather affecting attendance – further consultation with underrepresented groups planned.
Business Engagement	28/11/2022	The purpose of the outreach was to discuss the project with local business owners and share the consultation paper with those who are close to the construction area and might be impacted by the building works.	Covered: Station Square, Bevan Street East (Part), East end of Commercial Road, A47 on the North side of the Harbour/Trawl Dock, Denmark Road (nearest station square). Project team discussed with the business owners, which were open, the nature of the works, providing them with the booklet for reference and encouraged them to provide feedback on the TWAO. Directed any specific concerns to email the team and someone would be in touch to discuss the concerns. Where businesses were closed, copy of the booklet posted though the door, distributing approximately 50 booklets.
Email	05/12/2022	Email to Danny Steel asking to share consultation materials with contacts, including property/ landowners in Lowestoft.	Paul Rice - Outlon Broad Yacht Station Manager - got in touch to be added to the stakeholder database.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Email	06/12/2022	Ensure those on the project stakeholder database has received information regarding the consultation.	Email to each person on stakeholder database with booklet, virtual engagement room link and survey.
Email	06/12/2022	Email to Julian Gregory at Eastern IFCA to organise meeting with fishermen/ fishing businesses re. tidal barrier consultation.	IFCA provided the project with contact details for the Lowestoft Inshore Fishing Fleet Association.
Booklet Delivery	06/12/2022	Kya dropped off some booklets and a poster to the Taylor's properties office for display.	Poster displayed in Taylors Properties on Waveney Road (A47).
Letter / Booklet Delivery	08/12/2022	Ensure residents in the immediate vicinity to the barrier construction have engaged with the consultation and are aware of potential impacts during construction.	Letters, booklets and surveys sent to addresses in the immediate vicinity of the barrier location (Waveney Road, Station Square, Marine Parade, London Road South, Pier Terrace).
Email	16/12/2022	Request from David Bennet at Lowestoft Cruising Club to share consultation booklet to share with members.	Shared booklet, linked to survey and offered to provide paper copies of survey if needed.
Email	05/01/2023	Post-Christmas email regarding consultation.	Email sent via Mailchimp to the stakeholder database.
Radio	09/01/2023	Final push for consultation.	Info regarding consultation added to the East Coast One radio bulletins.
Email	13/01/2023	Email from Mr John Sparks with additional comment on the consultation.	Additional comment: "it is (still) important to ensure that "backflow" is prevented on all drainage ("combined" or "otherwise") from road gullies (and "basements") in the event that the water level in "Lake" Lothing (or MORE importantly "seaward" of the "proposed" barrier - if that is where ANY discharge to) rises above "inlet" levels."
Email	22/02/2023	Communication regarding change to TWAO Location Plan and increased length of channel closures to 4-5 x 3-week channel closures. Offered to meet with anyone concerned and/or felt they would be impacted.	Sent to the project stakeholder database.

Log of engagement with LFRMP Governance:

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Suffolk County Council (SCC)	Meeting	14/03/2016	Strategy discussion chaired by SCC.	Meetings to progress work and discuss issues.
Project Board	Meeting	01/04/2016	Meetings to agree key decisions.	
SCC	Meeting	20/04/2016	Strategy discussion chaired by SCC.	Meetings to progress work and discuss issues.
SCC	Meeting	16/09/2016	Strategy discussion chaired by SCC.	Meetings to progress work and discuss issues.
SCC	Meeting	21/11/2016	Strategy discussion chaired by SCC.	Meetings to progress work and discuss issues.
Project Board	Meeting	13/02/2017	Meetings to agree key decisions.	
Project Board	Meeting	21/06/2017	Meetings to agree key decisions.	
SCC	Meeting	06/07/2017	Strategy discussion chaired by SCC.	Meetings to progress work and discuss issues.
Waveney District Council (WDC)	Cabinet Meeting	06/07/2017	Permission to proceed to Business Outline Case, begin work on TWAO.	Approval awarded to proceed with TWAO.
SCC	Meeting	08/01/2018	Strategy discussion chaired by SCC.	Meetings to progress work and discuss issues.
Project Board	Meeting	17/01/2018	Meetings to agree key decisions.	
Project Board	Meeting	29/03/2018	Meetings to agree key decisions.	
Project Board	Meeting	31/05/2018	Meetings to agree key decisions.	
Project Board	Meeting	28/11/2018	Meetings to agree key decisions.	
WDC	Meeting	20/03/2019	Presentation to WDC full council meeting.	

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Suffolk Coastal District Council	Meeting	28/03/2019	Presentation to WDC full council meeting.	
Project Board	Briefing	12/10/2019	Written update to Board members and Cllr Keith Patience.	
WDC	Meeting	14/01/2020	Obtaining planning committee decision about the floodwalls application and listed building consent.	Planning application accepted subject to resolving one outstanding objection.
Project Board	Meeting	07/02/2020	Meetings to agree key decisions.	
Project Board	Virtual Meeting	20/07/2020	Meetings to agree key decisions.	
Project Board	Virtual Meeting	04/12/2020	Meetings to agree key decisions.	
Strategic Steering Group Meeting	Virtual Meeting	19/01/2021	Strategic Steering Group Meeting.	Re-introduction to the project following long break – further meetings planned as project progresses. Workshop to investigate group membership; list updated.
Project Board	Virtual Meeting	12/03/2021	Meetings to agree key decisions.	
Key Stakeholder Group	Virtual Meeting	23/02/2021	Key Stakeholder Group Meeting. Introduction to the project.	Workshop to evaluate group membership; list updated. Suggestion of separate groups/ meetings for navigation. Began to discuss concerns – communication key – establish routes. Warning of any disruption. users and property landowners.
Key Stakeholder Group	Virtual Meeting	06/04/2021	Key Stakeholder Group Meeting. Introduction to the project. Repeat of 23rd Feb meeting for those unable to attend.	
Project Exec.	Virtual Meeting	15/04/2021	Meetings to agree key decisions.	
Strategic Steering	Virtual Meeting	30/04/2021	Strategic Steering Group Meeting.	

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Group Meeting				
Project Exec.	Virtual Meeting	09/07/2021	Meetings to agree key decisions.	
Project Board	Virtual Meeting	15/07/2021	Meetings to agree key decisions.	
Project Exec.	Virtual Meeting	01/10/2021	Meetings to agree key decisions.	
Project Board	Virtual Meeting	15/10/2021	Meetings to agree key decisions.	
Key Stakeholder Group	Virtual Meeting	03/11/2021	Key Stakeholder Group meeting (virtual).	Meetings to take place following SSG meetings.
Project Exec.	Virtual Meeting	11/11/2021	Meetings to agree key decisions.	
Project Exec.	Virtual Meeting	17/01/2022	Meetings to agree key decisions.	
Strategic Steering Group Meeting	Virtual Meeting	14/02/2022	Strategic Steering Group Meeting.	
Key Stakeholder Group	Virtual Meeting	28/02/2022	Key Stakeholder Group Meeting.	
Project Exec.	Virtual Meeting	01/04/2022	Meetings to agree key decisions.	
Project Exec.	Virtual Meeting	01/07/2022	Meetings to agree key decisions.	
Strategic Steering Group Meeting	Virtual Meeting	09/09/2022	Strategic Steering Group Meeting.	Outlined upcoming plan for TWAO consultation - workshop on 21/10 and public consultation in November. Decided the Key Stakeholder Group will lead the 21/10 workshop, with a meeting to look at outputs arranged for early November.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Key Stakeholder Group	Virtual Meeting	07/11/2022	Key Stakeholder Group meeting to follow up consultation event on 22/10.	

Log of engagement with Government organisations:

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Department for farming, environment and rural affairs (Defra)	Meeting	06/10/2015	Meeting to outline project ahead of site visit with the Environment Agency.	
Environment Agency	Project Visit	12/11/2017	Project visit Emma Howard Boyd, Chair of the Environment Agency.	Raise profile of LFRMP to highlight its importance and support funding bids to help address potential funding shortfall.
Environment Agency	Virtual Meeting	07/04/2018	Discussion of Lake Loathing threshold levels.	
WMA	Meeting	03/05/2019		
Environment Agency	Meeting	19/02/2020	Environment Agency with Peter Aldous MP.	
Essex County Council	Virtual Meeting	05/04/2020	Power Park discussion.	
Environment Agency	Virtual Meeting	11/04/2020	Green Finance discussion.	
Environment Agency	Virtual Meeting	11/04/2020	LFRMP Measures.	
Townsend/ HMT's IPA	Virtual Meeting	30/09/2020	Lowestoft Tidal Barrier Construction Risk Underwriting.	
Government Actuary's Department	Virtual Meeting	23/11/2020	LFRMP Tidal Walls and Barrier Indemnities.	

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Government Actuary's Department	Workshop	15/12/2020	LFRMP Risk Workshop.	
Environment Agency	Virtual Meeting	18/12/2020	LFRMP Introduction Call – EA and HowdenRB.	
Government Actuary's Department	Virtual Meeting	08/01/2021	LFRMP Marine Ground Investigation Insurance Scenario's discussion.	
Government Actuary's Department	Virtual Meeting	17/12/2021	LFRMP Discussion of Risk Scenarios.	
Government Actuary's Department	Virtual Meeting	21/02/2022	LFRMP Tidal Risk underwriting: HMT Risk Workbook Review Session	
Defra	Briefing	05/05/2022	Sent to Defra ahead of meeting between Peter Aldous MP and floods minister Rebecca Pow MP.	
Peter Aldous MP	Email	06/06/2022	Email response to Peter Aldous MP re. query received about Waveney Road footpath closure.	

Log of engagement with Associated British Ports (ABP):

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Meeting	15/05/2015	ABP engagement.	Discussed the need to develop long/short list of options including one in the Outer Harbour. Roger agreed that this and the outer harbour study are sensible. Also discussed site compound and possible issues of occupancy which will need to be worked through. Roger to provide a list of tenants. SB provided the alignment for temporary defences.
Meeting	10/12/2015	Scope discussion.	Feedback into the scope of work and also gained a better understanding of concerns.
Letter	13/02/2016	Scope/Stakeholder Engagement.	ABP revised wall alignment letter SJB.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Site investigations	16/03/2016	Scope/Stakeholder Engagement.	Identified and agreed sites for northern works.
Meeting	18/04/2016	Wall alignment.	Continued ongoing consultation with ABP.
Email	12/05/2016 - 13/05/2016	Scope/Stakeholder Engagement.	RE: Proposed Flood Defence Works - Lowestoft
Meeting	07/05/2017	With SB	
Meeting	14/08/2017	Lowestoft barrier and walls meeting.	Continued ongoing consultation with ABP.
Meeting	12/12/2017	Lowestoft Flood Barrier Red Line Meeting.	Continued ongoing consultation with ABP.
Email	08/01/2018 - 10/01/2018	Project scope.	RE: LFRMP - Tidal barrier PIER Scoping Report - Email Conversation.
Email	16/01/2018 - 25/01/2018	Scope/Stakeholder Engagement.	FW: Lowestoft FRMP - Current methodology for substructure work - Email Conversation
Email	09/02/2018 - 14/02/2018	Scope/Stakeholder Engagement.	FW: Lowestoft FRMP - Crane rigging etc. response - Email conversation
Ground Investigations	06/03/2018 - 12/03/2018	Ground Investigations.	RE: Phase 2 Non-Intrusive GI Works
Meeting	22/03/2018	Meeting with ABP.	Notes from 22 March Meeting with ABP - Lowestoft FRMP
Meeting	27/03/2018	Meeting with ABP.	Continued ongoing consultation with ABP.
Review of tidal barrier proposals	01/04/2018	Balfour Beatty / ABP / Jacobs / ESC project team	Continued ongoing consultation with ABP.
Email	13/04/2018 - 24/05/2018	Engagement regarding ground investigations.	FW: Marine GI Plan - Lowestoft FRMP.
Meeting	05/08/2018	Wall alignment and construction methodology tidal barrier.	Further meetings to be planned but stakeholder largely comfortable.
Email	03/06/2018 - 06/06/2018	Ground Investigations.	ABP overwater Boreholes method to ABP - email conversation.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Email	03/06/2018 - 06/06/2018	Ground Investigations.	RE: ABP overwater boreholes method.
Meeting	17/07/2018	Meeting regarding navigation simulations.	Continued ongoing consultation with ABP.
Meeting	31/07/2018	Flood Wall alignment.	Continued ongoing consultation with ABP.
Meeting	10/09/2018	Meeting with ABP and SSE.	Continued ongoing consultation with ABP.
ABP	10/09/2018 - 11/10/2018	Scope/Stakeholder Engagement.	FW: Lowestoft FRMP - High ground at the Port Entrance - Email Conversation
Meeting	24/09/2018	Tidal Barrier Meeting.	Continued ongoing consultation with ABP
Email	25/09/2018 - 09/10/2018	Scope/Stakeholder Engagement with SSE and ABP.	Email Conversation between SB, Troy Doherty, Christopher Hulme and Robert Holmes, arranging a meeting to discuss the Flood Defences around ABP and SSE.
Email	01/10/2018	Legal agreements.	Lowestoft Flood Risk Management Project - Heads of Terms for the Flood Walls.
Meeting	04/11/2018	Meeting with ABP, RNSCY and Harry Levy to discuss risk, methodology and wall alignment.	Discussion of working period extension and construction methodology.
Email	24/01/2019 - 19/02/2019	Ground Investigations.	FW: Ground investigation schedule - Email conversation.
Email	24/01/2019 - 28/02/2019	Ground Investigations.	FW: Ground investigation schedule - Email conversation.
Meeting	05/03/2019	Flood walls legal meeting.	Continued ongoing consultation with ABP
Meeting	15/03/2019	Flood Walls Update.	Continued ongoing consultation with ABP.
Meeting	12/04/2019	Flood Walls Update.	Continued ongoing consultation with ABP.
Email	31/05/2019 - 01/06/2019	Environmental	RE: ABP - new flood walls and the Environmental Permitting Regulations 2016 - Email Conversation.
Meeting	26/11/2019	Lowestoft Flood Walls - ABP agreement progress.	Continued ongoing consultation with ABP.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Meeting	07/02/2020	Update local ABP team on the design progress and ground investigation details.	Continued ongoing consultation with ABP.
Telecom	23/04/2020	Catch-up on project progress and ground investigations works.	Continued ongoing consultation with ABP.
Virtual Meeting	19/05/2020	Design Update for elements on ABP land.	Continued ongoing consultation with ABP.
Virtual Meeting	27/05/2020	Tidal Floodwalls and ABP legal agreements.	Continued ongoing consultation with ABP.
Virtual Meeting	18/06/2020	ABP bi-weekly catch up.	Continued ongoing consultation with ABP.
Site Visit	23/06/2020	ABP Site Walkover and clarification.	Continued ongoing consultation with ABP.
Virtual Meeting	25/06/2020	Discussion of Tidal Floodwalls adjacent to Sembmarine SLP land (ABP Owned).	Continued ongoing consultation with ABP.
Virtual Meeting	02/07/2020	ABP Catch Up	Continued ongoing consultation with ABP.
Site Visit	17/07/2020	ABP site walkover and stats discussion.	Continued ongoing consultation with ABP.
Virtual Meeting	21/07/2020	Discussion of affected utilities and coordination.	Continued ongoing consultation with ABP.
Meeting	11/08/2020	Lowestoft Outer Harbour Working Group – Commercial Road.	Continued ongoing consultation with ABP.
Virtual Meeting	13/08/2020	ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	17/08/2020	Hamilton Road Flood Walls Discussion with ABP and Scottish Power.	Continued ongoing consultation with ABP.
Virtual Meeting	18/08/2020	ABP utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	27/08/2020	ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	01/09/2020	ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	02/09/2020	Lowestoft Outer Harbour Project Group.	Continued ongoing consultation with ABP.
Virtual Meeting	10/09/2020	Tidal Wall SSE Update Meeting.	Continued ongoing consultation with ABP.
Virtual Meeting	10/09/2020	ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	11/09/2020	Lowestoft Navigation Simulation Dates.	Continued ongoing consultation with ABP.
Virtual Meeting	15/09/2020	ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	17/09/2020	CCTV and Fibre re-location for LFRMP duration.	Continued ongoing consultation with ABP.
Telecom	24/09/2020	Catch-up on project progress and ground investigations works.	Continued ongoing consultation with ABP.
Telecom	25/09/2020	Compound discussions for Tidal Walls and Potential Barrier.	Continued ongoing consultation with ABP.
Virtual Meeting	25/09/2020	Lowestoft Port Planning Masterplan.	Continued ongoing consultation with ABP.
Virtual Meeting	29/09/2020	ABP Utilities Liaison.	Continued ongoing consultation with ABP.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Site meeting	30/09/2020	ABP port entrance tracing electric cables and feed locations, as well as discussions of temp/permanent service diversion.	Continued ongoing consultation with ABP.
Virtual Meeting	07/10/2020	ABP/ESC Legal Agreements.	Continued ongoing consultation with ABP.
Virtual Meeting	08/10/2020	LFRMP/ABP Catch Up.	Continued ongoing consultation with ABP.
Site Visit	09/10/2020	Potential compound site walk over.	Continued ongoing consultation with ABP.
Virtual Meeting	13/10/2020	ABP utilities liaison – Tidal walls.	Continued ongoing consultation with ABP.
Virtual Meeting	14/10/2020	ABP Progress meeting.	CCTV & Jetting confirmed, discussing ABP temp entrance.
Virtual Meeting	22/10/2020	ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	27/10/2020	ABP Progress meeting.	Continued ongoing consultation with ABP.
Site Meeting	28/10/2020	ABP site meeting.	Discussing south pier tunnel contents.
Virtual Meeting	05/11/2020	ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	10/11/2020	Lowestoft Tidal Walls – ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	10/11/2020	ABP Progress meeting.	ABP backtracked on duct sealing system, temporary entrance proposals agreed.
Virtual Meeting	19/11/2020	ABP/LFRMP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	24/11/2020	ABP Progress meeting.	Continued ongoing consultation with ABP.
Virtual Meeting	03/12/2020	LFRMP / ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	07/12/2020	ABP Compound Discussion.	Continued ongoing consultation with ABP.
Virtual Meeting	08/12/2020	ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Testing and Review	14/12/2020	Navigation simulations FAT Day.	Continued ongoing consultation with ABP.
Virtual Meeting	21/12/2020	CPE / ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	04/01/2021	ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	05/01/2021	ABP Progress meeting.	Continued ongoing consultation with ABP.
Virtual Meeting	19/01/2021	ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	19/01/2021	LFRMP Tidal Barrier Meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	28/01/2021	LFRMP Marine Ground Investigation Update.	Continued ongoing consultation with ABP.
Virtual Meeting	26/01/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	02/02/2021	ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	04/02/2021	Lowestoft FRMP Marine GI Update.	Continued ongoing consultation with ABP.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Virtual Meeting	05/02/2021 – 08/03/2021	Daily Marine GI Meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	09/02/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	16/02/2021	LFRMP Tidal Barrier Meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	16/02/2021	ABP Boreholes.	Continued ongoing consultation with ABP.
Virtual Meeting	16/02/2021	Tidal Walls ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Site Meeting	03/03/2021	Meeting to discuss movement of fishermen's containers for period of 18 months for construction of tidal walls.	Continued ongoing consultation with ABP.
Virtual Meeting	04/03/2021	Lowestoft Legal Agreements.	Continued ongoing consultation with ABP.
Virtual Meeting	08/03/2021	Unexploded Ordnance Catch-Up.	Continued ongoing consultation with ABP.
Virtual Meeting	08/03/2021	LFRMP Barrier Temporary Works.	Continued ongoing consultation with ABP.
Virtual Meeting	09/03/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	15/03/2021	ABP Barrier Constraints.	Continued ongoing consultation with ABP.
Virtual Meeting	16/03/2021	LFRMP Tidal Barrier Meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	16/03/2021	Lowestoft Tidal Walls ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	22/03/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	23/03/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	25/03/2021	LFRMP Fishermen's Compound Relocation.	Continued ongoing consultation with ABP.
Virtual Meeting	01/04/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	06/04/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	09/04/2021	ESC/ABP Temporary Compound Lease.	Continued ongoing consultation with ABP.
Virtual Meeting	12/04/2021	Lowestoft Tidal Walls ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Navigation Simulations	14/04/2021 – 23/04/2021	Lowestoft Flood Defence Navigation Simulations.	
Virtual Meeting	20/04/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	23/04/2021	Commercial Road Working Group.	Continued ongoing consultation with ABP.
Virtual Meeting	26/04/2021	Tidal Barrier – North Side Land Layout.	Continued ongoing consultation with ABP.
Virtual Meeting	27/04/2021	Lowestoft Tidal Walls – ABP utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	30/04/2021	Tidal Walls Package 2 Walk Through.	Continued ongoing consultation with ABP.
Virtual Meeting	04/05/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Site Visit	05/05/2021	LFRMP Ground Breaking Site Visit.	Continued ongoing consultation with ABP.
Virtual Meeting	11/05/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	11/05/2021	LFRMP tidal walls ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	18/05/2021	LFRMP Tidal barrier Meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	18/05/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	25/05/2021	LFRMP Flood Walls Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	25/05/2021	To discuss the current stage of the project with ABP concerning the Services.	Continued ongoing consultation with ABP.
Virtual Meeting	01/06/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	07/06/2021	LFRMP Tidal Barrier – Post-Navigation Simulation Catch-Up.	
Virtual Meeting	08/06/2021	LFRMP Flood Walls Catch-Up.	Continued ongoing consultation with ABP.
Virtual Meeting	08/06/2021	To discuss the current stage of the project with ABP concerning the Services.	Continued ongoing consultation with ABP.
Virtual Meeting	15/06/2021	Tidal Barrier Meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	22/06/2021	LFRMP Floodwalls Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	22/06/2021	To discuss the current stage of the project with ABP concerning the Services.	Continued ongoing consultation with ABP.
Virtual Meeting	23/06/2021	LFRMP Package 2 Technical meeting.	Continued ongoing consultation with ABP.
Virtual Meeting	29/06/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	06/07/2021	LFRMP Floodwalls Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	06/07/2021	Tidal Barrier Siltation Discussion.	Continued ongoing consultation with ABP.
Virtual Meeting	06/07/2021	To discuss the current stage of the project with ABP concerning the Services.	Continued ongoing consultation with ABP.
Virtual Meeting	08/07/2021	Package 2 Technical Meeting Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	13/07/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	20/07/2021	LFRMP Tidal barrier Meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	20/07/2021	LFRMP ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	27/07/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	03/08/2021	LFRMP Floodwalls Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	03/08/2021	LFRMP ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Meeting	04/08/2021	LFRMP Tidal barrier Options Meeting.	
Virtual Meeting	10/08/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Telecom	10/08/2021	Discussion about isolating the pumping foul to the LEEF peninsula.	ABP confirmed we could isolate for the time we need to do the works required.
Telecom	11/08/2021	To confirm that the controlled cut at wave road has not affected ABP.	Confirmation from ABP that the controlled cable cut has not affected them.
Virtual Meeting	16/08/2021	LFRMP ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	24/08/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	31/08/2021	To discuss the current stage of the project with ABP concerning the Services.	Continued ongoing consultation with ABP.
Email	06/09/2021	Emailed ABP to invite them to inspect the pumping foul connections at Hamilton Road.	ABP engineers responded that they were happy not to attend as long as BB are happy that the connections were sound and not leaking.
Virtual Meeting	07/09/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Telecom	08/09/2021	Phone call to request key for the CCTV column at Hamilton Road so that BB could lower it to repair it	ABP searched for a key, when they could not find it ABP cut a groove in the lock to allow us to open the service hatch.
Virtual Meeting	14/09/2021	LFRMP Floodwalls Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	21/09/2021	LFRMP Tidal barrier meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	21/09/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	22/09/2021	LFRMP ABP Heads of Terms Discussion.	Continued ongoing consultation with ABP.
Meeting	24/09/2021	Liaison between Lowestoft Fishermen and LFRMP team.	Continued ongoing consultation with ABP.
Virtual Meeting	28/09/2021	Outer Harbour Entrance Flood Defence (Walls and Barrier) Prestart Meeting.	Continued ongoing consultation with ABP.
Virtual Meeting	28/09/2021	LFRMP Floodwalls Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	28/09/2021	To discuss the current stage of the project with ABP concerning the Services.	Continued ongoing consultation with ABP.
Virtual Meeting	30/09/2021	LFRMP / ABP Technical Meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	05/10/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Workshop	05/10/2021	LFRMP ABP Legal Agreements Workshop.	Continued ongoing consultation with ABP.
Site Meeting	12/10/2021	LFRMP Port Control Site Visit and Discussion.	Continued ongoing consultation with ABP.
Virtual Meeting	12/10/2021	LFRMP Floodwalls Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	12/10/2021	To discuss the current stage of the project with ABP concerning the Services.	Continued ongoing consultation with ABP.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Meeting	15/10/2021	CPE/ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	19/10/2021	LFRMP ABP Catch Up	Continued ongoing consultation with ABP.
Virtual Meeting	26/10/2021	LFRMP Floodwalls Catch Up.	Continued ongoing consultation with ABP.
Telecom	26/10/2021	Called ABP to discuss the option of putting a gully on the foul at CH 310 Hamilton Road.	BB requesting permission to fit gully on private foul.
Email	26/10/2021	Emailed ABP to confirm phone call about gully to be fitted to foul at Hamilton Rd CH 310. Plan issued in the email.	Request for permission to fit gully to existing private foul.
Meeting	29/10/2021	Carparking at Waveney Road.	Agreement that we can commence the new ABP entrance in the first week of December. Carpark spaces would be returned to the water side of Waveney Road and the fence pulled towards the road to act as a barrier for the fence install. Other carpark agreements made between ESC and ABP.
Virtual Meeting	09/11/2021	2-weekly meeting with ABP to discuss progress on site.	Discussion with TD concerning works affecting ABP as well as a chance for TD to raise any concerns to BB.
Virtual Meeting	16/11/2021	LFRMP Tidal barrier meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	18/11/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Site Meeting	26/11/2021	Meeting – ABP Lowestoft Marine Navigation Stakeholder Meeting.	Attendees flagged interest in a Navigation Working Group for the project – TEP confirmed project would get in touch about this in early 2022.
Virtual Meeting	26/11/2021	2-weekly meeting held with ABP.	Updating ABP with the latest Stats works on site.
Virtual Meeting	14/12/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	21/12/2021	LFRMP Tidal barrier meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	28/12/2021	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	07/01/2022	ABP Legal Agreements Catch Up Call.	Continued ongoing consultation with ABP.
Virtual Meeting	07/01/2022	LFRMP Tidal Walls Package 2 Season 1 meeting.	Continued ongoing consultation with ABP.
Virtual Meeting	11/01/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	12/01/2022	LFRMP Navigation simulations January 2022 Scoping.	Continued ongoing consultation with ABP.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Virtual Meeting	13/01/2022	LFRMP and Engie catch up.	Continued ongoing consultation with ABP.
Virtual Meeting	13/01/2022	Station Square and Port Office Logistics.	Continued ongoing consultation with ABP.
Site Meeting	25/01/2022	ABP Site Walkover – Fishermen’s Quay and Waveney Road.	Continued ongoing consultation with ABP.
Virtual Meeting	28/01/2022	LFRMP Package 2 Questions.	Continued ongoing consultation with ABP.
Virtual Meeting	25/01/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Navigation Simulations	31/01/2022 – 04/02/2022	Lowestoft 40m Tidal barrier Navigation Simulations	Continued ongoing consultation with ABP.
Virtual Meeting	01/02/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	08/02/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	15/02/2022	LFRMP Tidal Barrier meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	15/02/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	22/02/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	24/02/2022	NIA discussion Meeting.	
Virtual Meeting	01/03/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	14/03/2022	LFRMP Tidal Barrier Construction Methodology and Scheduling.	Continued ongoing consultation with ABP.
Virtual Meeting	15/03/2022	LFRMP Tidal Barrier meetings.	Continued ongoing consultation with ABP.
Virtual Meeting	15/03/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Site Meeting	18/03/2022	Meeting on site to discuss the requirements for the security hut on Waveney Road entrance, regarding confirmed where the power and fibre cables feed from and that they both need to be ducted to the new security hut location	Plan of options for how to run the ducts in this area.
Virtual Meeting	30/03/2022	Lowestoft Tidal Walls ABP Utilities Liaison.	Continued ongoing consultation with ABP.
Virtual Meeting	05/04/2022	LFRMP ABP Catch Up	Continued ongoing consultation with ABP.
Email	05/04/2022	Initial query regarding the works at the entrance which developed into questions from Fisherman’s Mission on reduced rent etc. Advised this should be taken up with ESC in the first instance.	Proposed a meeting with the parties to understand the works and disruption caused.
Virtual Meeting	12/04/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	19/04/2022	LFRMP Tidal Barrier meetings.	Continued ongoing consultation with ABP.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Virtual Meeting	19/04/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	03/05/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	10/05/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	22/05/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	24/05/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	31/05/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	21/06/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	28/06/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	05/07/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Discussion on Site	14/07/2022	ABP informed BB they only have 5 parking bays, if they go over these will be charged at £60.00 parking ticket.	Continued ongoing consultation with ABP.
Virtual Meeting	02/08/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	09/08/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	23/08/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	30/08/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	05/09/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	13/09/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	20/09/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	27/09/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	04/10/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	11/10/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	25/10/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	01/11/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	08/11/2022	LFRMP ABP Catch Up.	CF to share details of tidal barrier consultation for ABP to share with their tenants.
Virtual Meeting	22/11/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	29/11/2022	LFRMP ABP Catch Up.	Continued ongoing consultation with ABP.
Virtual Meeting	20/01/2023	Discuss the Tidal Barrier, LEEF and Sizewell C, their timelines and how they interact with each other.	
Virtual Meeting	27/01/2023	To discuss location of compound. To discuss timeline with Gull Wing and Sizewell C.	Possible location for compound suggested and updated on timelines for other projects in area.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Meeting	10/02/2023	Agenda; Heads of terms, reserved rights, compound strategy, boat yard marina acquisition, bandstand pier maintenance and use during construction and channel possession times.	Draft Heads of Terms to be produced by ESC. Verbal agreements regarding lease of lands for barrier construction phase.

Log of engagement with the Royal Norfolk and Suffolk Yacht Club (RNSYC):

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Meeting	29/05/2015	RNSYC engagement.	Outlined initial plans but some concerns which should be ironed out as progress more defined.
Letter	23/09/2015	Scope/Stakeholder Engagement.	Letter from SB to Anthony Knights about the stage and situation of the project.
Meeting	10/12/2015	Scope discussion.	Feedback into the scope of work and also gained a better understanding of concerns.
Meeting	16/03/2016	Identified and agreed sites for southern works.	Discussion about potential for demountable defences. Further engagement needed. Meeting to be arranged with project manager and Charles Schelpe
Email	12/04/2016 - 19/04/2016	Ground Investigations.	Outlook email conversation between Joanne Norris, Anthony Knights and SB.
Meeting	21/06/2016	Meeting to begin discussions about possible locations and type of defences to be used at the yacht club.	Continued ongoing consultation with RNSYC.
Email	05/07/2016	Scope/Stakeholder Engagement.	Email exchange between SB and Anthony Knights.
Meeting	19/09/2016	Meeting to discuss ground investigations timetable and required access.	Continued ongoing consultation with RNSYC.
Meeting	25/10/2017		
Email	11/01/2017 - 16/01/2018	Scope/Stakeholder Engagement.	Outlook email conversation between Anthony Knights, Lucy Williams, Bill parker and Phil Ford.
Meeting	12/03/2018		
Meeting	22/03/2018	Flood Walls LFRMP meeting.	Continued ongoing consultation with RNSYC.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Meeting	06/08/2018	Flood walls and other concerns.	Continued ongoing consultation with RNSYC.
Meeting	04/11/2018	Risk, methodology and wall alignment.	Discussion of working period extension and construction methodology.
Meeting	23/01/2019	Discuss concerns.	Continued ongoing consultation with RNSYC.
Meeting	22/02/2019	Heads of Terms.	Continued ongoing consultation with RNSYC.
Meeting	21/01/2020	Ground Investigations.	Continued ongoing consultation with RNSYC.
Meeting	21/01/2020	To discuss the Ground Investigation scope, programme and potential impacts.	RNSYC acceptance of the ground investigation works.
Meeting	13/03/2020	Ground Investigation programme and update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	06/04/2020	Ground Investigation update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	15/05/2020	Ground Investigation update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	21/05/2020	Ground Investigation update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	11/06/2020	Ground Investigation update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	18/06/2020	Ground Investigation update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	25/06/2020	Ground Investigation update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	02/07/2020	Ground Investigation update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	09/07/2020	Ground Investigation update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	16/07/2020	Ground Investigation update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	16/07/2020	Ground Investigation update.	Continued ongoing consultation with RNSYC.
Virtual Meeting	10/12/2020	Awning Design, Package 2 design and Heads of Terms.	Continued ongoing consultation with RNSYC.
Virtual Meeting	20/01/2021	LFRMP RNSYC Catch Up.	Continued ongoing consultation with RNSYC.
Virtual Meeting	04/08/2021	LFRMP RNSYC Catch Up.	Continued ongoing consultation with RNSYC.
Virtual Meeting	07/09/2021	LFRMP RNSYC Catch Up.	Continued ongoing consultation with RNSYC.
Virtual Meeting	27/09/2021	LFRMP RNSYC Catch Up.	Continued ongoing consultation with RNSYC.
Virtual Meeting	15/11/2021	RNSYC Tidal barrier Update.	Continued ongoing consultation with RNSYC.
Telecom	26/11/2021	Telephone call – RNSYC regarding media article.	Call to RNSYC to smooth things over re. negative article – they had not seen it but appreciated the call.
Virtual Meeting	09/12/2021	Lowestoft FRMP – RNSYC Flood Walls Agreement.	Continued ongoing consultation with RNSYC.
Virtual Meeting	13/12/2021	RNSYC Temporary and Permanent gate discussion.	Continued ongoing consultation with RNSYC.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Virtual Meeting	09/03/2022	ESC/RNSYC Meeting.	Continued ongoing consultation with RNSYC.
Meeting	04/07/2022	Discussion around options for RNSYC if the construction window for the barrier was extended to all year round working.	RNSYC remain supportive of the project but will not consider closing the club for any period of time and will only agree to works that allow the club to remain open.
Email	05/07/2022	Email thread RNSYC re. VAT status and ABP lease agreements.	Continued ongoing consultation with RNSYC.
Email	05/07/2022	Email to RNSYC to arrange follow up meeting.	Continued ongoing consultation with RNSYC.
Email	14/07/2022	Email to RNSYC re. VAT status, third party negotiations (ABP), Programme, canopy cost/ design and gate plan.	Continued ongoing consultation with RNSYC.
Email	19/07/2022	Email to RNSYC following up on call confirming outstanding points re. tidal barrier legal agreements.	Continued ongoing consultation with RNSYC.
Email	01/08/2022	Email to RNSYC checking in re. Legal Agreements.	Continued ongoing consultation with RNSYC.
Email	05/08/2022	Email to RNSYC checking in re. Legal Agreements.	Continued ongoing consultation with RNSYC.
Meeting	08/08/2022	Meeting with Jeremy and Richard (RNSYC) regarding flood wall legal agreements.	Concerned about siting of possible/ future crane and pumping/ fuel tanks. ND informed RSNYC that ESC would not contribute to any works for the crane/tank foundation but we could look at a clause which gave them the right to explore any foundations next to the wall foundation with ESC having a right to say no, or yes, if the engineers with adequate PI and experience could prove that this does not compromise the flood wall foundations.
Email	12/08/2022	Email to RNSYC from BDB Pitman re. outstanding points and construction drawings.	Continued ongoing consultation with RNSYC.
Email	18/08/2022	Email from RNSYC confirming brick acceptance.	Continued ongoing consultation with RNSYC.
Email	13/09/2022	Email from RNSYC re. Condition Photos.	Continued ongoing consultation with RNSYC.
Email	30/09/2022	Email to RNSYC re. temporary parking.	Continued ongoing consultation with RNSYC.
Email	30/09/2022	Email to RNSYC re. legal agreements.	Continued ongoing consultation with RNSYC.

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Email	07/10/2022	Email to RNSYC re. arranging meeting in preparation for the 21/10 workshop.	Continued ongoing consultation with RNSYC.
Email	10/10/2022	Email to RNSYC re. Visualisation viewpoint for Jacobs	Continued ongoing consultation with RNSYC.
Email	10/10/2022	Email to RNSYC re. Visualisation viewpoint for Jacobs	Continued ongoing consultation with RNSYC.
Meeting	15/11/2022	Meeting with RNSYC to discuss TWAO legal agreement, Yacht Club concerns and mitigation	Discussion of impact and mitigation on functionality - full minutes available.
Meeting	24/01/2023	Meeting to discuss the heads of terms.	Discussed will be issued shortly.

Log of engagement with navigation users:

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Fishermen	Virtual Meeting	03/03/2021	Meeting to discuss movement of fishermen's containers for period of 18 months for construction of tidal walls.	Further meeting to finalise details.
Fishermen's Mission	Virtual Meeting	11/05/2021	Mission and Flood Defence Catch Up.	Continued ongoing consultation with Fishermen's Mission.
ABP Marine Users	Meeting	16/12/2022	Engage ABP marine users including fishermen at their Marine meeting.	Presentation on the project and tidal barrier consultation.
Excelsior Trust	Meeting	04/01/2023	Meeting with Jon Wylson Vice President Excelsior Trust - Chairman Lowestoft Harbour Maritime Businesses Group.	Discussion of impact of works on the Heritage Pontoon as part of the TWAO, including maintaining access and future plans.
Lowestoft Inshore Fishing Fleet Association	Meeting	24/01/2023	Engage the Lowestoft Inshore Fishing Fleet Association with the barrier and any impacts.	Fishermen raised query re. compensation for inconvenience with tidal walls. Will reach out to colleagues based in the Inner harbour who will be impacted by channel closure. Negligible impact from barrier works on themselves, will remain on contact database.
Navigation Users	Email	30/01/2023	Providing stakeholders who may be impacted by works navigationally with the opportunity to meet with the project team and discuss concerns and mitigation.	Invites sent 30/01/2023 to potentially impacted organisations. Chased 03/02/2023.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Lowestoft Marina	Telephone Call	06/02/2023	Rang Mr Must at Lowestoft Marina in response to an email which raised concern around dealing with the project.	Mr Must had issues around dredging with ABP and planning at ESC. SB explained how the barrier works and how it will increase capacity in Lake Lothing. He left happy and thanked SB for the call.
MTB 102 Trust	Email	08/02/2023	In response to invitation to meet to discuss impact of 4-5 x 3-week channel closures.	Informed from MTB102 Trust point of view "construction and fitting of the barrier will not be a problem. The only aspect of concern to us is the tide height that the Barrier will be closed at. I believe this is still being discussed. Whatever is decided will probably mean that we have to look at methods of keeping the water out of our boat shed, but I guess that will be our problem."
Ben Falat (Royal Yachting Association, Norfolk and Suffolk Boating Association, Oulton Broad Parish Councillor)	Meeting	09/02/2023	Navigation user consultation re. increased potential channel closures to 4-5 x 3-week durations.	BF highlighted the importance of ensuring channel closure does not coincide with Yarmouth closure, advised private boat users are largely seasonal.
Excelsior Trust	Meeting	09/02/2023	Navigation user consultation re. increased potential channel closures to 4-5 x 3-week durations.	JW highlighted Trust takes bookings for the following season in the October prior, so as much notice as possible. The ship needs to pass through the channel once in March and once in November. Important not to miss/ be delayed in November

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
				as vital maintenance works take place to ensure the ship can continue to run.
Oulton Broad Water Sports Centre	Meeting	09/02/2023	Navigation user consultation re. increased potential channel closures to 4-5 x 3-week durations.	Occasionally requires navigation of the channel. Any channel closures will need communicating with as much notice as possible.
Mutford Lock	Meeting	09/02/2023	Navigation user consultation re. increased potential channel closures to 4-5 x 3-week durations.	Advised most traffic through the Lock does not go out to sea. Advised navigation users in Brundle (Broadland Cruising Club), Broom, the Norfolk Yacht Agency, DNR Marine and Broadlands Holiday Park will need engaging.
SMS Marine	Meeting	09/02/2023	Navigation user consultation re. increased potential channel closures to 4-5 x 3-week durations.	Concerned about loss of business during the channel closures. They have big lead times so will need to know when closures will happen with as much notice as possible. Mentioned having the closures over weekends will help trade. Interested in becoming a subcontractor on the project. Discussed moving some of their operations to the outer harbour during closures.
Sheader Marine/ Lowestoft Yacht Services	Meeting	09/02/2023	Navigation user consultation re. increased potential channel closures to 4-5 x 3-week durations.	Largely supportive of the project and pragmatic around any closures, doesn't think channel closures/ change to navigation will have a big impact. Highlighted the importance of good communication when it comes to warning of the channel closures.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
				Mentioned the current difficulty of exiting the Broads via Great Yarmouth and potential issues if the channel is closed at the same time as Great Yarmouth being blocked.
Broads Authority	Meeting	09/02/2023	Navigation user consultation re. increased potential channel closures to 4-5 x 3-week durations.	<p>Outlined the current challenges with Great Yarmouth and that everything currently goes in and out via Mutford Lock. Hopeful the Haven Bridge will be sorted in the next few months, Braden Bridge more complex, but the Haven is the lower bridge.</p> <p>Highlighted the importance of being able to get through Great Yarmouth during the 3-week closure.</p> <p>Outlined key locations for bigger boatyards in the Broads who might be affected by channel closures – offered to share details.</p> <p>Happy to share information relating to closures to Broads users, mentioned these communications will need to be clear and straightforward (suggested maps with arrows) as some of the users are not experienced mariners.</p> <p>Broads Ecology team would like sight of the EIA.</p>
Lowestoft Marina	Email	22/02/2023	Response to communication informing stakeholder database of 4-5 x 3-week channel closures.	Shared their view “ABP are putting up barriers to the local area”.
Lowestoft Cruising Club	Email	06/03/2023	<p>Requested information regarding:</p> <ul style="list-style-type: none"> The club’s calendar of annual events (typical and any future planned special events). 	David Bennett from the Cruising Club provided an interim response with the caveat a new commodore would be elected at upcoming AGM.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
			<ul style="list-style-type: none"> The number of vessels moored on club moorings. Details of typical club trips – destination, typical routes, number of vessels taking part and how often they take place. 	<ul style="list-style-type: none"> Club's calendar of events has not yet been set – advised it had not yet returned to pre-covid levels. 71 berths – vacant berths in the summer are used for visiting vessels. Pre-Covid up to 4-5 cruised per year, approx. 10 vessels per cruise. Individuals also cruise. Mainly between April and October. Raised points regarding input into the Gull Wing development consent order – concerned that leisure vessels were not adequately represented there, hopes this is not the case for LFRMP.

Log of engagement with emergency responders:

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
RNLI	Email	08/01/2018 - 23/01/2018	Scope/Stakeholder Engagement.	Email conversation between Henry Carter, SB and Jehangir Nawaz discussing the alignment of the floodwalls and access during construction.
RNLI	Email	08/02/2018	Scope/Stakeholder Engagement.	Email from Jehangir Nawaz to Henry Carter with the key points from a meeting on the 7th Feb 2018.
RNLI	Email	24/05/2018	Scope/Stakeholder Engagement.	Email from SB to Henry Carter about the stage of the LFRMP and to arrange a meeting for the following month.
RNLI	Meeting	02/06/2018		Complete.
RNLI	Meeting	14/06/2018	Wall alignment and construction methodology.	Complete.
Suffolk Resilience	Workshop	05/05/2021	LFRMP Tidal Walls Deployment Workshop Development.	Workshop to further the tidal flood walls deployment plan.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Forum (SRF)				
Blue Light Responders	Workshop	14/05/2021	LFRMP tidal Walls Deployment Plan Blue Light Responders Workshop.	Workshop to further the tidal flood walls deployment plan.
RNLI	Virtual Meeting	11/12/2021	RNLI Catch Up.	Continued ongoing consultation with RNSYC.
SRF	Workshop	07/08/2022	Workshop to discuss deployment plan for permanent demountable defences once construction is complete.	Workshop to further the tidal flood walls deployment plan.
RNLI	Email	10/12/2022	Email from Henry Carter regarding access.	RNLI content access is maintained to the South Pier for emergency services and RNLI. Distributed information to relevant organisations. Appreciated continuing support.

Log of engagement with Lowestoft regeneration/ infrastructure projects:

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
WDC Economic Development Team	Internal Engagement	07/05/2016	Presentation at team meeting.	Information shared and ongoing.
WDC Coastal Community Team	Internal Engagement	07/01/2017	Presentation at team meeting.	Information shared and ongoing.
Gull Wing	Meeting	16/01/2017	Joint meeting with Third Crossing team and ABP to discuss potential areas of commonality	Completed next meeting to be set for 3 months.
Gull Wing	Meeting Minutes	11/01/2017	Third Crossing navigation working group meeting notes.	Information shared and ongoing.
WDC	Consultation	25/01/2017 - 08/03/2017	Consultation SEA Environmental Report preferred options.	Information shared through project website.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
WDC Economic Development Team	Meeting	10/04/2017	Meeting with key WDC planners and economic development team to understand business value and local plan.	Information sharing.
WDC Economic Development Team	Meeting	06/05/2017	Meeting with key WDC planners and economic development team to understand business value and local plan.	Information sharing.
Gull Wing	Meeting	05/06/2017	Workshops and meetings with Lowestoft 3rd Crossing team.	Information shared and ongoing.
Lowestoft Town Centre Masterplan	Workshop	06/06/2017	Economic Development workshop with Wayne Hemmingway MBE.	Information shared and ongoing.
Lowestoft Town Centre Masterplan	Workshop	10/06/2017	Economic Development workshop with Wayne Hemmingway MBE.	Information shared and ongoing.
Lowestoft Town Centre Masterplan	Workshop	08/07/2017	Economic Development workshop with Wayne Hemmingway MBE.	Information shared and ongoing.
Gull Wing	Meeting	26/07/2017	Workshops and meetings with Lowestoft 3rd Crossing team.	Information shared and ongoing.
Gull Wing	Meeting	31/08/2017	Workshops and meetings with Lowestoft 3rd Crossing team.	Information shared and ongoing.
Gull Wing	Meeting	22/09/2017	Workshops and meetings with Lowestoft 3rd Crossing team.	Information shared and ongoing.
Gull Wing	Meeting Minutes	05/01/2018	Third Crossing navigation working group meeting notes.	Information shared and ongoing.
Anglian RFCC	Meeting	16/05/2018	Presentation about the project at the Anglian RFCC conference.	Information shared and ongoing.
Gull Wing	Meeting	03/09/2018	Workshops and meetings with Lowestoft 3rd Crossing team.	Information shared and ongoing.
Lowestoft Town Centre Masterplan	Meeting	18/12/2019	Lowestoft Town Centre and Coast Protection Measures.	Integrating LFRMP with other projects being delivered by ESC in Lowestoft.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Lowestoft Transport Infrastructure Plan	Meeting	14/02/2020	Lowestoft Transport Infrastructure Plan meeting.	Integrating LFRMP with other projects being delivered by ESC in Lowestoft.
Regeneration Employment Zones	Virtual Meeting	23/03/2020	Regeneration Employment Zones Sites Steering Group.	Integrating LFRMP with other projects being delivered by ESC in Lowestoft.
Regeneration Employment Zones		17/04/2020	Regeneration Employment Zones Sites Steering Group.	Integrating LFRMP with other projects being delivered by ESC in Lowestoft.
Lowestoft Town Centre Masterplan	Workshop	01/09/2020	Lowestoft Town Centre Masterplan Stakeholder workshop.	Information shared and ongoing.
Gull Wing	Virtual Meeting	18/09/2020	Liaison Meeting.	Information shared and ongoing.
Gull Wing	Virtual Meeting	12/11/2020	Liaison Meeting.	Information shared and ongoing.
Gull Wing	Virtual Meeting	06/12/2020	Liaison Meeting.	Information shared and ongoing.
Gull Wing	Virtual Meeting	01/12/2021	Liaison Meeting.	Information shared and ongoing.
Gull Wing	Virtual Meeting	31/03/2021	Liaison Meeting.	Decided to invite contractors to next meeting to coordinate traffic management.
Gull Wing	Virtual Meeting	27/05/2021	Liaison Meeting.	Farrans in attendance, BB unable to attend.
Heritage Action Zones	Virtual Meeting	25/11/2021	HAZ team introduced to LF by Maggie @ CAS. LF to organise meeting to discuss collaboration with HAZ teams and BB/CPE.	Regular meetings to take place starting in the new year to share info.
Heritage Action Zones	Virtual Meeting	11/01/2022	Meeting with Lowestoft HAZ team about other projects happening in Lowestoft.	Agreed to catch up regularly and ensure communication channels open between teams.
Gull Wing	Virtual Meeting	19/07/2022	Liaison Meeting.	Gull Wing team to investigate the possibility of sharing their programme with the ESC LFRMP team.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
ESC Landscaping Team	Email	01/11/2023	Email exchange with ESC landscaping team re. expected appearance of tidal barrier plant rooms.	Landscaping team agreed with the assumptions presented.

Log of engagement with Lowestoft businesses/ community organisations:

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Lings	Meeting	20/04/2015	Lings engagement.	Lings concerned about progress of the project and wanted information. Outlined project progress and reassured that we would keep them informed and involved as the project progresses.
Chamber of Commerce	Event	02/01/2016	Presentation to the Neptune Business Club (Waveney and Lowestoft Chamber of Commerce)	Continued ongoing consultation with the Lowestoft and Waveney Chamber of Commerce.
Business Engagement	Business engagement workshop	22/02/2016	Over 25 businesses (some representing groups of businesses such as the tourism group).	Very positive meeting. Business advisory group formed and alternative wall alignment identified. Meeting set up with ABP to discuss this.
Chamber of Commerce	Meeting	07/01/2017	To review progress and input into project.	Workshop to further the tidal flood walls deployment plan.
Chamber of Commerce	Meeting	15/02/2017	To review progress and input into project.	Continued ongoing consultation with the Lowestoft and Waveney Chamber of Commerce.
Suffolk Coast Forum	Meeting	09/05/2018	Quarterly meeting with organisations, local coastal and estuary group representatives of local communities.	Information shared and ongoing.
Lowestoft Town Council	Meeting	22/09/2017	To review progress and input into project.	Continued ongoing consultation with the Lowestoft Town Council.
Lowestoft Town Council	Meeting	08/07/2018	To review progress and input into project.	Continued ongoing consultation with the Lowestoft Town Council.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Suffolk Coast Forum Conference	Conference	09/07/2018	Quarterly meeting with organisations, local coastal and estuary group representatives of local communities.	Information shared and ongoing.
Suffolk Coast Forum	Meeting	12/10/2018	Exhibition stand for the project. Display and information about the Flipside Festival Watertight words project.	
Suffolk Coast Forum	Meeting	08/11/2018	Quarterly meeting with organisations, local coastal and estuary group representatives of local communities.	Information shared and ongoing.
Suffolk Coast Forum	Meetings	13/06/2019	Quarterly meeting with organisations, local coastal and estuary group representatives of local communities.	Information shared and ongoing.
Suffolk Coast Forum	Meeting	02/07/2019	Quarterly meeting with organisations, local coastal and estuary group representatives of local communities.	Information shared and ongoing.
Suffolk Coast Forum	Meeting	13/11/2019	Quarterly meeting with organisations, local coastal and estuary group representatives of local communities.	Information shared and ongoing.
Suffolk Coast Forum	Meeting	03/09/2020	Quarterly meeting with organisations, local coastal and estuary group representatives of local communities.	Information shared and ongoing.
Jeld-Wen	Engaging vacant site owners	30/09/2020	Engaging Jeld-Wen site owner re: land value mapping.	Current radio silence.
Property Landowners	Virtual Meeting	26/03/2021	Property Landowners Group meeting. Raise awareness of project with major landowners in Lowestoft.	Meeting with property landowners to introduce them to the project and hear any concerns they may have.
Shop Mobility	Site Meeting	25/07/2022	Meeting with Hazel at Shop Mobility to discuss installation of vibration monitors inside shop ahead of next phase of works.	Follow up email sent 29/7/22 - BBK and Ben Ayling went to install monitors and agreed location with Hazel inside the shop. Noise monitors installed outside on lamp post.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Chamber of Commerce	Email	05/12/2022	Email to Richard Perkins asking to share consultation materials with chamber of commerce contacts.	Richard Perkins to share widely with Chamber of Commerce contacts and mentioned at Christmas meeting.
Lowestoft Town Council	Email	27/01/2023	Emailed to understand any events planned that overrunning tidal wall works might impact.	Possibility of additional plaque unveiling later in the year, will be in touch if works are still ongoing.
Lowestoft Town Council	Email	30/01/2023	Provided information re. the anniversary of 1953 flood.	Plaque unveiling taking place on the South Pier 31/01/23. Ensured works will not disrupt.

Log of engagement with businesses/ organisations impacted by the tidal flood walls:

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Scottish and Southern Electricity (SSE)	Meeting	19/03/2015	SSE engagement.	SSE concerned with the implications of work on the outer harbour. Wanted evidence of impacts and highlighted their position in terms of viability to remain in Lowestoft if the cost of staying dry is prohibitive. Wanted to be involved in future studies. Rebecca Clough will be involved in scoping out outer harbour study.
Sembmarine SLP (SLP)	Meeting	28/05/2015	SLP engagement.	SLP very positive about the project. Not concerned about flood risk in outer harbour as have adapted their own working processes but have expressed a desire for demountable walls outside their fabrication site in Hamilton Dock. Would like to be considered for design and build of gates.
ABP / SLP / SSE / RNSYC	Meeting	10/12/2015	Scope discussion.	Feedback into the scope of work and also gained a better understanding of concerns.
SPR	Meeting	06/02/2018	Scope/Stakeholder Engagement.	Complete

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Scottish Power Renewables (SPR)	Email	22/02/2018	Scope/Stakeholder Engagement.	Email from Troy Doherty to SB and TP about a meeting taking place 3 working days later with SSE and SPR.
SPR	Email	28/02/2018	Scope/Stakeholder Engagement.	Email to SB Concerning the location of the SPR site entrance on Hamilton Rd., Inc. the position of a new substation.
Harry Levy	Email	20/03/2018	Scope/Stakeholder Engagement.	Email from SB to Ben Purkiss, Troy Doherty and others explaining that South Pier had changed ownership.
Harry Levy	Email	20/03/2018	Scope/Stakeholder Engagement.	Email from SB to Matthew Deith to introduce him to the LFRMP.
Harry Levy	Email		Scope/Stakeholder Engagement.	Email from Ben Purkiss to Matthew Deith to offer the relevant documentation to the company.
BM Autos	Meeting	22/03/2018	Stakeholder Engagement.	Stakeholder Meetings - Reference made to BM Autos, otherwise, nothing else found.
SPR	Email	09/05/2018 - 24/05/2018	Scope/Stakeholder Engagement.	Email Conversation between Troy Doherty, SB and Steven Hodger about an update on the LFRMP.
SSE	Programme	11/05/2018	Scope/Stakeholder Engagement.	Tidal Barrier programme 18-05-08 PDF file.
SSE	Programme	11/05/2018	Scope/Stakeholder Engagement.	Flood Wall prog revised constraint 18-04-24 Rev A March Start PDF file.
Harry Levy	Email	24/05/2018	Scope/Stakeholder Engagement.	Email from SB to Matthew Deith to send documentation to him to explain the location of the floodwalls.
Harry Levy	Email	24/05/2018 - 30/05/2018	Scope/Stakeholder Engagement.	Email conversation between SB and Roger Etchells discussing concerns about the project.
SLP	Email	24/05/2018 - 24/07/2018	Scope/Stakeholder Engagement.	Email conversations between SB, Paul Thompson, Gavin Crisp, Phil Church and Troy Doherty about updates and the logistics of the LFRMP.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Kwik Fit	Email	01/06/2018	Scope/Stakeholder Engagement.	Email from Ben Purkiss to SB, with attachments containing the freehold and leasehold registers and plans.
SPR	Email	01/06/2018 - 05/06/2018	Scope/Stakeholder Engagement.	Email conversation between SB and Steven Hodger about a meeting on the 13th or 14th June 2018, and timescales for construction.
SLP	Meeting	14/06/2018	Wall alignment and construction methodology.	Continued ongoing consultation with SLP.
BM Autos	Meeting	15/06/2018	Discussion of Land Ownership in Hamilton Road.	Continued ongoing consultation with BM Autos.
Kwik Fit	Email	20/06/2018	Scope/Stakeholder Engagement.	Email from Troy Doherty to SB and TP concerning a contract.
Kwik Fit	Meeting	20/06/2018	Scope/Stakeholder Engagement.	Continued ongoing consultation with Kwik Fit.
Harry Levy	Email	23/07/2018 -24/07/2018	Legal Agreements.	Email conversation between SB and Matthew Deith concerning Heads of Terms and looking around the premises.
Kwik Fit	Letter	24/07/2018	Scope/Stakeholder Engagement.	PDF file containing the plan for the flood walls and demountable defences at Hamilton Rd and Battery Green Rd.
Kwik Fit	Letter	24/07/2018	Scope/Stakeholder Engagement.	PDF file of a letter, outlining Kwik Fit's centre manager's contact details, along with the area manager.
SLP	Email	27/07/2018	Scope/Stakeholder Engagement.	Email conversation between SB, Paul Thompson, Gavin Crisp and Colin Yaxley, concerning legal agreements.
Waveney Fork Trucks	Letter	10/08/2018	Scope/Stakeholder Engagement.	Waveney Fork Trucks 18.10 Word Document - Letter to the director (But with BM Autos underneath the addressee).
SPR	Email	18/09/2018 - 25/09/2018	Scope/Stakeholder Engagement.	Updated drawings for the Hamilton Rd. SPR entrance and where utilities for it are to be put.
Kwik Fit	Letter	18/10/2018	Scope/Stakeholder Engagement.	Letter from SB to the Property Team at Kwik Fit to establish who it the freeholder.
Kwik Fit	Email	30/11/2018	Scope/Stakeholder Engagement.	Email from Matthew Packford to SB about the freehold of the Kwik Fit site.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
SPR	Email	30/11/2018 - 03/12/2018	Scope/Stakeholder Engagement.	Email Conversation between Anna Burbidge, Steven Hodger and SB about the location of a new substation.
Kwik Fit	Letter	12/06/2018	Scope/Stakeholder Engagement.	Digital Letter sent to Capital Property Company Ltd. By SB concerning Kwik Fit Freehold.
SLP	Meeting	29/06/2020	Scope/Stakeholder Engagement.	Continued ongoing consultation with SLP.
Kwik Fit	Virtual Meeting	13/07/2020	Q&A session with Kwik Fit owner.	Continued ongoing consultation with Kwik Fit.
Kwik Fit	Virtual Meeting	24/07/2020	Kwik Fit discussion.	Continued ongoing consultation with Kwik Fit.
SPR	Virtual Meeting	17/08/2020	Hamilton Road Flood Walls Discussion.	Continued ongoing consultation with SPR.
SSE	Virtual Meeting	10/09/2020	Tidal Wall SSE Update Meeting.	Continued ongoing consultation with SSE.
SLP	Virtual Meeting	13/11/2020	LFRMP Ground Investigation Works at SLP.	Continued ongoing consultation with SLP.
On a Roll	Discussion on Site	21/03/2021	On a Roll informed BB he isn't happy that no one has contacted him from ESC and he is losing money fast and if it doesn't get better he will go to the press.	BB have informed ESC.
SPR	Virtual Meeting	22/03/2021	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
SSE	Virtual Meeting	25/03/2021	Package 1 Tidal Flood Wall Works – SSE Update.	Continued ongoing consultation with SSE.
Kwik Fit	Site Meeting	28/05/2021	Discussion of Proposed Construction Methodology and operational Constraints.	Continued ongoing consultation with Kwik Fit.
SPR	Virtual Meeting	08/06/2021	PMP Meeting.	Continued ongoing consultation with SPR.
SLP	Virtual Meeting	04/08/2021	SLP Catch Up.	Continued ongoing consultation with SLP.
Nexen Group	Site meeting	11/08/2021	Legal Agreement Meeting.	Continued ongoing consultation with Nexen Group.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
SPR	Meeting	03/09/2021	Programme update.	Provided programme update of the works in their entrance.
SLP	Site Meeting	08/10/2021	To ascertain what was running where through the chambers in the end of Hamilton Road.	Continued ongoing consultation with SLP.
Kwik Fit	Virtual Meeting	12/10/2021	Kwik Fit Legal Agreement discussion.	Continued ongoing consultation with Kwik Fit.
Kwik Fit	Meeting	27/10/2021	BB requested access to lift a manhole lid in the Kwik Fit carpark on the 27/10, BB also requested that BB have access for 1hr on the 2/11 to lift and enter the manhole.	Given access to lift the manhole on the 27/11/21 to do a quick visual inspection.
Kwik Fit	Email	27/10/2021	BB emailed Kwik Fit to request permission to access the manhole in the carpark for approx. 1 hr to allow for a maned entry and inspection of the chamber.	Continued ongoing consultation with Kwik Fit.
Kwik Fit	Meeting	27/10/2021	To discuss the Kwik Fit access to ensure BB are covered to enter their car park and lift the manhole lids, as well to chase the SPR gas loadings to allow Cadent to progress the diversion works to SPR further.	ESC confirmed a verbal agreement would be ok from Kwik Fit but if I could follow up with an email to them just to confirm.
SLP	Virtual Meeting	05/11/2021	LFRMP SLP Catch Up.	Continued ongoing consultation with SLP.
BM Autos	Virtual Meeting	18/11/2021		Continued ongoing consultation with BM Autos.
Kwik Fit	Site Meeting	02/12/2021	BB requested access to lift the manhole lid in their carpark. Also asked about the power supply to the light column in their car park.	AG mentioned that someone had been out to look at the distribution board and told them that the light column is no longer connected.
Nexen Group	Virtual Meeting	14/01/2022	LFRMP Legal Agreements.	Continued ongoing consultation with Nexen Group.
SPR	Virtual Meeting	18/01/2022	LFRMP Tidal Walls on Hamilton Road (SPR entrance).	Continued ongoing consultation with SPR.
Kwik Fit	Virtual Meeting	25/01/2022	Lowestoft FRMP ESC/Kwik Fit Discussion.	Continued ongoing consultation with Kwik Fit.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
SPR	Virtual Meeting	01/02/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
SPR	Virtual Meeting	08/02/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
SPR	Virtual Meeting	15/02/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
Member of public	Email	17/02/2022	Barrier fell down on the car at Waveney Road - 12:00pm and has scratched his car.	TF to call Mr Revell to talk about the complaint.
On a Roll	Discussion on Site	17/02/2022	On a Roll concerned of loss of business and having to lay off staff - asked if any compensation available - not from BB and raised with ESC.	ESC to arrange meeting with On a Roll.
BM Autos	WhatsApp	21/02/2022	Observations reported asbestos sheets blown off BM Autos building and landing in the TM closure.	Raised to ESC via WhatsApp to report to BM Autos.
On a Roll	Discussion on Site	21/02/2022	On a Roll informed BB they would like to talk to ESC regarding loss of income.	ESC to contact On a Roll.
SPR	Virtual Meeting	22/02/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
Member of public	Telecom	25/02/2022	Received a complaint alleging that your works are causing a house to vibrate at a level which is causing the occupant concern and anxiety.	TF called stating the piling works are complete at ABP entrance and contacted Laurie O'Callaghan confirming the same.
SPR	Virtual Meeting	01/03/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
SPR	Virtual Meeting	05/03/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
On a Roll	Discussion on Site	07/03/2022	On a Roll asked BB regarding ESC missing a meeting.	ESC to contact On a Roll.
SPR	Virtual Meeting	08/03/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
On a Roll	Site Meeting	08/03/2022	Jon Stockwin and Tilly Reader went to see On a Roll with Craig and they let him know that TP was coming to see him Thursday and wanted to apologise for not coming on Friday.	TP is going to see On a Roll on Thursday.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
On a Roll	Meeting	10/03/2022	ESC project team met with On a Roll for an update.	On a Roll mentioned Clarets excavator reverse beacon is very loud and asked if we could do anything about it.
SPR	Virtual Meeting	15/03/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
On a Roll	Discussion on Site	16/03/2022	On a Roll unhappy they still haven't heard from the Council.	ESC to contact On a Roll.
SPR	Virtual Meeting	29/03/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
On a Roll	Discussion on Site	04/04/2022	On a Roll unhappy – haven't had any contact from AECOM or ESC - the debris netting had to be taken down and they had to shut down early Thursday and Friday due to dust.	BB have put the debris netting back up.
SPR	Virtual Meeting	05/04/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
SPR	Virtual Meeting	12/04/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
SPR	Virtual Meeting	19/04/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
SPR	Virtual Meeting	26/04/2022	LFRMP Tidal Walls on Hamilton Road.	Continued ongoing consultation with SPR.
On a Roll	Discussion on Site	05/05/2022	Unhappy with lack of communication from ESC – there was regular contact that has now stopped.	ESC to contact On a Roll.
John Grose	Virtual Meeting	05/05/2022	<p>John Gross Meeting to discuss works in front of Kwik Fit and how this will impact John Gross access on Hamilton Road. Informed:</p> <ul style="list-style-type: none"> we have an approx. start date of June and works are for 6 months. the road closure is required due to the proximity of the junction (legal requirement) Kwik Fit has an alternative access while we construct. 	<ul style="list-style-type: none"> John Gross is still open sign (black on yellow) direct to Whapload Road access (black on yellow) sign at exit on Newcombe Road to get back to Whapload Road (black on yellow) Provide TM drawings (issued to Jon Stockwin) Provide onsite contacts.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
			<ul style="list-style-type: none"> JG will be fully protected by the end of the year to a 1:200-year flood (if we start in June 22) – legal agreement dependant (by ESC) 	<ul style="list-style-type: none"> Balfour Beatty will put up Heras fencing with mesh covers along the line of the construction works. John Grose asked whether ESC would reduce business rates for the period of construction and ESC will respond to this query.
On a Roll	Discussion on Site	18/05/2022	Unhappy with lack of communication from ESC.	ESC to contact On a Roll.
On a Roll	Telecom	27/05/2022	BB call with On a Roll whereby they have been complaining about the lack of contact recently surrounding the claim for compensation and have stated again that they will be forced to close within a month.	ESC to contact On a Roll.
On a Roll	Discussion on Site	15/06/2022	Spoke to BB - unhappy with lack of communication from ESC – threatening legal proceedings.	ESC to contact On a Roll.
On a Roll	Letter	23/06/2022	BB hand delivered a letter regarding access to remediate crack in the ceiling.	BB informed access was denied until compensation was granted – On a Roll has also been taking videos during construction of BB working.
On a Roll	Discussion on Site	29/06/2022	On a Roll have spoken with ESC.	Meeting organised.
On a Roll	Telecom	04/07/2022	Rang for update for the cracks in the floor.	ESC to contact On a Roll.
Kwik Fit	Email	15/07/2022	Email from Kwik Fit following deployment plan workshop.	Queries responded to by project team.
Member of public	Email	28/07/2022	Email query re. footpath closure on Waveney Road	Replied explaining why the footpath needed to be closed, the diversion in place and when it is likely to reopen.
On a Roll	Discussion on Site	07/11/2022	On a Roll have complained to BB regarding black top, noise and dust.	ESC to contact On a Roll.
On a Roll	Meeting	08/11/2022	Meeting with On A Roll on site to discuss ongoing compensation claim with ESC.	BB advised On a Roll business owner that we were visiting to check in with him and advise

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
				that BB are unable to discuss or comment on the compensation claim beyond any works that might effect On A Roll at the moment.
Member of public	Telecom	19/12/2022	Complaint submitted to our 24/7 helpline about a noisy worker on site on Saturday 17 December. Customer lives opposite Yacht Club and concerned as partner is a night worker.	Follow up phone call with customer and investigation into who site worker was and issue raised with them. Request not to have that person working on site again. Customer happy with outcome.
Member of public	Telecom	04/01/2023	Complaint submitted to our helpline over Christmas about unsafe fencing and damage done to member of public's coat.	Damaged fencing removed and replaced. Replacement coat ordered for member of public.

Log of engagement relating to utility/ service providers:

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Highways England	Meeting	18/10/2017	Meeting with KGAL and Highways England to discuss design work.	Continued ongoing consultation with Highways England.
Cadent Gas	Meeting	23/03/2018	Cadent Gas pipe design review.	Continued ongoing consultation with Cadent Gas.
Utility Companies	Meeting	28/11/2018	Scheme designer presentation to allow utility companies to provide costed options for diversions.	Continued ongoing consultation with utility companies.
Anglian Water	Meeting	19/03/2019	Scheme proposal and forward planning.	Continued ongoing consultation with Anglian Water.
UKPN	Meeting	19/03/2019	Scheme Proposal and forward planning.	Continued ongoing consultation with UKPN.
BT	Meeting	19/03/2019	Scheme proposal and forward planning.	Continued ongoing consultation with BT.
Essex & Suffolk Water	Meeting	19/03/2019	Scheme proposal and forward planning.	Continued ongoing consultation with Essex & Suffolk Water.
Highways England	Meeting	27/03/2019	Meeting with Highways England.	Continued ongoing consultation with Highways England.
Suffolk Highways	Meeting	01/04/2019	Discussion of Traffic Management Plans and Temporary Works.	Continued ongoing consultation with Suffolk Highways.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Anglian Water	Meeting	12/04/2019	Scheme proposal and forward planning.	Continued ongoing consultation with Anglian Water.
UKPN	Meeting	20/06/2019	Scheme proposal and forward planning.	Continued ongoing consultation with UKPN.
UKPN	Virtual Meeting	03/01/2020	To progress with the details of the diversions required.	Progress made on the details and approvals needed.
UKPN	Virtual Meeting	04/01/2020	UKPN Progress meeting.	Discussion of BB works around the Hamilton Rd Substation; Planning for diversion of UKPN assets in Hamilton Rd; Discussion of remaining C4s in progress.
BT	Email	W/C 27/01/2020	Approach BT Group with benefits assessment.	Regional and national contacts identified.
Openreach	Email	W/C 03/02/2020	Approach Openreach with benefits assessment.	National contacts identified.
British Gas	Email	W/C 03/02/2020	Approach British Gas with benefits assessment.	National contacts identified.
Cadent Gas	Email	W/C 03/02/2020	Approach Cadent with benefits assessment.	Local contacts identified.
National Grid	Email	W/C 03/02/2020	Approach National Grid with benefits assessment.	National contacts identified.
UKPN	Email	W/C 03/02/2020	Approach UK Power with benefits assessment.	Local, regional contacts identified.
Highways England	Email	W/C 03/02/2020	Chase previous bid with Highways England.	Local, regional and national contacts identified.
Network Rail	Email	W/C 03/02/2020	Approach Network Rail with benefits assessment.	Regional and national contacts identified.
Anglian Water	Meeting	04/02/2020	To discuss the scope and details of the utilities investigations AW need to do.	Progress made on progressing the requirements.
Essex & Suffolk Water	Virtual Meeting	06/02/2020	Essex & Suffolk Water Progress Meeting.	Progress on diversions; plan for disconnections; proposed design from offset wall.
Anglian Water	Email	W/C 17/02/2020	Approach Anglian Water with business case.	Local contacts already engaged.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Anglian Water	Meeting	19/02/2020	To further discuss the scope and details of the utility investigations AW need to do.	Progress made on progressing the requirements.
Anglian Water	Virtual Meeting	04/03/2020	Anglian Water Progress Meeting.	Actions from previous meeting; Anglian Water progress; Jacobs update; Balfour Beatty update.
Anglian Water	Virtual Meeting	08/03/2020	Anglian Water Progress Meeting.	Discussion of trial hole programme, road closures, GPRS survey, AW review of Work Package Plans. Planning for trial holes including consents.
Anglian Water	Virtual Meeting	18/03/2020	To progress with the details of the utility investigations AW need to do.	Progress made on progressing the requirements.
Anglian Water	Virtual Meeting	20/03/2020	Anglian Water Progress Meeting.	Actions from previous meetings, Anglian Water progress, design update, Balfour Beatty update.
Anglian Water	Virtual Meeting	27/03/2020	Anglian Water Progress Meeting.	Discussion: COVID-19 arrangements, actions from previous meetings, Anglian Water progress, design update, Balfour Beatty update.
Anglian Water	Virtual Meeting	09/04/2020	Anglian Water Progress Meeting.	Actions from previous meeting; Anglian Water progress; Jacobs update; Balfour Beatty update; Financial update.
Anglian Water	Virtual Meeting	17/04/2020	Anglian Water Progress Meeting.	Actions from previous meeting; Anglian Water progress; Jacobs update; Balfour Beatty update; Financial update.
Openreach	Virtual Meeting	20/04/2020	BT Openreach Progress Meeting.	C4s, Payments, Trial Holes, Land Entry requirements, Wayleaves, COVID restrictions, working arrangements for diversion works.
Anglian Water	Virtual Meeting	24/04/2020	Anglian Water Progress Meeting.	Actions from previous meeting; Anglian Water progress; Financial update.
Anglian Water	Virtual Meeting	07/05/2020	Anglian Water Progress Meeting.	Anglian Water site investigation / trial holes update; Balfour Beatty works update.
Anglian Water	Virtual Meeting	14/05/2020	Anglian Water Progress Meeting.	Anglian Water site investigation / trial holes update; Commercial update.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Anglian Water	Virtual Meeting	29/05/2020	Anglian Water Progress Meeting.	Trial hole update; Rising Main tracing; Manhole investigations; Balfour Beatty Trial Holes; Commercial update.
Anglian Water	Virtual Meeting	05/06/2020	Anglian Water Progress Meeting.	Actions from previous meeting; Anglian Water progress; Jacobs update; Balfour Beatty update; Financial update.
Anglian Water	Virtual Meeting	12/06/2020	Anglian Water Progress Meeting.	Trial holes; Rising Main tracing; Manhole investigation; BB trial holes; Commercial.
Anglian Water	Virtual Meeting	19/06/2020	Anglian Water Progress Meeting.	Trial holes; Rising Main tracing; Commercial.
Anglian Water	Virtual Meeting	26/06/2020	Anglian Water Progress Meeting.	Actions from previous meeting; Anglian Water progress; Jacobs update; Balfour Beatty update; Financial update.
Anglian Water	Virtual Meeting	03/07/2020	Anglian Water Progress Meeting.	Anglian Water site investigation / trial holes update; Commercial.
Openreach	Virtual Meeting	09/07/2020	Openreach Catch Up.	Continued ongoing consultation with Open Reach.
Anglian Water	Virtual Meeting	10/07/2020	Anglian Water Progress Meeting.	Anglian Water site investigation / trial holes update.
Anglian Water	Virtual Meeting	17/07/2020	Anglian Water Progress Meeting.	Anglian Water site investigation / trial holes update; Jacobs design update, Balfour Betty update; Commercial update.
Openreach	Virtual Meeting	23/07/2020	Openreach Catch Up.	Continued ongoing consultation with Open Reach.
Anglian Water	Virtual Meeting	24/07/2020	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	24/07/2020	Anglian Water Progress Meeting.	Anglian Water site investigation / trial holes update; Jacobs design update, Balfour Betty update; Commercial update.
UKPN	Virtual Meeting	27/07/2020	UKPN Progress meeting.	Discussion of works on South Pier. Realignment of wall on Waveney Rd - 11kv diversion is not allowed; Discussion of works in Hamilton Rd..

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Anglian Water	Virtual Meeting	31/07/2020	Anglian Water Progress Meeting.	Site investigation results; Works required for Package 1 - Hamilton Rd and Waveney Rd; Works required for Package 2 – Station Square and South Pier.
Openreach	Virtual Meeting	06/08/2020	Openreach Catch Up.	Continued ongoing consultation with Open Reach.
Anglian Water	Virtual Meeting	07/08/2020	Anglian Water Progress Meeting.	Programme; AW approval of BB works in vicinity of AW assets; Works at Hamilton Rd; Asset protection during construction; C7 Variation.
Highways England	Virtual Meeting	09/08/2020	Supply Chain walkthrough/interfaces.	Continued ongoing consultation with Highways England.
UKPN	Virtual Meeting	19/08/2020	UKPN Progress meeting.	Team changes. Planning for site meeting. Funds transfer from location 2 to Location 3. Hamilton Rd C4 Offer Letter issued.
Openreach	Virtual Meeting	20/08/2020	Openreach Catch Up.	Continued ongoing consultation with Open Reach.
Anglian Water	Virtual Meeting	20/08/2020	Anglian Water Progress Meeting.	Programme; AW approval of BB works in vicinity of AW assets; Crossing points; Permanent works in Hamilton Rd.; Other actions from previous meetings.
Anglian Water	Virtual Meeting	28/08/2020	Anglian Water Progress Meeting.	Programme; AW approval of BB works in vicinity of AW assets; Crossing points; Permanent works in Hamilton Rd.; Other actions from previous meetings.
UKPN	Virtual Meeting	02/09/2020	UKPN Progress meeting.	UKPN did not attend. Discussion of ABP feeder pillar.
Openreach	Virtual Meeting	03/09/2020	Openreach Catch Up.	Continued ongoing consultation with Open Reach.
Anglian Water	Virtual Meeting	04/09/2020	Anglian Water Progress Meeting.	Programme; AW approval of BB works in vicinity of AW assets; Crossing points ; Permanent works in Hamilton Rd.; Other actions from previous meetings.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Openreach	Virtual Meeting	07/09/2020	BT Openreach Progress Meeting.	Easement agreements with ABP / SLP; Planning for Waveney Rd diversion; Progress on Hamilton Rd diversion.
Anglian Water	Virtual Meeting	11/09/2020	Anglian Water Progress Meeting.	Programme; AW approval of BB works in vicinity of AW assets; Works in Hamilton Road; Other actions from previous meetings.
Openreach	Virtual Meeting	17/09/2020	BT Openreach Progress Meeting.	Wayleaves: civils works in Station Square; civils works in Hamilton Road.
Anglian Water	Virtual Meeting	18/09/2020	Anglian Water Progress Meeting.	General update, AW Impact Plans; Assets in Hamilton Rd; Service Tunnel on South Pier; 1050 Surface Water outfall valve.
Anglian Water	Virtual Meeting	25/09/2020	Anglian Water Progress Meeting.	General update, AW Impact Plans; Assets in Hamilton Rd; Service Tunnel on South Pier; 1050 Surface Water outfall valve.
UKPN	Virtual Meeting	01/10/2020	UKPN Progress meeting.	Intro to new UKPN team. What to do with abandoned cables. Road closure in Waveney Rd. Route change in Hamilton Rd. Other queries, street lighting etc.
Openreach	Virtual Meeting	01/10/2020	BT Openreach Progress Meeting.	Wayleaves: civils works in Station Square; civils works in Hamilton Rd / SLP.
Anglian Water	Virtual Meeting	02/10/2020	Anglian Water Progress Meeting.	General update, AW Impact Plans; Assets in Hamilton Rd; Service Tunnel on South Pier; 1050 Surface Water outfall valve; Sealing system for crossing points.
Anglian Water	Virtual Meeting	09/10/2020	Anglian Water Progress Meeting.	General update, AW Impact Plans; Assets in Hamilton Rd; Service Tunnel on South Pier; 1050 Surface Water outfall valve; Sealing system for crossing points.
Openreach	Virtual Meeting	15/10/2020	Openreach Catch Up.	Continued ongoing consultation with Open Reach.
Anglian Water	Virtual Meeting	16/10/2020	Anglian Water Progress Meeting.	General update, AW Impact Plans; Assets in Hamilton Rd; Service Tunnel on South Pier; 1050 Surface Water outfall valve; Sealing system for crossing points.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Anglian Water	Site Meeting	16/10/2020	AW investigation on site into south pier tunnel.	AW insist there are no assets down the south pier tunnel that belong to them.
UKPN	Site Meeting	21/10/2020	UKPN site meeting.	Discussing Hamilton Road diversions.
Anglian Water	Virtual Meeting	23/10/2020	Anglian Water Progress Meeting.	General update, AW Impact Plans; Assets in Hamilton Rd; Service Tunnel on South Pier; Sealing system for crossing points.
UKPN	Virtual Meeting	29/10/2020	UKPN Progress meeting.	Confirmation of team roles. Planning for works on South Pier. Finalisation of works on Waveney Rd Payments for Hamilton Rd.
Anglian Water	Virtual Meeting	30/10/2020	Anglian Water Progress Meeting.	General update, AW Impact Plans; Assets in Hamilton Rd; Service Tunnel on South Pier; Sealing system for crossing points.
Anglian Water	Virtual Meeting	06/11/2020	Anglian Water Progress Meeting.	General update, AW Impact Plans; Assets in Hamilton Rd; Service Tunnel on South Pier; Sealing system for crossing points.
UKPN	Site meeting	11/11/2020	UKPN site meeting.	Discussing Hamilton Road diversions & UKPN/YC feeder pillar.
Anglian Water	Virtual Meeting	13/11/2020	Anglian Water Progress Meeting.	General update, AW Impact Plans; Assets in Hamilton Rd; Service Tunnel on South Pier; Sealing system for crossing points.
Anglian Water	Virtual Meeting	20/11/2020	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
UKPN	Virtual Meeting	26/11/2020	Lowestoft UKPN.	Continued ongoing consultation with UKPN.
Openreach	Virtual Meeting	26/11/2020	Openreach Catch Up.	Continued ongoing consultation with Open Reach.
Anglian Water	Virtual Meeting	27/11/2020	Anglian Water Progress Meeting.	Commercial / programme update; AW Impact plans; Design Issues; Service tunnel on South Pier; AWF07 1050 surface water outfall; AWF12 non-working flap valve.
UKPN	Virtual Meeting	29/11/2020	UKPN Progress meeting.	Planning for Works on South Pier, ownership of ABP feeder pillar, Works on Waveney Rd/Station Square; Works on Hamilton Rd.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Anglian Water	Virtual Meeting	04/12/2020	Anglian Water Progress Meeting.	Commercial / programme update; AW Impact plans; Design Issues; Service tunnel on South Pier; AWF07 1050 surface water outfall; AWF12 non-working flap valve.
UKPN	Virtual Meeting	08/12/2020	UKPN Liaison.	Continued ongoing consultation with UKPN.
UKPN	Telecom	09/12/2020	UKPN phone call with GM.	UKPN/YC feeder pillar.
UKPN	Virtual Meeting	10/12/2020	UKPN Progress meeting.	Planning for Works on South Pier, ownership of ABP feeder pillar, Works on Waveney Rd/Station Square; Works on Hamilton Rd.
Openreach	Virtual Meeting	10/12/2020	LFRMP Openreach Catch Up.	Continued ongoing consultation with Open Reach.
Anglian Water	Virtual Meeting	11/12/2020	Anglian Water Progress Meeting.	Commercial / programme update; AW Impact plans; Design Issues; AWF07 1050 surface water outfall; AWF12 non-working flap valve.
UKPN	Virtual Meeting	11/12/2020	UKPN Progress meeting.	Planning for Works on South Pier, Works on Waveney Rd/Station Square; Works on Hamilton Rd
UKPN	Site Meeting	11/12/2020	UKPN site meeting.	UKPN/YC feeder pillar.
UKPN	Virtual Meeting	07/01/2021	UKPN Progress meeting.	Planning for Works on Hamilton Rd. SLP proposals for new substation. Invoices and payments. South Pier, ownership of ABP feeder pillar, Works on Waveney Rd/Station Square, road closure.
Anglian Water	Virtual Meeting	08/01/2021	Anglian Water Progress Meeting.	Commercial / programme update; AW Impact plans; Design Issues; AWF07 1050 surface water outfall;
UKPN	Virtual Meeting	12/01/2021	Emails and phone calls regarding feeder pillar on South Pier.	UKPN/YC feeder pillar.
Anglian Water	Virtual Meeting	15/01/2021	Anglian Water Progress Meeting.	Commercial / programme update; AW Impact plans; Design Issues; AWF07 1050 surface water outfall.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
UKPN	Site Meeting	16/01/2021	UKPN site meeting.	Continued ongoing consultation with UKPN.
UKPN	Site meeting	18/01/2021	Site meeting on the south pier FP diversion.	UKPN diversion partially completed with SCC.
UKPN	Virtual Meeting	21/01/2021	UKPN Progress meeting.	Planning for Works on Hamilton Rd. SLP proposals for new substation. South Pier works complete. Works on Waveney Rd planned for March.
UKPN	Virtual Meeting	21/01/2021	LFRMP Openreach Catch Up.	Continued ongoing consultation with Open Reach.
Anglian Water	Virtual Meeting	22/01/2021	Anglian Water Progress Meeting.	Commercial / programme update; AW Impact plans; Design Issues; AWF07 1050 surface water outfall.
BT	Virtual Meeting	W/C 27/01/2021	Approach with benefits assessment.	Regional and national contacts identified.
Anglian Water	Virtual Meeting	29/01/2021	Anglian Water Progress Meeting.	Commercial / programme update; AW Impact plans; Design Issues; AWF07 1050 surface water outfall;
UKPN	Virtual Meeting	04/02/2021	UKPN Progress meeting.	Planning for Works on Hamilton Rd. SLP proposals for new substation. South Pier works complete. Works on Waveney Rd planned for March.
Anglian Water	Virtual Meeting	05/02/2021	Anglian Water Progress Meeting.	Commercial / programme update; AW Impact plans; Phase 2 Design.
Cadent Gas	Site meeting	18/02/2021	Site visit to discuss South Pier gas diversion.	Diversion route agreed, to enter building on East facing wall of arcade.
Anglian Water	Virtual Meeting	26/02/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
BT	Telecom	08/03/2021	To discuss slewing BT cables into sheet piles.	Approval from JS of BT that we can slew their cables into our piles.
Anglian Water	Virtual Meeting	05/03/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
UKPN	Telecom	08/03/2021	Top discuss slewing of UKPN cables into piles.	Agreed to meet on site to review this option.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
UKPN	Site meeting	11/03/2021	UKPN site meeting.	UKPN Waveney Rd diversions ch 216.
Anglian Water	Virtual Meeting	12/03/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	19/03/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	02/04/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	08/04/2021	LFRMP – Anglian Water Station Square ABP rising mains design.	Continued ongoing consultation with Anglian Water.
UKPN	Site meeting	08/04/2021	IS attended site to discuss the potential of slewing a cable into a pile to allow for continuous piling.	IS has requested that we expose more duct and to pile closer to the ducts and then contact UKPN for a revisit to review.
UKPN	Virtual Meeting	08/04/2021	LFRMP – Hamilton Road.	Continued ongoing consultation with UKPN.
Anglian Water	Virtual Meeting	09/04/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
UKPN	Virtual Meeting	15/04/2021	UKPN Progress meeting.	Continued ongoing consultation with UKPN.
Anglian Water	Virtual Meeting	16/04/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Openreach	Virtual Meeting	22/04/2021	LFRMP Openreach Update.	Continued ongoing consultation with Openreach.
Openreach	Virtual Meeting	28/04/2021	LFRMP Openreach Update.	Continued ongoing consultation with Openreach.
UKPN	Virtual Meeting	29/04/2021	UKPN Progress meeting.	Continued ongoing consultation with UKPN.
Anglian Water	Virtual Meeting	30/04/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Highways England	Virtual Meeting	02/05/2021	Lowestoft Tidal Walls – Traffic Management.	Continued ongoing consultation with Highways England.
Anglian Water	Virtual Meeting	07/05/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Anglian Water	Virtual Meeting	14/05/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	21/05/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	28/05/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	04/06/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	11/06/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	16/06/2021	SEW-11717 LFRMP Provision Call.	Continued ongoing consultation with Anglian Water.
Openreach	Virtual Meeting	16/06/2021	Openreach Catch Up.	Continued ongoing consultation with Openreach.
Anglian Water	Virtual Meeting	18/06/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	25/06/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	02/07/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	09/07/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
UKPN	Site meeting	09/07/2021	Meeting on site to oversee connection works to the Hamilton Road substation.	All works were completed and any issues that arose were dealt with on site.
Anglian Water	Virtual Meeting	16/07/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	23/07/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Cadent Gas	Site Meeting	23/07/2021	Cadent Site visit.	To discuss the Cadent Disconnections to BM Autos and the redundant SPR gas feeds.
Anglian Water	Virtual Meeting	30/07/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Anglian Water	Virtual Meeting	06/08/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Highways England	Virtual Meeting	10/08/2021	Section 278 Agreement – A47 Waveney Road discussion.	Continued ongoing consultation with Highways England.
Anglian Water	Virtual Meeting	20/08/2021	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	17/09/2021	Anglian Water Progress Meeting.	Further discussions on bridging of AW assets. AW requesting RAMS and vibration monitoring plans to allow for impact plans to be set up.
Openreach	Telecom	21/09/2021	Called JS to arrange for some additional duct and duct joints and bends for the CH295 BT diversion.	JS was able to supply additional bends and joints for us, a BB op had to collect them from Norwich Way.
Anglian Water	Virtual Meeting	01/10/2021	Anglian Water Progress Meeting.	AW Requesting RAMS for additional assets to allow for impact plans to be made for these assets.
UKPN	Site meeting	08/10/2021	To review slewing option for the UKPN power cable at Hamilton Road.	Discussed the option in depth, the plan was to cut the pile then slew the cable into the pile on 11/008/2021.
Anglian Water	Virtual Meeting	15/10/2021	Anglian Water Progress Meeting.	AW Requesting RAMS for additional assets to allow for impact plans to be made for these assets. AW also stating that it is down to BB to replace their NRV as we are doing the flood works here.
Anglian Water	Email	20/10/2021	Emailed AD to provide evidence of the faulty NRV on the AW assets in our works area.	This is to ensure that BB have evidence to prove that the valve was already faulty prior to us doing works in the area so BB are not held liable for replacing it.
Highways England	Virtual Meeting	26/10/2021		Continued ongoing consultation with Highways England.
Anglian Water	Virtual Meeting	26/10/2021	Anglian Water Progress Meeting.	Clarifying what is required by AW from BB and likewise what BB required from AW.
Cadent Gas	Email	26/10/2021	Emailed Cadent to extend the closing date of the diversion application we have with them.	The date has been extended to the 2/11 I also reiterated that this is a third party we are

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
				awaiting a response from, and I will keep Cadent updated.
Essex & Suffolk Water	Email	27/10/2021	Emailed CK of ESW to confirm that the water valve and cover on Hamilton Road is redundant, CK was able to attend site to have a quick look and confirmed that the cover and valve was redundant.	CK was able to attend site to have a quick look and confirmed that the cover and valve was redundant. I followed up the phone call to confirm that the valve/cover is redundant with an email for paper trail and confirmation.
Cadent Gas	Telecom	08/11/2021	Call to confirm the date Cadent will be getting their TM in place to allow for their disconnections.	Date was confirmed for the 29/08/2021 dependant on HE approval.
Anglian Water	Virtual Meeting	12/11/2021	Anglian Water Progress Meeting.	Review of assets and what is outstanding for AW/BB.
Essex & Suffolk Water	Virtual Meeting	19/11/2021	Weekly Stats meeting to review services on site	Reviewed Stats tracker to ensure all known services captured.
Anglian Water	Virtual Meeting	26/11/2021	Anglian Water Progress Meeting.	Review of assets and what is outstanding for AW/BB.
Essex & Suffolk Water	Virtual Meeting	26/11/2021	Weekly Stats meeting to review services on site	Reviewed Stats tracker to ensure all known services captured.
UKPN	Email	26/11/2021	Emailed PB to request for TR10 to be reinstated in its permanent position.	Starting the process to get MSF and UKPN to site to reinstate the light column.
Cadent Gas	Telecom	29/11/2021	I received a phone call from Gary Surplice to update me on the dwarf wall application I sent in to Cadent.	Gary stated he was happy for us to continue works with caution as the works only entailed removing and reinstating the wall.
Cadent Gas	Telecom	30/11/2021	I called GS who returned my call. The purpose was to ask GS if he could possibly assist with getting the SPR valve works moving without the need for Gas loadings.	GS has offered to assist where he can but it is not his department so can only try contact some colleagues that may be able to help. GS also asked to have a site visit to review the works above there main on station square
Cadent Gas	Site meeting	01/12/2021	Met with GS on site at Station Square and walked the area to review the works.	GS decided it was best to have a gas watcher in attendance but only for when we are demolishing the dwarf wall above Cadent's

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
				Asset, this consists of 2 No. locations (marked on plans in SIC room) CH B15 and CH B44
Essex & Suffolk Water	Virtual Meeting	01/12/2021	Essex & Suffolk Water Progress Meeting.	Plan for disconnections.
Anglian Water	Virtual Meeting	28/01/2022	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	02/08/2022	Meeting to Present 1050 valve option.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	11/02/2022	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	11/03/2022	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	25/03/2022	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	08/04/2022	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
Anglian Water	Virtual Meeting	22/04/2022	Anglian Water Progress Meeting.	Continued ongoing consultation with Anglian Water.
UKPN	Telecom	19/04/2022	Rang to inform IS of the dangerous works being carried out at BM Autos. IS forwarded my details to the UKPN fault team to deal with as his team was currently stood down.	Report passed to the faults team to send a operative to investigate.
UKPN	Telecom	19/04/2022	Laura of UKPN called me to arrange a visit from the faults team. An operative named Martin attended site to review.	Martin attended site and saw the works area in BM Autos and has covered the cables and made safe so that he can isolate and make safe the cables today.
Highways England	Virtual Meeting	02/09/2022	A47 Waveney Road FRM Scheme – Highways Discussion.	Continued ongoing consultation with Highways England.

Log of engagement relating to Fluvial and Pluvial works:

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Information circulated to distribution list	30/11/2015	Kirkley stream report.	Raise awareness of the project.
Information circulated to distribution list	12/01/2015	Kirkley flood update.	Raise awareness of the project.
Information circulated to distribution list	01/01/2016	Kirkley flood update.	Raise awareness of the project.
Information circulated to distribution list	09/01/2016.	Kirkley stream newsletter.	Raise awareness of the project.
Information circulated to distribution list	01/01/2017	Kirkley stream newsletter.	Raise awareness of the project.
Information circulated to distribution list	08/01/2017	Kirkley stream newsletter.	Raise awareness of the project.
Meeting	27/08/2017	Meeting with Cotman residents.	Raise awareness of the project.
Virtual meeting	19/09/2017	Meeting of relevant members of project team for information sharing.	Meetings by Skype to update on progress and next steps.
Virtual meeting	31/10/2017	Meeting of relevant members of project team for information sharing.	Meetings by Skype to update on progress and next steps.
Meeting	08/11/2017 - 09/11/2017	Nicki China discussions with Mr Meadows around potential options at Carlton Colville.	Raise awareness of the project.
Letter	23/11/2017	PLP consultation letter and questionnaire sent to residential properties.	1st letter.
Virtual meeting	01/12/2017	Meeting of relevant members of project team for information sharing.	Meetings by Skype to update on progress and next steps.
Letter	10/01/2018	Nicki China, PLP consultation letter and questionnaire sent to residential properties.	2nd Letter.
Meeting	11/01/2018	Progress and Technical Meeting.	Raise awareness of the project.
Individual engagement methods	Late 01/2018 - Early 02/2018	Individual engagement with social housing providers to assess if they have housing in identified risk areas and confirmed willingness to be involved in the next process of the scheme.	All with property in risk areas are willing to be involved this includes Saffron homes, WDC housing, Broadland Housing, Flagship Homes

Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
			and Housing 21. Nicki China has list of contacts for those at risk / not at risk.
Meeting	19/02/2018	Nicki China meeting with Cotman housing around contribution to fluvial flood wall.	Continued and ongoing consultation with residents.
Event	31/07/2018	PLP engagement event to explain the next step in this element of the project. (Nicki China).	Continued and ongoing consultation with residents.
Meeting	19/09/2018	Residents evening meeting with fluvial / pluvial team regarding the fluvial flood wall.	Continued and ongoing consultation with residents.
Surveys	17/09/2018 - 21/09/2018	Initial PLP surveys with residents.	Continued and ongoing consultation with residents.
Meeting	27/08/2018	Meeting with residents of Cotman housing.	Continued and ongoing consultation with residents.
Surveys	24/09/2018 - 24/09/2018	Initial PLP surveys with residents.	Continued and ongoing consultation with residents.
Surveys	22/10/2018	Initial PLP surveys with residents.	Continued and ongoing consultation with residents.
Email	06/12/2018	Overall project update to Stakeholder.	Continued and ongoing consultation with residents.
Report	12/01/2019	Written report to residents and published on SCC website.	Continued and ongoing consultation with residents.
Meeting	17/10/2019	Velda Close risk reduction meeting with the Environment Agency.	Continued and ongoing consultation with the Environment Agency.
Meeting	07/01/2020	LFRMP/Kirkley Regeneration Study.	Continued and ongoing consultation with residents.
Media Article	08/3/2020	Velda Close/ Kirkley Stream construction start, wider LFRMP mention.	EDP.

Log of engagement relating to social value:

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Lowestoft Rising	Meeting	20/03/2017	Watertight Words meeting to involve community / schools.	Information sharing.
Flipside	Meeting	21/08/2017	Flipside update to share Watertight Words work.	Information sharing.
Ormiston Denes Academy	Meeting	01/11/2017	Meetings planned with school to progress filming work and vision in 2019.	Continued engagement with Ormiston Denes Academy.
Schools	Event	17/11/2017	Local schools competing to design a project to raise awareness of coastal and flooding issues.	Ormiston Denes overall winners for money to buy filming equipment and carry out their vision. Meetings planned with school to progress work in 2018.
Flipside	Meeting	21/02/2018	Flipside update to share Watertight Words work.	Information sharing.
Flipside	Meeting	01/03/2018	Flipside update to share Watertight Words work.	Information sharing.
Flipside	Engagement	01/04/2018 - 30/06/2018	Flipside Festival (Watertight words project).	Over 1,000 school children involved in a literacy-based project to add artwork to engraved flood defence walls.
Flipside	Launch event	28/06/2018	Flipside Festival (Watertight words project).	Over 1,000 school children involved in a literacy-based project to add artwork to engraved flood defence walls.
New Anglia Local Enterprise Partnership (NALEP)	Virtual Meeting	07/10/2020	Virtual meeting to discuss strategy for engaging schools for duration of the project.	Agreed to create a 'resource bank' for schools through the project. Videos, presentations, 'careers and coffee' YouTube, The Source for jobs, engagement with NEETs, Icanbea etc.
The Attic PRU	Virtual Meeting	14/12/2020	Virtual meeting to discuss approach to engagement with pupils at The Attic PRU.	Plan was discussed for 2021 - including assembly support, careers guidance and work experience placement for 1no. pupils circa 1 day per week on site when site is set up early 2021.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Speakers for Schools	Virtual Meeting	11/01/2021	Meeting to discuss organising virtual work experience for circa. 20 Lowestoft students via online Speakers for Schools platform in February half term.	Agreed to support 20 virtual placements - input from team required to formalise the placement plans. 3 placements were achieved - 7 students applied, 3 joined.
Shaw Trust	Virtual Meeting	03/02/2021	Following apprenticeship webinar at East Coast College, the Shaw Trust got in touch with LF to arrange introductory meeting.	Working Group has been set up with Shaw Trust, CPE, Farrans who are constructing Gull Wing. Purpose is to share best practice, collaborate on social value initiatives and achieve social value add for Lowestoft and its young people.
East Coast College	Virtual Meeting	08/02/2021	Lizzie Forbes & Sam Phillips to present on apprenticeships live webinar to students of East Coast College on 8 Feb 2021 as part of National Apprenticeship Week.	Presentation given to 30 students live on Zoom with more joining on demand. Shaw Trust have been in touch as a result of the webinar about engaging NEETs.
Women in Construction	Virtual Meeting	12/05/2021	Joined virtual presentation on WiC programme.	Also mentioned chain person roles we are recruiting through DWP.
East Coast College	School Visit	10/06/2021 - 11/06/2021	Apprenticeship Presentations – East Coast College.	105 students attended the presentations over two days. Event filmed for wider engagement.
NALEP	Virtual Meeting	22/06/2021	Meeting (virtual) - Luke Utterly, enterprise advisor re. Schools engagement	LU to share details of events with his contacts.
NALEP	Virtual Meeting	13/07/2021	Meeting (virtual) - Luke Utterly, enterprise advisor re. Schools engagement	LU to share details of events with his contacts.
King Solomon Academy	Virtual Meeting	06/08/2021	Tamzen and Zarah (work experience) Introduction.	Work experience placement taking place virtually as a result of Covid-19 restrictions. Information shared about the project and the different job roles working on the project.
East Coast College	School Visit	11/08/2021	Meeting to discuss work experience plans for academic year 2021/2022.	Students will apply for work experience placements citing their goals, so site team can tailor the placements for their needs.
NALEP	Virtual Meeting	17/08/2021	Luke Utterly, enterprise advisor re. Schools' engagement.	LU to share details of events with his contacts.
Under the Open Sky	Virtual Meeting	11/09/2021	Intro to Genevieve Rudd (Under the Open Sky)	BB to provide first aid kits for GR's programmes.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Community Action Suffolk	Virtual Meeting	30/09/2021	Meeting to discuss volunteering opportunities for site team and social value potential.	Discussed current projects. Some funding has ceased so LF details will be shared with partner organisations.
Norfolk and Suffolk Coast Forum Conference	Virtual Event	07/10/2021	Engage Schools in the project through virtual sessions curated and run by the project including a talk from an apprentice on the project and the launch of the Virtual Careers Fair (below).	Approx. 160 students attended from schools in Norfolk and Suffolk.
Schools	Virtual Careers Fair	07/10/2021	Virtual Careers Fair (launched at conference).	Launched due to restricted rules (COVID 19) to allow young people to learn about the project and find out about career opportunities. Analytics are used to help continue to shape the virtual room. In first 7 days 124 unique visitors and 1.4k page views. On 7/10 - 70 visitors, 500 page views. Average visit 11 mins.
RE-Utilise	Site Meeting	11/10/2021	LF introduced by John Wicks of East Coast College. Carol @ re-utilise runs community repaint scheme and craft workshops supporting community in Whapload Road.	LF investigated the purchase of racking to support Re-Utilise. Also planning to volunteer in warehouse to help sort donations and materials.
Prince's Trust	Virtual Meeting	13/10/2021	Discussion about supporting employability courses and PT programmes helping young people into work.	Discussed work experience on site. LF to organise for November. Mock interviews to be scheduled for mid-late November with LF supporting.
Community Action Suffolk	Site Meeting	14/10/2021	Meeting to discuss building repair works required to set up community pantry in Christ Church.	Quote from builder shared, discussed opportunities for engagement during project.
NALEP	Virtual Meeting	25/10/2021	Luke Utterly, enterprise advisor re. Schools activity.	Luke to invite Lowestoft schools to the activity in December and make connections with key players.
Prince's Trust	Site meeting	09/12/2021	Mock Interviews.	Session organised for 9 December for 3 people on Prince's Trust Teams programme.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Prince's Trust	Site Meeting	28/03/2022	Mock interviews	Session organised for 5 people on Prince's Trust Teams programme.
Peter Aldous MP	Briefing	14/04/2022	At the request of Peter Aldous MP.	Shared with SSG, KSG and LFRMP Board.
Access Community Trust	Virtual Meeting	19/04/2022	Meeting to discuss volunteering with Access Community Trust.	Proposed date of 10 June for painting Boston Lodge, a building used by ACT and other local organisations.
East Coast College	Event	27/04/2022	Careers Fair for Lowestoft Job Seekers.	CVs received to be passed onto subcontractors.
Heritage Open Days	Virtual Meeting	23/05/2022	Virtual meeting to include Lowestoft FRMP as part of the Heritage Open Days in the town in September 2022.	Agreed to take part. Copy written by CF & LF and submitted to HOD for website.
Mind the Gap	Virtual Meeting	08/06/2022	Phone call with Kim @ Mind the Gap, a Lowestoft charity supporting young people who might fall through gaps with employment support etc.	Work experience placement planned for July.
Access Community Trust	Site meeting	10/06/2022	Volunteering event for local social enterprise.	28 hours total volunteer hours which was £1,799.84 in added social value.
Prince's Trust	Telecom	13/06/2022	Phone call discussing work experience opportunities on the project from September onwards.	Georgina @ TPT to contact LF closer to time of next programme
Ormiston Denes Academy	School Visit	14/07/2022	LF & CF attended mock interview event at Ormiston Denes Academy	14 pupils supported.
Norfolk and Suffolk Coast Forum Conference	Hybrid Conference	13/10/2022	Schools section at Norfolk and Suffolk Coast Conference.	Video launching tidal barrier naming competition, apprentice talk, Virtual Careers Fair.
Dell Primary School	School Visit	17/10/2022	Primary School visit - talk about the project and interactive bridge building activity.	Approx. 56 children engaged.

Stakeholder	Activity	Date	Purpose / what are you looking to achieve?	What was achieved?
Benjamin Britten Academy	School Visit	17/01/2023	Visit school to engage 15 Y9 Geography students on the project, followed by visit to the South Pier.	Students and staff engaged - tidal barrier naming competition shared, and further site visit offered once walls are complete.
Suffolk One	Virtual Meeting	21/02/2023	Discussed possibility of taking part in careers event in March.	Potential to have some trainees go in later in the year.
Sir John Leman Academy	Virtual Meeting	24/02/2023	Discussed schools offer and work experience.	Pencilled in date in May for site visit.



LOWESTOFT

FLOOD RISK MANAGEMENT PROJECT

Appendix 2. Communications plan (inc. stakeholder analysis)

Lowestoft Flood Risk and Coast Management Strategy

Communications and engagement plan

Author and revisions	
Sharon Bleese (author)	Resilient Coastal Communities and Businesses Manager/Strategic Communications Lead
Alysha Stockman	Partnerships and Engagement Support Officer (revisions)
Sharon Richardson	Senior Partnerships and Engagement Advisor (revisions)
Charlotte Flight	Engagement Officer (revisions)

Version	Date
V15.	28.2.23

Sign off/for information

Name	Organisation	Sign off/information
Karen Thomas	Coastal Partnership East	Sign off
Matt Hullis	Suffolk County Council	Information
Jonathan Glerum	Anglian Water	Information
Philip Ridley	East Suffolk Council	Information and comment
Tamzen Pope	East Suffolk Council/CPE	Information and comment
Tom Duit	Associated British Ports	Information and comment
Jonathan Rudd	New Anglia Local Enterprise Partnership	Information and comment
Aaron Dixey	Environment Agency	Information and comment
Cllr David Ritchie	East Suffolk Council/Project Board Chair	Information and comment
Nick Khan	East Suffolk Council Strategic Director	Information and comment

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5. Strategy for communications and engagement 5.1 Key messages 5.2 Audiences 5.3 Tactics
6. Resources

6.1 Budget
6.2 Branding
7. Evaluation and monitoring

1. Plan purpose and background

What is the purpose of this plan?

More targeted and meaningful engagement helps build longer-term trust with our stakeholders and publics. This can help significantly when potentially contentious issues arise, when we run wider consultations, and even with our wider coastal management responsibilities.

This communications and engagement plan specifically focuses our engagement on the development of a flood risk management project for Lowestoft that includes the reduction of risk from rivers and extreme rainfall and tidal defences; including flood walls and the introduction of a 40m tidal barrier. It aims to ensure that people inside and outside our organisation understand how engaging our stakeholders and publics is important in helping us make the right decisions for a sustainable solution for long-term management of flood risk in Lowestoft.

This plan should help guide the project team to spend our time and resources wisely, communicating with and engaging the right people about the right things, at the right time. As a result, we should be seen as an honest, transparent and efficient public body that communicates and achieves its purpose and priorities effectively.

Background

The Lowestoft Flood Risk Management Project will develop a way forward in managing flood risk from all sources, pluvial, fluvial and tidal, which will allow for the economic growth and regeneration of this coastal town. Primarily though, it will reduce the devastating impacts of flooding to people, homes and businesses. It will introduce measures to protect existing residential and commercial properties as identified in the Lowestoft Transport and Infrastructure Plan and improve Port infrastructure and access to the inner harbour.

This communication plan is being developed on behalf of Suffolk County Council and East Suffolk Council to promote project activities as initially described in the Lowestoft Flood Risk and Coast Management Strategy (LFR&CMS) and subsequently the Lowestoft Flood Risk Management Project.

The project completed preliminary investigations in 2014/15, confirming the need for and viability of a suite of flood protection works. These investigations improved understanding of all flood risks plus further investigation into the viability of a tidal barrier and associated protection works.

This plan sets out communications objectives, key milestones and activities that will form the basis of engagement with identified stakeholders and to publicise the strategy and project to a range of internal and external audiences. The intention then, is to develop an approach that will involve communities, businesses, organisations and schools in the project and through

their involvement, deliver a project which is understood and supported by those who live in, work in and visit Lowestoft.

2. Situation analysis

2.1 Analysis of current situation

To reflect the constraints and scope of what can and can't be influenced, particularly with reference to tidal flooding, and to support the formation of tools, techniques and tactics it is helpful to understand what is in scope and out of scope for engagement.

In scope	Out of scope
Siting and type of barrier	Formulae for Flood Defence Grant in Aid is fixed
Design and scope of all forms of defences (limited input)	Design and delivery should not limit access to and operation of the inner and outer harbour
Funding providers could influence options	There will be disruption during the course of the works. This will be mitigated and limited where it is possible but a project of this size and nature cannot be delivered without inevitable disruption.
Engagement, involvement and collaboration with stakeholders and publics that are directly affected by the proposed project	Links to the construction of the third crossing are likely to be out of scope but the project won't inhibit it and opportunities for collaboration fully explored.
Proportionate engagement with those not directly affected by the project in the interests of clarity and transparency.	Broader involvement and collaboration with those not directly affected by the proposed project will most likely be limited to inform in most cases.

Why do we want to work with the community and other stakeholders?

- To help people understand what the flood defence management scheme is and the true level of flood risk they face (both now and in the future)
- To explain the policy framework within which we are working to identify management options and develop the scheme
- To encourage public support for our recommended options and to avoid total adverse reactions
- To minimise public challenge to the outputs of the scheme
- To understand people's continuing concerns and where possible to provide responses to them within the final programme
- To follow guidance to consult

Why might the community and other stakeholders want to engage with us?

- To hear what the project team have to say.
- To make our sure our proposals are 'sustainable'.

- To understand how policy options have been determined and to ensure a level playing field.
- To seek reassurance that the necessary steps are being taken to protect their lives, homes and way of life.
- To remove risk of flooding by getting our commitment to maintain defences.
- To ensure views expressed are taken into account
- To challenge decisions of public bodies.
- To influence the project team to fully recognise the economic value of businesses as worthy of protection.
- To pressurise for more money to be made available from the Central Government, Environment Agency and the Council.
- To understand how they can contribute financially.
- To challenge / blame.
- To voice their views and change the outcomes.
- To demonstrate to others how they have influenced the project team.
- To understand if there are any alternatives.
- To identify any omissions or errors within the scheme and any planning applications

Observations and recommendations from this analysis

From this analysis we can see that the nature of the proposed project presents some challenges in terms of meaningful engagement. Particularly for the tidal works, there are constraints due to the fact that channel division is not possible and the nature of the barrier options available. However, the opportunities exist to engagement people through the process to raise awareness and understand concerns. Where it is reasonably possible and practical changes can be made to the method of construction and timing of construction. The social value delivered by the contract will also add to the sense of ownership and value that the project offers to communities and businesses in Lowestoft.

The work is necessary to protect Lowestoft from impacts similar to those experienced during the December 2013 tidal surge. The main affects and influence will be from stakeholders who are directly affected or can directly affect the proposed project. However, every effort will be made with our communications to ensure that the broader base is fully informed of the project and involved wherever possible. Particularly in the case of schools and colleagues in the area.

These findings will be reflected in our strategy and tactics for engagement and help to guide appropriate and proportionate engagement and resource allocation.

2.2 Analysis of stakeholders

The project aims to reduce the risk of flooding to Lowestoft from all sources, tidal, fluvial and pluvial. However, the nature of the work involved and the people involved means that it would be more beneficial to identify stakeholders and their interests separately: whilst maintaining the need for cross referencing of stakeholders throughout the project lifetime.

Key stakeholders – tidal element

Level of interest

→ High

Level of power

<p>Wind farm operators Rambles Association Cleveland boatyard Fisherman's Mission ICE Company (George Bunning) Mastersons LG Roberts Bus companies providing bus services Suffolk Police Coastguard (Maritime Coastguard Agency) Recreational users of South Beach</p> <p>Minimal effort</p>	<p>BFP (Eastern) Off Shore Group Newcastle Windcat Workboats Businesses (affected by potential construction and those flooded in 2013) Excelsior Trust Jeldwen site owners Nexen Media Residents (local to potential construction site and those flooded in 2013) Excelsior Trust Lowestoft Maritime Business Forum (john Wylson) Tourist Board Destination Management Organisation Marina Owners GPS Diving Proudman Oceanographic Dudmans RNLI Developers or potential developers (through economic development) Bird's Eye</p> <p>Keep informed</p>
<p>Claridge (Tank Farm) Network Rail The Crown Estate RSPB Suffolk Wildlife Trust English Heritage Essex and Suffolk Water Schools and colleges</p>	<p>CEFAS MMO Royal Yacht Association New Anglia LEP Lowestoft Cruising Club International Boat Building College Environment Agency Natural England Anglian Water Broads Authority Recreational River Users Commercial river users Broads Authority Associated British Ports Lowestoft Marina Gordon Haywood (Harbour Road jetty) Peter Colby Trinity House Defra Secretary of State Boston Putford Landowners Brookes Business Park RNSYC (yacht club) County and District Councillors Members of Parliament</p>

High

<p>Keep satisfied</p>	<p>NFFO (fishermans organisation) Transco Highways Agency Suffolk County Council East Suffolk Council Suffolk Chamber of Commerce Lowestoft Town Council Oulton Broad Parish Council</p> <p>Key players</p>
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Key interests and concerns – tidal element

The following key interests and concerns analysis is a supplementary exercise to support the tidal element of the project through the engagement which will be required for the Transport Works Act Order. This will provide additional support in helping the project team to understand what each stakeholder may see as their primary concerns and specific interests. The exercise benefitted from evidence and experience from similar projects elsewhere in the UK, for example the Ipswich Tidal Barrier and Boston Barrier.

Key player

Who	Interest	Concern
Royal Yacht Association and leisure users	Navigation – any adverse impacts and/or benefits to their boatyard	Negative impacts during construction and during operation once the gate is in place.
Broads Authority	Environmental impacts	Construction impacts, geomorphology of channel Environmental impacts upstream
Businesses, Associated British Ports and their customers	Adverse impacts and/or benefits to their business/operation/customers	Height of walls and changes to docks during construction. Longer term adverse effects Environmental impacts Impacts on Wind Energy projects using the harbour
Highways Agency	Impacts on their asset/need to protect their asset	Operation of gates on their asset Impacts on planning and installation on the third crossing
Associated British Ports	Strategic interest in navigation and environmental interests	Spoil disposal Operational concerns Impacts on their tenants Impact on the environment – will have conditions to add to any Transport Works Act

		Order and/or planning permission
UK Power Networks	Impact on their assets	Potential damage to assets during the construction
Landowners (potentially affected by the tidal works inc. walls)	Access to their land/assets. Potential blight/enhancements	Rights of access Long-term maintenance Long-term impacts Links to other schemes such as a Third Crossing

Keep satisfied

Who	Interest	Concern
Historic England	Grade 2 listed buildings around yacht club	Impact upon listed buildings. Will want to be consulted on conservations matters and listed buildings
Environmental bodies	Environment and conservation impacts upstream (hydraulic modelling) SPA	Construction impacts, geomorphology of channel Migration and release of contamination
Network Rail	Protecting their assets	Will the work will have any implications for their assets
The Crown Estate	Marginal interest	Disposal of material at sea

Key stakeholders – fluvial and pluvial element

Interest

Insurance Company Wider Community Local Recreation Clubs	Suffolk Wildlife Trust Utilities Meadow Priory School Environmental Interest Group IDB Emergency Services Lowestoft Tourism Group Businesses Kirkley Fen users/ fishermen Pakefield Riding School Lowestoft Vision Lowestoft Rising Suffolk Chamber of Commerce Oulton Broad Business Group
Minimal	Keep informed
Peter Aldous MP Media Natural England Highways England Broads Authority	District Councillors Ward Councillors House holders / residents – impacted by flooding Carlton Colville action group

County Councillors Hot Spot Communities (those not already mentioned) Land Owners (ABP)	Carlton Colville Town Council Landowner with short listed option on their land Residents of Colville Rd Kirkley Residents Association Kirkley Business Group SCC LLFA SCC Highways Aldwyck Way Housing Association Velda Close / Aldwyck Way Residents Tutorial Media Teams All Saints Road residents Cllr Matthew Hicks WDC Landowner (Meadow Park) Risk Management Authority Planning Authority Environment Agency Anglian Water Kirkley Stream Riparian areas Residents of The Street (Carlton Colville) RFCC LEP Lowestoft Town Council Oulton Broad Town Council
Keep satisfied	Key Players

Observations and recommendations from this analysis

Options for the project, whether tidal, fluvial or pluvial need to be technically feasible, economically viable and environmentally sound. We will share these options with the community but there will be elements where there is limited scope for people to influence or affect what can be achieved. We will need to closely manage expectations. There will also be the need to articulate these limitations clearly to those with whom we intend to involve and collaborate.

Ensuring that this project remains closely linked to other initiatives, plans and consultations in the area is also key, particularly the Gull Wing. We will also need to ensure that we link closely to Lowestoft Rising and the Lowestoft Transport and Infrastructure Plan.

The economic development and regeneration and planning teams are key internal links in terms of assisting to identify and unlock potential investment which would benefit the project.

3. Objectives

3.1 Business objective

The objective of the project is to reduce the risk to Lowestoft of all forms of flooding – tidal, fluvial and pluvial and vulnerability to coastal erosion. The project will protect existing homes

and businesses and support economic growth and development in the town alongside other potential infrastructure improvements identified in development in the Lowestoft Transport and Infrastructure Plan (LTIP).

3.2 Strategic communications objectives

Although, due to the scale of the project and resource available, the scope for significant participation and influence beyond those directly affected is limited, the overall impact of the project affects many people and businesses in Lowestoft. The project also links with other plans and aspirations for the area through the local plan, Lowestoft Rising and the Lowestoft Transport and Infrastructure Plan. Therefore, key strategic communications objectives are to:

- Raise awareness of the project, activities, what is achievable and limitations among partner staff (all levels), the media (including trade), key politicians and policy makers, stakeholders and the public.
- Through targeted involvement, unlock potential funding sources and contributions.
- Achieve a broad understanding and support for the project from partner staff (all levels), the media (including trade), key politicians and policy makers, stakeholders and the public.

3.3 Project team objectives

- To follow guidance to consult.
- To update key stakeholders and the local community on progress of the scheme's development.
- To explain the work we are doing.
- To demonstrate to people the long term risks.
- To make the community aware of what we can do, what we can't do and what might be possible (for example, what they can do).
- To help people understand what the scheme is and gain support.
- To help people understand and react to the true level of risk faced.
- To understand people's continuing concerns and do all that is possible to address these, to provide reassurance or explain what is or can/cant be done.
- To provide responses, as part of the planning process and Transport Works Act Order, to these concerns.

3.3 Communications plan objectives

The following communication plan objectives will be revisited and refined as the project progresses.

1. By 1st April 2022, we will have established and met with a Navigation Working Group, creating a forum in which concerns of marine users can be raised ahead of the Transport Works Act Order.
2. By 31st March 2023 we will have used a range of communications activities to continue to raise awareness in the community about the tidal flood wall works and associated disruption and have consulted them on the final options, construction methodology and implications ahead of preparation for the Transport Works Act Order.

3. By 31st March 2023, we will have used a range of communications to promote an understanding of the benefits of the tidal flood wall works to businesses and residents.
4. By 31st March 2023, we will ensure that over 60% of those surveyed in the community believe that the project is for the benefit of the community.
5. By 31st March 2023, we will have identified objections from the wider stakeholder groups and publics with relation to the Transport Works Act Order.
6. By 31st March 2023, we will have worked to overcome any objections from the wider stakeholder groups and publics that we have identified.
7. By 31st March 2023, we will have worked with local schools and colleges to facilitate a flood risk scenario activity, to help fulfil one of our Social Value KPIs and raising the profile of the project.

4. Communication risks and mitigating action

Trigger	Escalators	Impacts	Mitigating Action
Raised expectations of the ability to influence/change the scope of the project.	Failure to clearly communicate the limitations of influence during stakeholder engagement.	Lack of support and cooperation for project activities. Objections to the TWAO result in a public inquiry. Increased project costs due to delay. Reputational damage.	Open, honest and transparent communication which clearly sets out what is in scope and what is out of scope for change.
The project's objectives, process and communications are impacted by a change in politics or become part of the political debate.	Funding streams changed or cut. Lack of interest/ support for the project.	Project cannot be fully funded. Project paused or not completed. Increased costs due to delay.	Significant effort is made by all partners to ensure that the project remains politically neutral and that information is shared widely irrespective of party politics.
Stakeholders that are directly affected by the project are not sufficiently involved resulting in disagreement on the proposed project.	Insufficient stakeholder engagement. Poor/ unclear communication.	Lack of support and cooperation for project activities. Objections to the TWAO result in a public inquiry. Increased project costs due to delay. Reputational damage.	Sufficient opportunities are offered to get involved with the project and stakeholders can see where their feedback has helped shape the final outcome.

Negative media coverage.	Lack of correct information. Social media trolls.	Lack of support and cooperation for project activities. Possible pause to activities whilst problems resolved. Increased costs. Reputational damage.	Ensure broader engagement is sufficient. Inform media of progress in open, honest and transparent manner. Make sure CPE spokesperson available for radio, television and print media equipped with all key facts, figures and messaging. Employees to adhere to social media policy. Use social media monitoring and listening to detect negative changes in online conversation and identify potential risks. Include social media crisis plan as part of social media strategy.
Project is delayed as more time is needed for stakeholder engagement.	Opportunities for stakeholder engagement missed. Poor planning resulting in time lost.	Lack of support and cooperation for project activities. Project delayed resulting in funding loss. Increased costs due to project delay.	Ensure adequate time is built in the programme for communications and engagement including time needed to reflect and provide feedback on how views have shaped the final plan.
Strategy requirements to meet the demands of stakeholders directly affected are unaffordable.	Failure to identify unaffordable expectations resulting in missed opportunities in communications to manage expectations.	Lack of support and cooperation for project activities. Project delayed resulting in increased costs. Reputational damage.	Ensure communications manage expectations.
The funding gap for the tidal barrier remains open and there is little or no chance of this element of the project progressing.	Unsuccessful funding applications. Funding lost as a result of project delays.	Project delayed. Possible pause of project.	Open, honest and transparent communications led by the Leader of the Council, Member of Parliament and key partners, with next steps to and a clear policy for community safety.
Covid-19 restrictions impact upon the ability to engage stakeholders and	Insufficient effort is made to explore alternative	Lack of support and cooperation for project activities.	Suite of virtual engagement tools used to ensure that our engagement can still progress.

publics in the project development and construction.	engagement options. Virtual engagement options are not made accessible to those without access to the internet/ technology required.	Objections to the TWAO result in public inquiry. Increased project costs due to delay. Reputational damage.	Full accessibility considered and other methods of engagement such as postal used to ensure actions are inclusive. Media informed of the project progress including adherence to Covid-19 safe practices. Social media monitored and positive posts put out about project progress including adherence to Covid-19 safe practices.
Loss of key project staff.	Unable to access information. No alternative resources.	Unable to access project information. Project delayed. Increased costs.	All project information including documents, correspondence, emails etc to be saved on central location accessible by all project staff. Ensure IT department able to grant access to Sharepoint, Teams and email inboxes in event of problem. Project Manager to identify deputy when project planning. Any delay to be communicated with stakeholders
Technological failure.	Project information lost.	Increased costs. Project delayed. Reputational damage.	Ensure sufficient filing and back-up procedures are in place and adhered to.
Navigation Simulation Results lead to change in design, potentially increasing costs and changing impact on stakeholders.	Poor/ unclear communication. Opportunities for stakeholder engagement missed.	Lack of support and cooperation for project activities. Project delayed. Reputational damage. Increased costs.	Open, honest and transparent communications which clearly sets out how the design has changed and why.
Legal agreements for the tidal floodwalls are not agreed in time to meet programme.	Works stop (package 1) and/ or delayed (package 2)	Project delayed. Increased costs. Loss of reputation.	Keep in regular contact with project team to understand likelihood. Prepare key messages for this eventuality.
Supply chain issues lead to programme delays.	Works are delayed.	Project delayed. Increased costs. Loss of reputation.	Keep in regular contact with project team to understand likelihood and how exactly construction will be affected. Prepare key messages for this eventuality.

Tidal wall works programme over runs into the summer months	Works are disruptive and negatively affect tourism in the area.	Reputation loss, lack of support and cooperation for the project, loss of income for businesses, negative impact of tourism economy as a result of the project.	Keep in regular contact with the project team to understand the impact. Open, honest and transparent communications which clearly sets out potential impact with as much notice as possible.
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Mitigating action will be reliant upon which point in construction and phasing of the project has been reached. If a funding gap remains this could also be viewed as an opportunity to lobby Central Government.

Critical to this is public safety and the continued involvement of the Suffolk Resilience Forum and emergency planners remains essential as the project progresses.

5. Strategy for communications and engagement

5.1 Key messages

We are working in partnership to identify ways of reducing the risk of flooding from surface water, rivers and the sea for many years to come, taking in consideration all factors including climate change.

In December 2013 over 150 homes and businesses were flooded and Lowestoft was effected for many days after the tidal surge. The Lowestoft Flood Risk Management Project will provide valuable protection for people, homes and businesses for many years to come.

We will be exploring all forms of funding to help us to do this work.

Lowestoft is the only highly urbanised area in the UK without formal flood protection. This is infrastructure which is critical to support the economic growth and development of Lowestoft. It is also critical in reducing the risk to people, homes and businesses.

A robust approach to future flood protection will remove the obstacles to economic regeneration, protect existing property and commercial assets as identified through the Lowestoft Transport and Infrastructure Plan.

Through this project we want to unlock the potential for economic growth, in particular associated with tourism and inward investment from offshore development.

We want to stimulate development and creation of jobs by removing the barriers caused by having areas which are vulnerable to the risk of flooding.

Lowestoft is a strategic area nationally for the Wind Energy Projects, we are ensuring that the port stays operational throughout the key points of the year to enable their work to continue.

In December 2013 over many hundreds of homes and businesses were devastated by the East Coast tidal surge. With climate change and sea level rise a reoccurrence of these devastating consequences is inevitable.

Specific key messages and expansion relating to issues arising during construction will be developed as appropriate, for example as traffic management and noise issues arise during Ground Investigations or construction.

5.2 Audiences

1. Internal – Members, staff, working groups, partner organisation leaders/senior personnel.
2. Media - local media and trade press. National media where possible.
3. Key politicians/policy makers - county and district councillors, MPs, MEPs and relevant ministers. LGA officials.
- 4 General public, resident's groups, community groups, local businesses and business groups.
5. Other partner organisations, other local authorities.

5.4 Tactics

Inform

Social media and electronic media

- Twitter
- Facebook
- YouTube (potential for YouTube diaries and clips as work progresses)
- Instagram
- Website – a project website has been developed so that people can find information easily and to showcase individual elements of the project.
- Virtually engagement centre
- Virtual careers fair
- VR/AR tools to demonstrate the potential tidal barrier
- Film and film clips to capture social history and current views for use to drive SEO and develop social channels.

Traditional media

- Newspapers/radio/television
- A traditional media campaign is vital to ensure that all opportunities to inform those directly and indirectly involved are capitalized upon.

- Press releases and campaigns will be developed at specific points in construction, for example:

Phase 1.

- Ground breaking and completion for flood tidal flood walls
- Completion for fluvial/pluvial works
- Press invitation for property level protection launch
- Completion of the tidal walls project and barrier naming competition

Phase 2.

- Ground breaking for tidal barrier
- Programme of media involvement throughout project construction, at key points
- Completion and opening ceremony

Marketing opportunities

- Posting information on key partner and key group websites

This allows us to provide targeted information, for example, information important to businesses who may be seeking to invest/locate/identify key suppliers may be posted on the New Anglia website or in their regular ezine update. This could be repeated with parishes included in the strategy, using their local magazines, newsletters and parish websites.

- Signage and information boards

These could be placed at key sites to ensure that we are keeping local people up-to-date with the latest information, particularly in key areas of progress.

- Internal briefings

We would use these much the same as signage and information boards externally to ensure that key internal stakeholders are kept informed to progress.

- MP and local council briefings

To provide the same level of information as above.

- Newsletters

These will provide stakeholders with updates as the project progresses once construction on package 1 of the tidal flood walls has begun.

- SEO optimisation and development of social channels

Through the use of episodic film clips linked to social history, current views and forward look.

- East Anglian Coastal Conference

Marketing the project widely through this conference and through the live-streaming and hybrid approach to a wider geographical audience.

- LGA Coastal Special Interest Group

Marketing the project and best practice to local authorities across the UK

Information Gathering

Broad

Public engagement activities will be used to gather information as widely as possible from the community. This may include:

- Drop-ins
- Virtual Project Updates
- Social Media
- Virtual engagement information points and tools

Targeted

Targeted meetings with external and internal partners and colleagues will provide specific information needed to inform.

- Property Landowners Group formed to engage landowners beyond ABP.
- Bite size project updates for specific groups including Marine and Oulton Broad
- Section 5 and 6 stakeholders invited to request project update as needed.

Involve

The process of involving stakeholders who are key to the project is time consuming and therefore needs to be proportionate to the desired outcome.

The majority of this involvement is likely to be through face-to-face meetings but may also include:

- Workshops
- Focus groups (theme or location related)
- Business groups (topic related)

The above can also be applied to internal stakeholder. For the media, it may be appropriate to consider strategic press launches.

Collaborate

The nature of this type of engagement has less resource implications as the above in terms of frequency as it involves a smaller group of stakeholders who are coming together to achieve a specific outcome or decision. But the time taken with actions and outcomes should not be underestimated. This is also likely to then impact upon time and resource for more involvement with key stakeholders as actions and outcomes are taken forward. For example it will include:

- Project meetings such as the Strategic Flood Steering Group
- Specific topic meetings such as funding

6. Resources

6.1 Budget

A budget of £5,000 per project year has been allocated to delivering the communications and engagement activities from this project. This covers venue hire, materials etc. but does not cover resource. Additional funds have been allocated to reflect the need for virtual tools to combat the challenges presented by the global pandemic.

Engagement will be proportionate and appropriate with resource provided partners and where appropriate, supporting consultants. Communications planning and delivery will be managed and delivered, in the main part, by Coastal Partnership East. Engagement support will also be provided by the contractor as part of the design and build stage of the project.

6.2 Branding

Within standard guidelines of partners.

7. Evaluation and monitoring

The overall programme for evaluation outlines the criteria for judging what is effective. Below is set out the specific ways that we will measure success against our objectives, tackling these using three criteria:

- Awareness
- Acceptance
- Action

Timing is also crucial to the evaluation and monitoring process, building in enough time in our programme of engagement to reflect upon actions and to review and refresh if these are not delivering the outcome desired.

Awareness – this is linked to campaigns and questionnaire so evaluation would be linked to:

- Media coverage and calculation of media impressions for media campaigns
- Google analytics of social media response.
- Number of questionnaires returned for surveys (including consultation feedback)

Acceptance – this is linked to requests for information and expressing interest and support so evaluation would be linked to:

- Percentage of positive/neutral media coverage
- Google analytics of social media response
- Positive/neutral feedback from public consultation events and on-going enquiries
- Positive/neutral feedback from business and community advisory group

Action – this is a measurement of results so evaluation would be linked to:

- Limited/no objections to Transport Works Act Order (tidal works)
- Limited/no objections to planning applications (tidal walls/fluvial/pluvial works as appropriate)
- Local endorsement of fluvial/pluvial options and resulting work
- Positive media response/social media response to overall project

- Level of continued involvement of members of business and community advisory group

8. Communications Activity Plan

Date	Action	Audience	Responsible	Output/further action
29/01/2021	Strategic Steering Group Meeting	Strategic Steering Group Members	CF	
01/02/2021	Regular comms debriefs to evaluate feedback (mid-monthly)	Stakeholders, publics	LF/ CF/ SB	
23/02/2021	Key Stakeholder Group Meeting	Key Stakeholder Group Members	CF	A repeat of first meeting in 6 weeks; second meeting in 12 weeks. Set up meetings with property owners and navigation working group.

12/03/2021	Social Media Updates - weekly	Stakeholders, publics	CF	
26/03/2021	Property landowners Group Meeting	Property Landowners/ Landlords	CF	
06/04/2021	Key Stakeholder Group Meeting	Key Stakeholder Group Members	CF	
30/04/2021	Strategic Steering Group Meeting	Strategic Steering Group Members	CF	Meetings to be quarterly.
04/05/2021	Stakeholder and Publics workshop	Stakeholders, publics	CF	Attendance low – to be rebranded as bite size sessions with specific area of concern focus.

06/05/2021	Stakeholder and Publics workshop	Stakeholders, publics	CF	Attendance low – to be rebranded as bite size sessions with specific area of concern focus.
10/05/2021	Stakeholder and Publics workshop	Stakeholders, publics	CF	Attendance low – to be rebranded as bite size sessions with specific area of concern focus.
21/05/2021	Ground breaking Physical event withing Covid restrictions and live stream	Stakeholders, publics	LF/ CF / SB	

24/05/2021	Virtual Engagement goes live	Stakeholders, publics	LF/ CF	
01/06/2021	SM/ Web – Access Community Trust providing onsite catering	Stakeholders, publics	CF/ LF	
02/06/2021	Key Stakeholder Group Meeting	Key Stakeholder Group Members	CF	
10/06/2021	SM/ Web - East Suffolk College Presentations re. Apprenticeships – filming for SM & web	Stakeholders, publics	CF/LF	105 students attended Video provided to ESC - insufficient quality to shar
14/06/2021	SM/ Web - Constructionarium – Women in Construction event w/ BB apprentice	Stakeholders, publics	CF/LF	
21/06/2021	Meeting with Luke Utterly re. school engagement 21/22	Stakeholders, publics	CF/LF	
01/07/2021	Project update Newsletter, particular	Stakeholders, publics	CF	

	focus on Section 5 and 6 stakeholders			
10/08/2021	SM/ Web – Nuffield Work Experience Placement	Stakeholders, publics	CF/ LF	
22/09/2021	Full Council Meeting re. 40m Barrier	Stakeholders, publics	TEP	
22/09/2021	RNSYC Meeting re. 40m Barrier	Stakeholders, publics	TEP	
01/10/2021	Press release re. temporary defence exercise	Stakeholders, publics	CF	
01/10/2021	Offer Kwik-Fit some comms support re. open as normal, different car parking	Stakeholders, publics	CF	

07/10/2021	Norfolk and Suffolk Coast Conference – LFRMP Schools Session, Apprentice talk and Careers Fair	Stakeholders, publics	CF/ LF	
25/10/2021	Meeting with Luke Utterly re. schools engagement – re-advertising of live session, Schools naming of LFRMP and potential future Careers engagement	Stakeholder, publics	CF/ LF	Luke to introduce CF and LF to his contacts in schools
25/10/2021	Social media – work experience placement from East Coast College	Stakeholder, publics	CF/ LF	
28/10/2021	Strategic Steering Group Meeting	Stakeholders, publics	CF/SB	
03/11/2021	Key Stakeholder Group Meeting	Stakeholders, publics	CF/ SB	

09/11/2021	Meeting (virtual) with artist Genevieve Clarke to explore possible collaboration	Stakeholders, publics	CF/ LF	
22/11/2021	Social media - Work placement as part of Prince's Trust Scheme	Stakeholders, publics	CF/ LF	
22/11/2021	Social media – Weekly construction updates with photos	Stakeholders, publics	CF/ LF	
25/11/2021	Meeting (virtual) with Heritage Action Zone – Aly Tipping, Rebecca Styles	Stakeholder, publics	CF/ LF	
12/2021	Social media/ poss. Press release – Salvation Army gift appeal	Stakeholders, publics	LF/CF	
01/12/2021	Update Virtual Visitor Centre re. 40m barrier	Stakeholders, publics	CF	

01/12/2021	Newsletter re. 40m barrier, Package 2 of tidal floodwalls and Port Entrance works	Stakeholders, publics	CF	
04/01/2022	SM/ comms around donation of racking to Re-Utilise	Stakeholders, publics	CF/LF	
17/01/2022	Press Release/ comms around Package 2 of the tidal floodwalls	Stakeholders, publics	CF/ AS	
17/01/2022	Press release/ comms re. Port Entrance Works	Stakeholders, publics	CF/ AS	
24/01/2022	Newsletter – Jan update	Stakeholders, publics	CF/ AS	
14/02/2022	Strategic Steering Group Meeting	Stakeholders, publics	SB/ CF	

28/02/2022	Key Stakeholder Group Meeting	Stakeholders, publics	SB/ CF	
31/01/2022	Press release/ comms re. Navigation Simulation	Stakeholders, publics	CF	
08/02/2022	Press release/ comms re. project donation of van costs for Access Community Trust	Stakeholders, publics	CF/LF	
10/03/2022	Internal workshop review (TWA0)	Project team	SB/ CF	
01/04/2022	Letter to residents and SM around Waveney Road night closure and footpath closure and works on Station Square.	Stakeholders/ publics	CF/ LF	

08/04/2022	Comms around finishing on South Pier for the Summer – explain where up to, why stopped and when continuing	Stakeholders/ publics	CF	
27/04/2022	East Coast College Careers Fair	Stakeholders, publics	CF/LF	
29/04/2022	April Newsletter	Stakeholders/ publics	CF	
02/05/2022	Defra briefing ahead of MP meeting with minister	Stakeholders	CF/ SB	
09/05/2022	Comms around Hamilton Road works – Global Assets International	Stakeholders/ publics	CF	

17/05/2022	Visit to Dell Primary School	Stakeholders, publics	SB/CF	
05/07/2022	TWAO Development meeting	Internal	CF/ SB	
08/07/2022	Deployment Plan workshop	Stakeholders	CF/SB	
01/07/2022	LFRMP Newsletter	Stakeholders, publics	CF	
01/08/2022	Comms around completing SPR/ Hamilton Road progression	Stakeholders, publics	CF	
01/08/2022	Comms around completion of the Port Entrance Works	Stakeholders, publics	CF	

08/2022	Update Virtual Visitor Centre	Stakeholders, publics	CF	
08/ 2022	EIA Consultation	Stakeholders, publics	Jacobs	
09/09/2022	Strategic Steering Group Meeting	Stakeholders, publics	CF/CB	
01/10/2022	Comms around re-commencement of package 2	Stakeholders, publics	CF	
13/10/2022	Norfolk and Suffolk Coast Forum Conference Schools Stage	Stakeholders, publics	CF	
21/10/2022	Key Stakeholder Group hosted workshop – EAI/ NIA/ BOP	Stakeholders, publics	CF/SB	

31/10/2022	Review responses from workshop	Stakeholders, publics	CF/SB	
11/11/2022	Key Stakeholder Group meeting	Stakeholders, publics	CF/ SB	
14/11/2022	Issue public consultation documents	Stakeholders, publics	SB/ CF	
14/11/2022 – 07/01/2023	Public consultation period – must include residents effected by construction	Stakeholders, publics	CF/ SB	
23/11/2022 – 24/11/2022	Public consultation event	Stakeholders, publics	CF/ SB	Concern adverse weather affected attendance – further targeted engagement planned.
12/ 2022	Strategic Steering Group Meeting	Stakeholders, publics	CF/SB	Postponed until after TWAO application submission.

01/2023	Review consultation responses	Stakeholders, publics	SB/ CF	
01/2023	Respond to consultation responses	Stakeholders, publics	SB	
01/02/2023	TWAO consultation report	Stakeholders, publics	SB	
09/02/2023	TWAO Navigation Stakeholder Engagement	Stakeholders, publics	CF	
15/02/2023	Forward plan schools activities; tidal barrier competition	Stakeholders, publics	CF/LF	Invite gone out to schools – primary and secondary.
20/02/2023	Communication to stakeholder database re. red line drawing amendment and channel closures	Stakeholders, publics	CF	Sent to database.

03/2023	Project newsletter	Stakeholders, publics	CF	
03/03/2023	Update consultation booklet	Stakeholder, publics	CF	
03/03/2023	Factsheet – Hamilton Road works restart	Stakeholders, publics	CF	
06/03/2023	Social media/ comms around reaching £5m social value	Stakeholders, publics	CF/LF	
04/2023	Comms around extended working in the South Pier area	Stakeholders, publics	CF	
05/2023	Social media/ comms – drone footage of walls progress	Stakeholders, publics	CF	

05/2023	Strategic Steering Group Meeting	Stakeholders, publics	CF	
05/2023	Key Stakeholder Meeting	Stakeholders, publics	CF	
02/05/2023	Pre TWAO submission consultation complete	Stakeholders, publics	SB	
02/05/2023	Site Visit – Sir John Leman – Barrier naming competition	Stakeholders, publics	CF/LF	
10/05/2023	School Visits – Barrier naming competition	Stakeholders, publics	CF/LF	
24/5/2023	School Visits – Barrier naming competition	Stakeholders, publics	CF/LF	

06/2023	Comms around the reopening of Royal Green car park/ green	Stakeholders, publics	CF/LF	
09/2023	Press release re. Glass Tidal Flood walls opening	Stakeholders, publics	CF	
09/2023	Opening event Glass Tidal Flood Walls incl. school children	Stakeholders, publics	CF/ SB	

Supporting documents:

Appendix 1: Engagement Log

Appendix 2: tidal walls engagement plan

Stakeholder database



LOWESTOFT

FLOOD RISK MANAGEMENT PROJECT

Appendix 3. Equalities Impact Assessment

East Suffolk - Equality Impact Analysis (EqIA)

EqIA reference: **EQIA438993255**

Service area/Team conducting EqIA: **Coastal Management Planning and Coastal Management**

Officer conducting the EqIA: **Charlotte Flight**

Officer email address: **charlotte.flight@eastsuffolk.gov.uk**

Responsible Cabinet member: **David Ritchie**

Title of project/policy/initiative/action relating to this EqIA: **Lowestoft Flood Risk Management Project**

Is this a new project, policy, initiative or action that directly impacts people: **Yes**

Date of EqIA: **22/07/2022**

Does the project/policy/initiative/action relating to this EqIA have the potential for positive or negative impact on any of the protected characteristics?

Characteristic - Impact

Age: **Positive**

Reason: **We offer an online visitor centre which is accessible to different age groups at different locations and times. This can be accessed by anybody with a computer or mobile device. However for those without access to the internet there is in person events and printed materials. Larger print and different language versions are available upon request.**

The project website complies with the accessibility regulations.

Disability: **Positive**

Reason: **Footpath closures as a result of construction could cause barriers to people with disabilities, however diversions are clearly signed via drop curb and pedestrian crossings.**

Accessible venues are used for events, including disable ramps, toilets etc.

Gender reassignment: **No impact**

Reason: **Our materials/ venues/ project information is inclusive.**

The flood risk management project has no impact on gender identity. Flood protection is for all in the community.

Marriage and civil partnership: **No impact**

Reason: **Our materials/ venues/ project information is inclusive.**

The flood risk management project has no impact on marital status. Flood protection is for all in the community.

Pregnancy and maternity: **Positive**

Reason: **Footpath closures as a result of construction could cause barriers to people with prams, however diversions are clearly signed via drop curb and pedestrian crossings.**

At events quiet areas are provided where breast feeding could be possible. Baby changing facilities are available at all venues used.

Race: **Positive**

Reason: **Materials can be provided in different languages upon request.**

Religion or belief: **Positive**

Reason: **Community leaders for faiths and beliefs are engaged so that they can further engage with their communities.**

Sex: **No impact**

Reason: **Our materials/ venues/ project information is inclusive.**

The flood risk management project has no impact on sex. Flood protection is for all in the community.

Sexual orientation: **No impact**

Reason: **Our materials/ venues/ project information is inclusive.**

The flood risk management project has no impact on sexual orientation. Flood protection is for all in the community.

Project images rarely include people and are generally coastal asset orientated.

Deprivation/Socio-economic Disadvantage: **Positive**

Reason: **The project overall will have a positive impact on socio-economic disadvantage, removing key barriers to economic development in the town.**

Scheme adheres to SCAPE framework which includes the social value KPIs, including TOMs focussing on offering opportunities across the socio-economic demographics.

What evidence or data has been collated or used to support the completion of this EqlAPublic consultations and engagement (stating any specific groups you engaged with or surveys referred to), Engagement with other internal teams/ departments, Customer complaints/comments, Press and social media comments, Engagement with or information from statutory partner organisations, Engagement with or information from Voluntary and Community organisations, Published documents/reports/data

Details for public consultations: **Feedback forms, materials used.**

Details for engagement: **Survey results, meeting minutes, progress trackers, meeting recordings.**

Details for customer complaints: **Email correspondence, engagement log, online live chat form.**

Details for press and social media: **Press log, social media comments on project accounts.**

Details for published documents:

As a result of undertaking this EqlA do you need to provide information relating to the policy, project, initiative or action to the public in a different language or form and how do you propose to do this: **No as we already are able to provide materials in different formats.**

As a result of completing this EqlA, has the Author, Service team, Project manager made any changes or adjustments to the policy/project/initiative/action: **Yes**

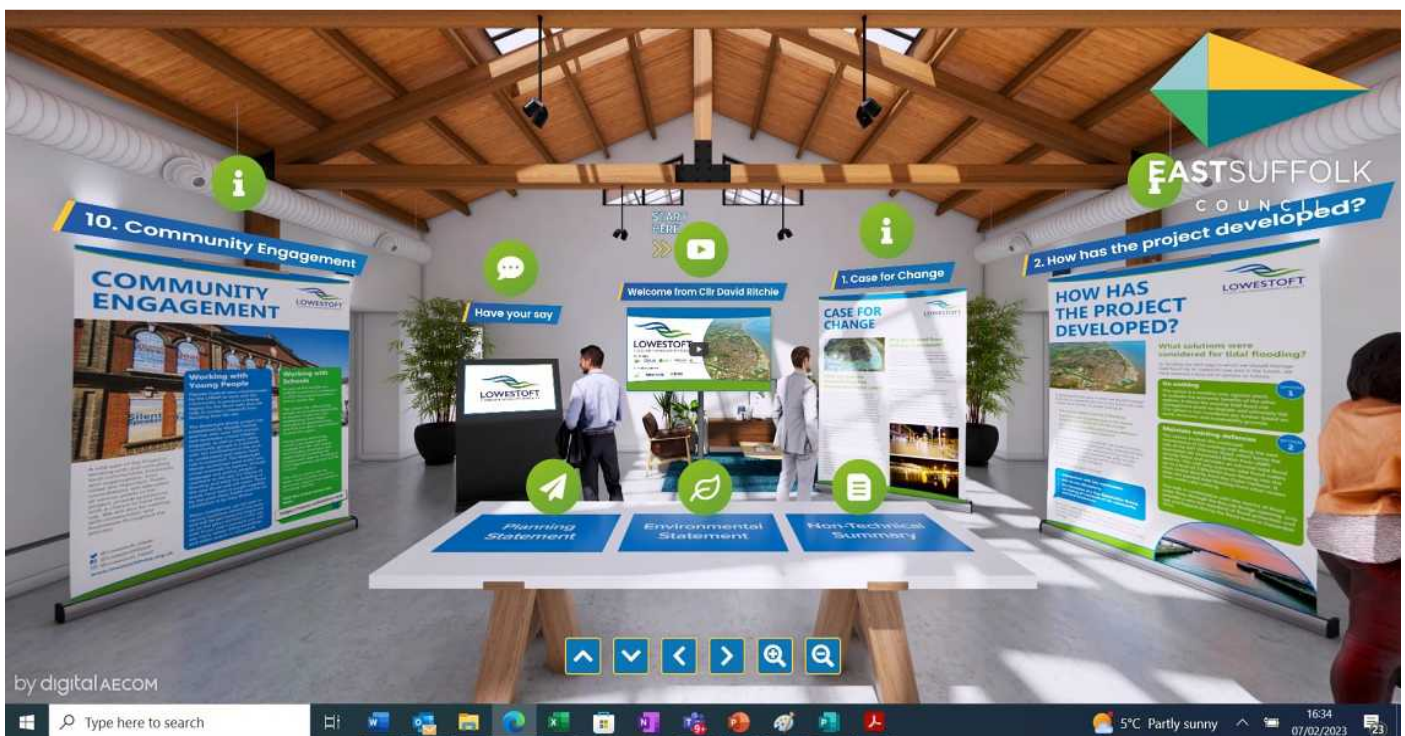
Record of those changes: **Add subtitles to public facing videos and be consistent with ALT text onto all images.**

Is the policy/project/initiative/action subject to equality monitoring: **Yes**

How is the data collected/disseminated and where will it be discussed: **Data collected by partner agencies and discussed at internal level and used for funding applications.**



Appendix 4. Consultation materials



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2016 Consultation Materials

How will we pay for future defences?

To do any works to carry out the Strategy will rely on availability of funds. Some funding is available from central government, this is known as 'Flood Defence Grant in Aid' or 'FDGiA'.

The amount of money the government contributes depends upon the number of households and other assets, such as businesses, being protected.



1 Gorleston

£8 to 10 million, including works to protect the southern boundary, with £5 to 6 million spend on construction work in the first 10 to 20 years

2 Corton

Up to £20 million to defend Corton and prevent outflanking, with most of that for construction work over the next 10 to 20 years

3 Hopton to Corton

Around £5 million (works to construct hard points within next 10 years)

4 Hopton

£6 to 7 million costs over next 100 years, with around £2 to 3 million spend in the first 10 to 20 years for works to address potential outflanking

5 Gorleston to Hopton

Around £4 million (for works to construct hard points within the next 10 years)

6 Gunton Warren

Less than £0.3 million for removal of failed groyne components

7 Lowestoft North Denes

Around £30 to 35 million in total to improve the seawall, with £20 to 30 million of that in the first 20 years

8 Lowestoft Ness

Around £7 to 8 million costs for remedial works, with an estimated £2 to 3 million of that in the first 10 to 20 years

How will we pay for future defences?

Along this Strategy coastline it is unlikely that we will be given full funding from Flood Defence Grant in Aid. But it is possible that projects may qualify for partial funding and still go ahead in time if other funding can be found to meet the remainder of the cost. So we have been looking at ways that we can find funding from others in order to pay for future works. An important next stage will be to secure funding for projects.

Pakefield south

Up to £3 million costs if any works south of present defences are required

Pakefield north

Between £2 and 9 million depending upon beach behaviour and the need for new structures to be built

Lowestoft South Beach (South)

Between £3 and 9 million, depending upon beach behaviour and whether we need new groynes

Lowestoft South beach (North)

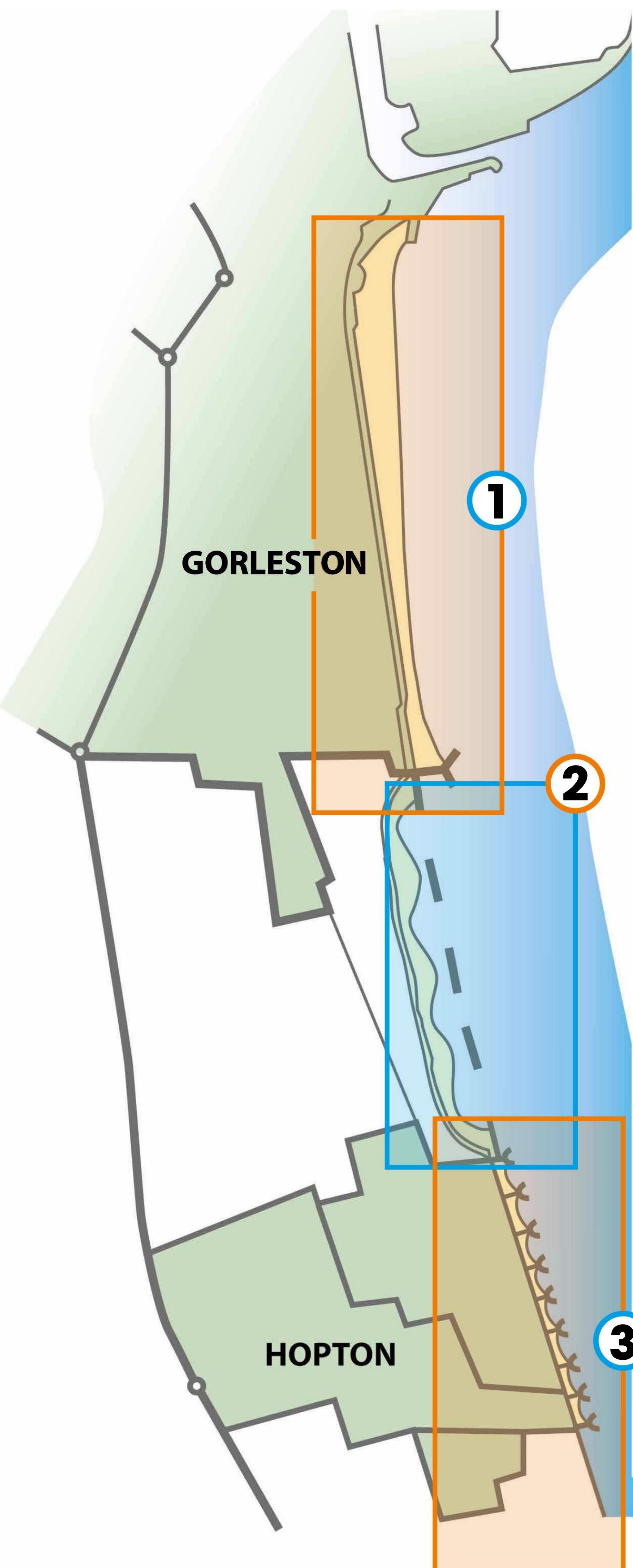
Between £2 and 9 million costs over the next 100 years, depending upon beach behaviour and the need to do further works

Lowestoft Harbour

Costs for the flood protection scheme are being determined by the Lowestoft Tidal Defence Scheme



What will the strategy mean?



Gorleston 1

The beaches are in a good condition, but we may need to do works in the future. The timing of these will depend on how the beach changes but we do not expect the seawalls to be at risk within the next 10 years.

If the beach starts to deteriorate, we think that the best option is to construct a headland structure at the southern end of Gorleston. This will stabilise the beach along the southern end of the Gorleston seawall, where the beach is most narrow at the moment. It will also protect the end of the seawall and protect properties behind from erosion.

We will monitor the beaches to decide when best to do these works, to secure the future of Gorleston and the communities and businesses it supports.

Gorleston to Hopton 2

Beaches along this stretch have been narrowing, particularly to the south and the current alignment of this frontage is not sustainable.

Our preferred approach is to create a series of hard points, which will (1) reduce the rate of cliff erosion and land loss (2) encourage the development of safe and accessible beaches. We would construct these by placing rocks over sections of the existing defences to create a series of 'rock bunds'. We would then remove the intervening sections of defence.

This approach will require private investment. If this is not available, we recommend a programme of monitoring, regular liaison with the Golf Club and removal of failed defences as funds permit.

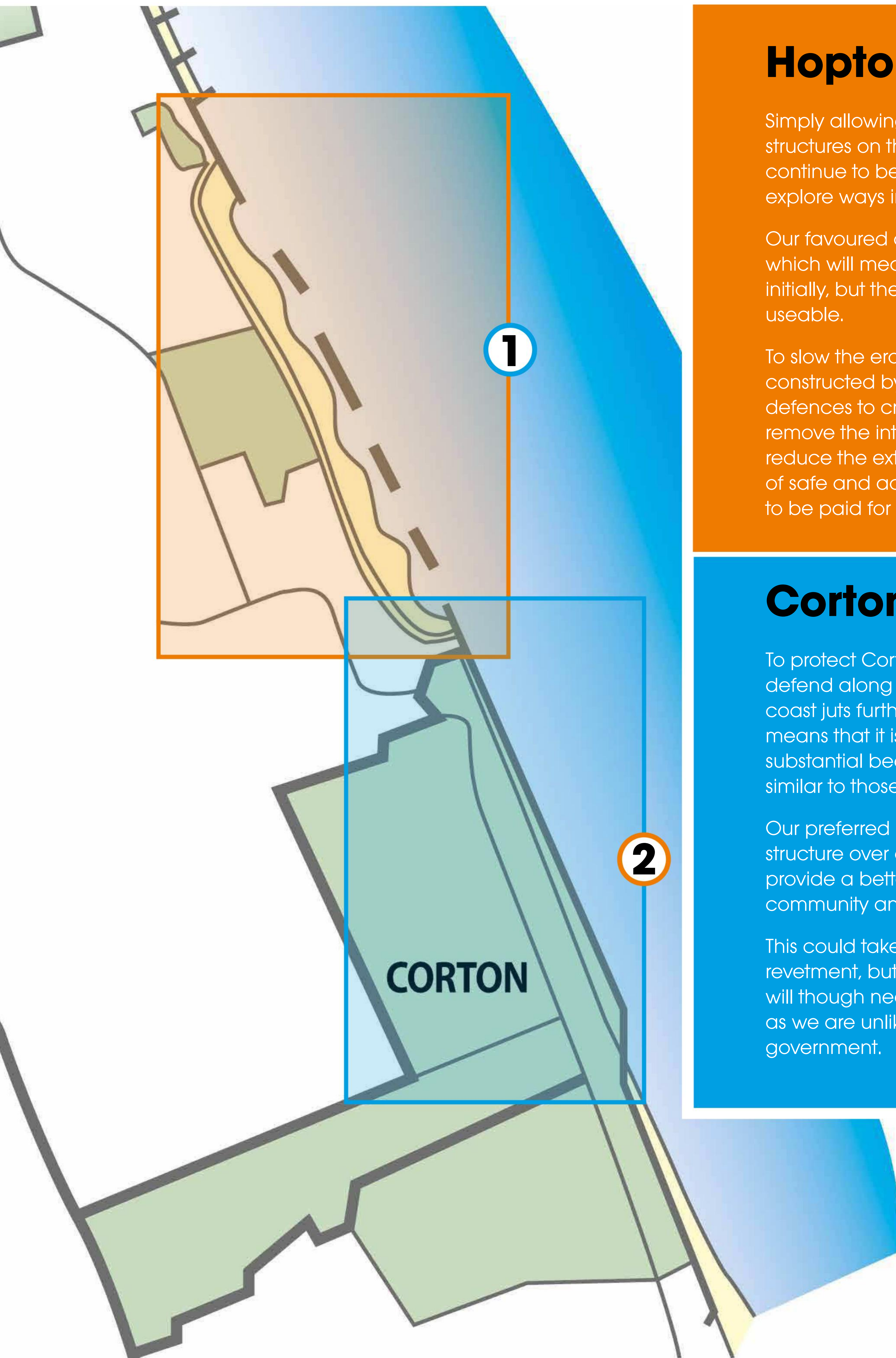
Hopton 3

New coastal defence works were constructed in 2014 and plans to extend with similar works southwards to the district boundary have been recently approved and are expected to be built during 2016.

The preferred option can therefore be achieved through maintaining and minor repair works to the defences. It is unlikely that such works would attract any government funds, so maintenance and repairs would need to be undertaken privately.

The Strategy for the frontages to the north and south is to allow some coastal realignment, so some additional works will be required to ensure that the defences along this section are not eroded from behind. We will need to update the Shoreline Management Plan.

What will the strategy mean?



Hopton to Corton 1

Simply allowing defences to fail and remain as derelict structures on the foreshore means that the beaches will continue to be inaccessible. There are also opportunities to explore ways in which the beaches can be improved.

Our favoured option is to remove the failing defences, which will mean that the rate of cliff erosion will increase initially, but the beach area could become accessible and useable.

To slow the erosion a series of hard points could be constructed by placing rocks over sections of the existing defences to create a series of 'rock bunds'. We would then remove the intervening sections of defence. These should reduce the extent of land loss and promote development of safe and accessible beaches. Such works would need to be paid for privately.

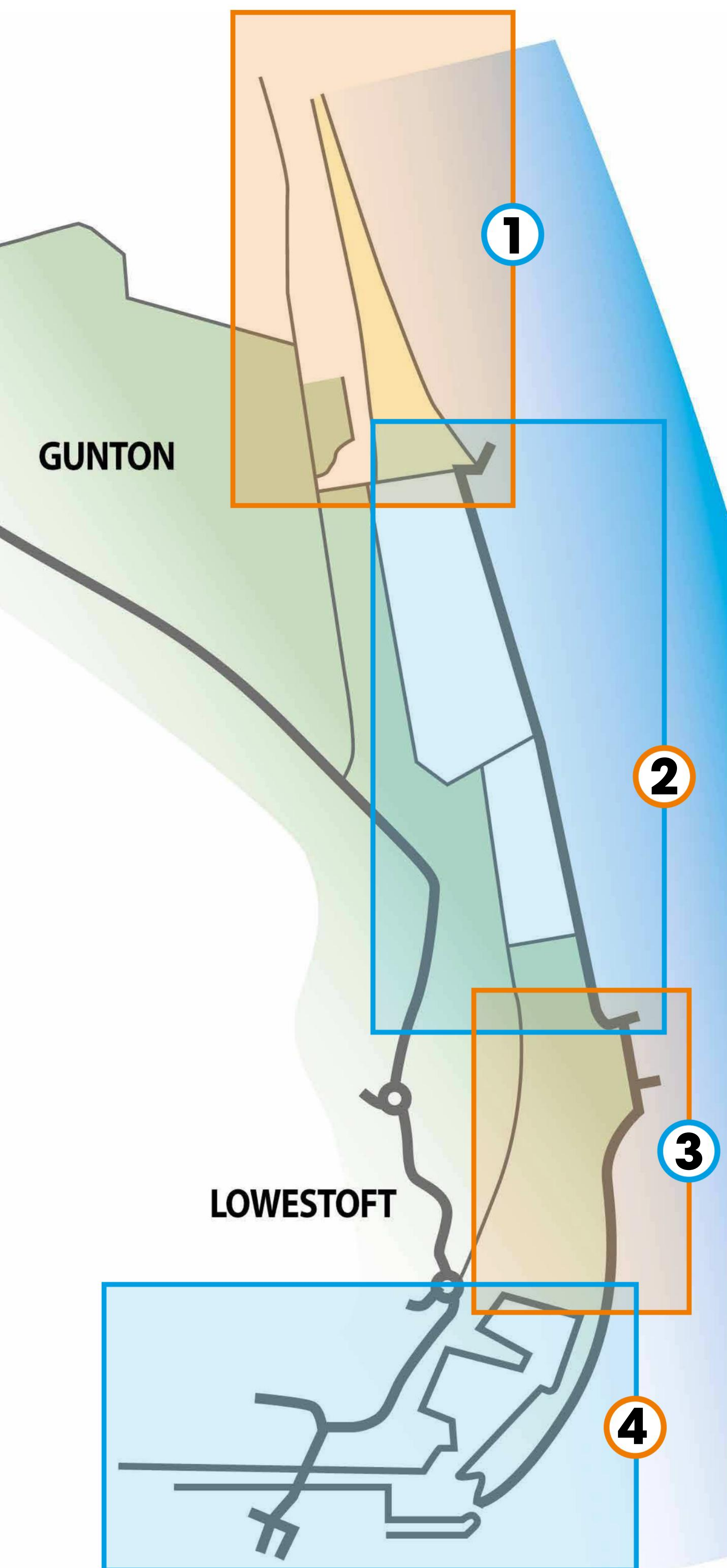
Corton 2

To protect Corton as it is, we will need to continue to defend along the current defence line. This part of the coast juts further out to sea than adjacent sections. This means that it is more exposed and it is unlikely that a substantial beach could form, even if we built structures similar to those at Hopton.

Our preferred approach is to build a more substantial structure over and above the existing wall. This would provide a better, longer term protection to the coastal community and businesses.

This could take the form of a new seawall or rock revetment, but this will be decided at a later stage. We will though need to find funding to carry out these works as we are unlikely to gain significant funds from central government.

What will the strategy mean?



Gunton Warren 1

At the moment there is a wide sand-shingle beach that provides the main defence along this frontage.

Slumping of the cliffs at the back of the beach is currently an issue. This is due to drainage issues within the cliff face and is not something that can be addressed through coastal defence works. We therefore plan to investigate this problem further, separate to this Strategy.

There is no need for us to do major coastal works along this frontage in the foreseeable future. There are remains of old groynes along the beach and we do intend to remove these if we need to, to ensure the beach remains safe. If beach levels do start to change we may need to look at measures to prevent erosion of the cliffs, but we don't think this will be necessary within the next few decades.

Lowestoft North Denes 2

It is very unlikely that a beach would return along this frontage as it is too exposed. We also expect that the narrow beach along the northern end of the frontage will diminish further. As well as protecting properties and leisure amenities, the current seawall also prevents exposure of an old municipal dump site that is buried beneath the Denes.

We are looking at improving the existing seawall, by constructing a full height rock revetment in front of the seawall, like at Ness Point, with a low level wall along the foot of the promenade. This will protect assets inland and make the promenade safer for users.

We are also looking at constructing a headland structure at the end of North Denes seawall. This will both reduce the risk of local erosion here and help stabilise the beaches along Gunton Warren.

Lowestoft Ness 3

The existing defences are substantial, but we know we need to replace the steel sheet piling that runs behind the rock work in the coming years. We also need to refurbish or replace the steel in the sewer outfall.

If we don't do these works the seawall will be at risk. But we can do this work in phases.

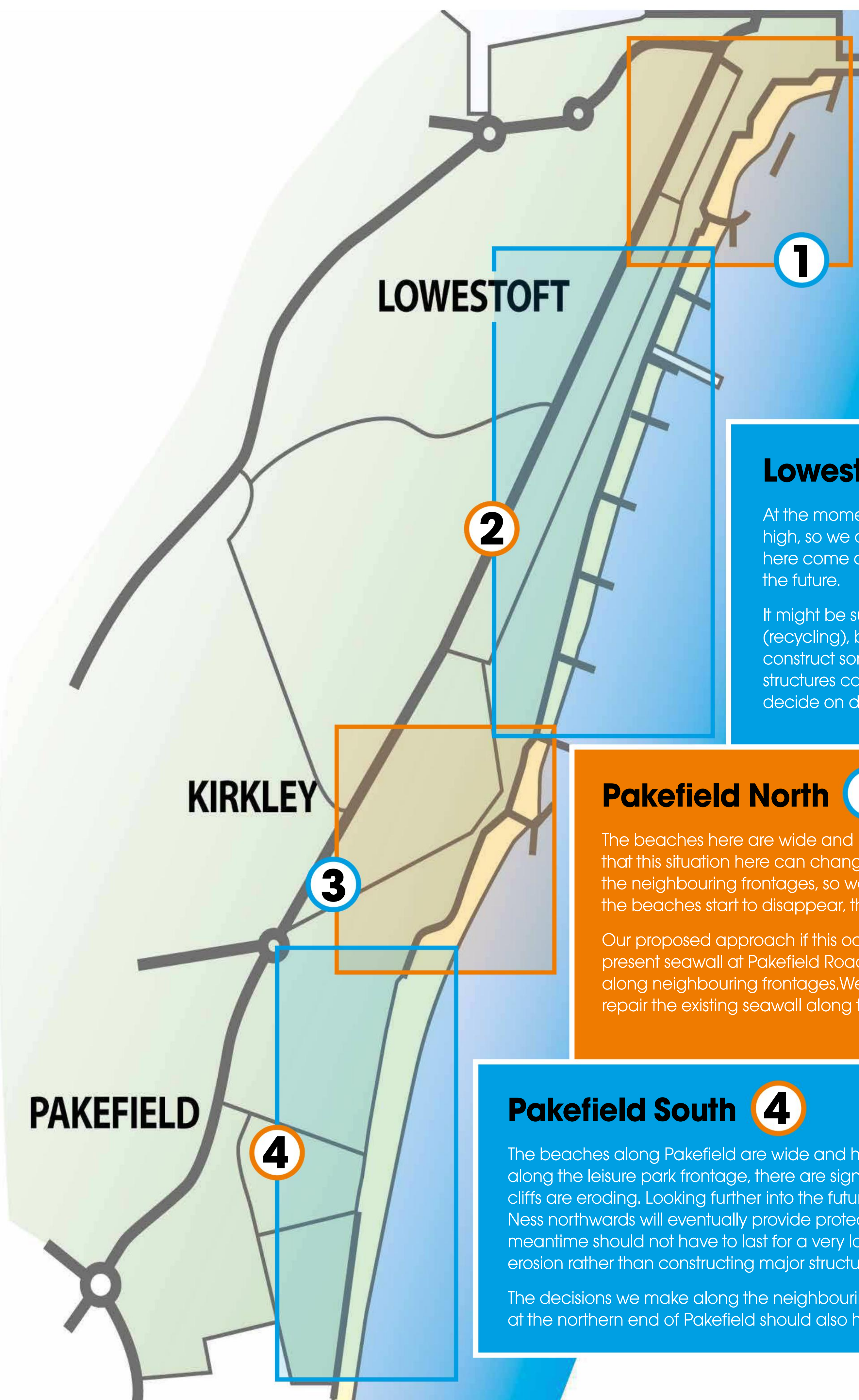
There is also an opportunity for enhancements in this area such as constructing a low wall or hand railing to improve safe public access. These details will be considered when works are designed.

Lowestoft Harbour 4

The Harbour and associated structures are owned and maintained by Associated British Ports (ABP), who would be responsible for any future works. Associated British Ports have confirmed that their intention is to maintain the current line of the existing structures.

The Lowestoft Tidal Defence Scheme is developing a flood protection scheme designed to protect residential and commercial properties within Lowestoft from the combined effects of tidal, fluvial and surface water flooding.

What will the strategy mean?



Lowestoft South Beach (North) 1

The beach is a key asset of our frontage at Lowestoft, but it is also important as part of our coastal defences. So we want to have a good beach along the frontage. Recent low beach levels here (north of Triton Statue) led to us undertaking urgent work to help protect the seawall and to make improvements to this end of South Beach.

But it is possible that this beach will not get any better, so we are considering future additional structures to hold a larger beach if necessary, such as a headland rock groyne or additional shore-parallel rock structures. We will also need to improve the stability and effectiveness of the spur breakwater.

Lowestoft South Beach (South) 2

At the moment the beaches south of Triton Statue are generally wide and high, so we don't need to do anything at this stage. But we know that beaches here come and go, so we have considered what works might be needed in the future.

It might be sufficient to simply move sand from one area to another (recycling), but if beach levels drop significantly it is likely that we will need to construct some structures to help trap material in front of the seawalls. Possible structures could include timber or rock groynes, but we will only need to decide on details when we design the scheme.

Pakefield North 3

The beaches here are wide and high and protect the seawall. But we know from past experience that this situation here can change rapidly. Any work we do here will affect what happens along the neighbouring frontages, so we need to think about the Lowestoft frontage as a whole. Should the beaches start to disappear, this would threaten the stability of the seawalls.

Our proposed approach if this occurs is to build a structure that would extend seaward of the present seawall at Pakefield Road. This would both protect this area and help to hold the beach along neighbouring frontages. We might also need to do short term works to bolster or patch and repair the existing seawall along the southern end of this frontage, should the beach diminish.

Pakefield South 4

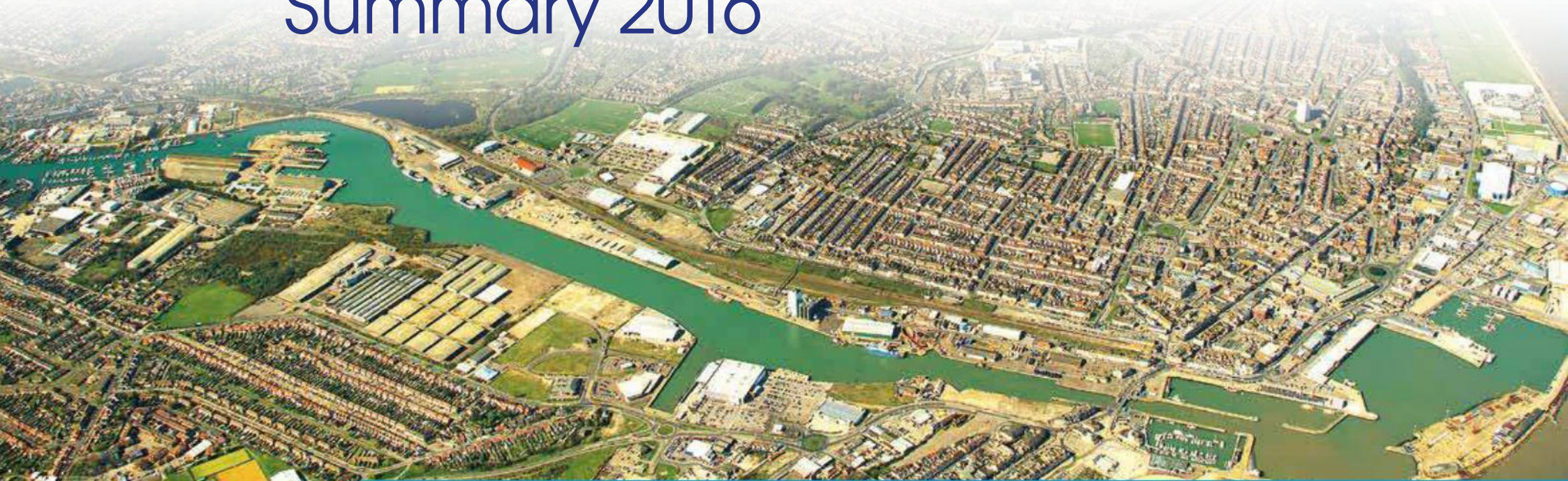
The beaches along Pakefield are wide and high at the moment and protect this frontage. But to the south, along the leisure park frontage, there are signs that the beach is starting to disappear and the neighbouring cliffs are eroding. Looking further into the future, we anticipate that the continued movement of Benacre Ness northwards will eventually provide protection to Pakefield. This means that any work we do in the meantime should not have to last for a very long time and so we recommend low cost measures to reduce erosion rather than constructing major structures.

The decisions we make along the neighbouring seafront will affect this frontage. Construction of a headland at the northern end of Pakefield should also help us to hold a beach here.

Lowestoft

FLOOD RISK MANAGEMENT STRATEGY

Summary 2016



Introduction

This Strategy Summary Document is a brief overview of the Strategy for managing the risk of flooding to Lowestoft from the sea, rivers and extreme rainfall. More information can be found by visiting our website www.lowestoffrmp.org.uk

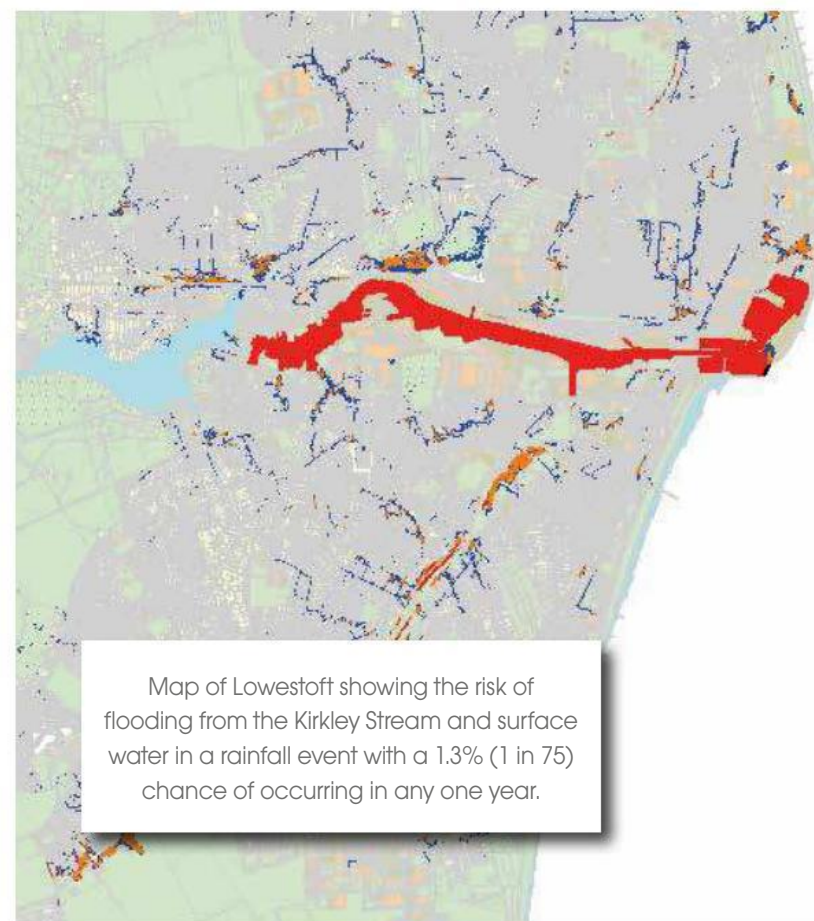
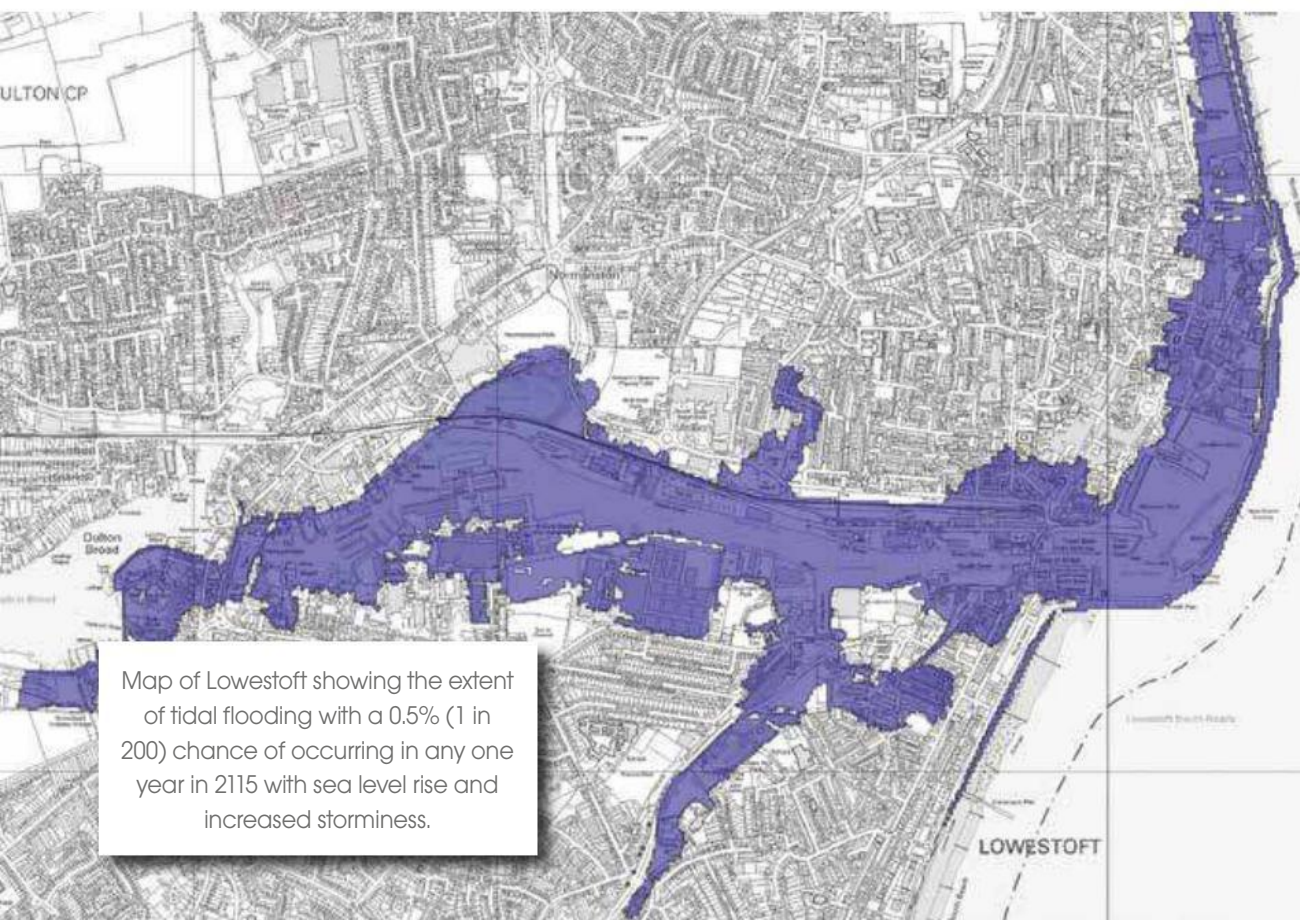


What area does the Strategy cover?

This Strategy covers the areas of Lowestoft deemed to be at significant risk from tidal flooding between the Outer Harbour and the western end of Lake Lothing at Mutford Lock; from river flooding along Kirkley Stream, and from surface water flooding both adjacent to Kirkley Stream and other key areas identified to the north and south of Lake Lothing.

The main risk from tidal flooding is from the sea caused by a tidal surge that develops in the North Sea along the eastern coastline of the United Kingdom as was demonstrated by the events in 1953 and most recently in December 2013. Lowestoft has very limited existing tidal flood defences and without further investment, the town will remain at significant risk.

The risk from river flooding was demonstrated by the event last July 2015 along Kirkley Stream. The risk of surface water flooding from extreme rainfall events has been considered within a number of local flood risk zones. In both cases it is important to consider the zone or area that contributes to the flood risk rather than a specific location where the flooding occurs.



Why do we need a Strategy?

The December 2013 tidal surge flood event which resulted in over 160 properties being affected and business brought to a standstill, highlighted the inadequacy of Lowestoft's flood defences and the impact it has on existing and potential growth for the town.

This was further reinforced by the flooding in the Kirkley area of Lowestoft in July 2015 following an extreme

rainfall event. This demonstrated Lowestoft's vulnerability to all forms of flooding from the sea, rivers and extreme rainfall.

Solutions are needed to address all these forms of flooding to offer the best possible flood risk management for Lowestoft.

Lowestoft has very limited existing flood defences and, without further investment, there is a risk that the instances of flooding will increase as the impacts of climate change increase. Unless we act there is a risk that in the future losses to property and businesses from flooding within Lowestoft will become unsustainable and will prevent any future growth.

We need a Strategy so that we can gain approval from the government for the schemes and help secure public grant aid monies to contribute to the cost of the flood risk management solutions. The Strategy will also feed into our local plans.

This Strategy forms the first step in setting out our future approach to managing this flood risk. In making decisions about this, we need to consider how our actions in one area could affect another and also make sure that choices we make now will not have a negative impact on our long term plans.

Following on from this Strategy there will be a number of activities before any schemes can take place. These will include detailed appraisal of the options, confirming funding sources and planning.



How has the strategy been developed?

In deciding the best ways in which we should manage flood risk in Lowestoft now and in the future, we have carried out a number of studies looking at:

- the current extent and risk of flooding
- how flood risk could increase in the future through the impacts of climate change
- the costs and benefits of providing different flood risk management solutions

To ensure that impacts to people, the local economy and the environment have been fully understood and taken into consideration, everyone living, visiting or working on or around Lowestoft has been invited to take part in determining how flood risk within Lowestoft should be managed.



To date this has been through:

- engagement with key stakeholders
- one-to one discussions
- the formation of a Project Advisory Group, consisting of members of the community and local businesses.

We have used the feedback from this consultation to make decisions on the best approach and the options that are proposed to be taken forward in the strategy.

How will we pay for future defences?

To undertake any works identified within the Strategy it will rely on the availability of funds. Some funding is available from central government - this is known as 'Flood Defence Grant in Aid' or 'FDGiA'.

The amount of money the government contributes depends upon the number of households and other assets, such as businesses, being protected.

For Lowestoft it is unlikely that we will be given full funding from Flood Defence Grant in Aid. But it is possible that projects may qualify for partial funding and still go ahead in time if other funding can be found to meet the remainder of the cost.

So we have been looking at ways that we can find funding from others in order to pay for works now and in the future.

How does this strategy tie-in with the the Gorleston to Lowestoft coastal strategy?

This strategy abuts and overlaps in some areas with the Gorleston to Lowestoft Coastal Strategy which is considering the shoreline and coastal defences.

Due to these overlaps both strategies are being consulted on together and will seek approval with the Environment Agency and Defra at the same time.



What strategic flood risk management solutions have been considered for tidal flooding?

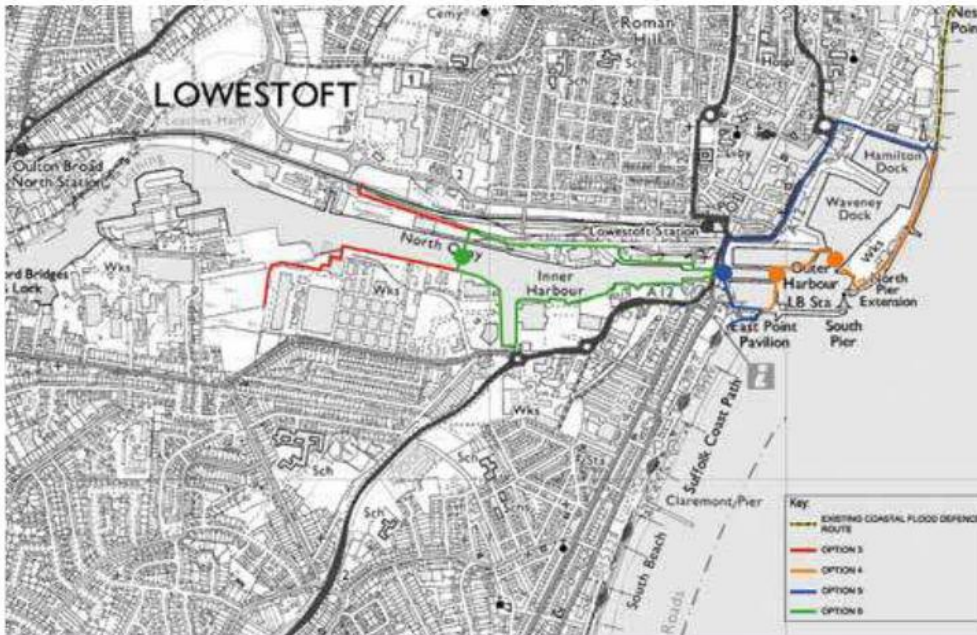
In deciding the best ways in which we should manage tidal flood risk in Lowestoft now and in the future, we have assessed a long list of options as follows:

- Do nothing (Option 1)
- Maintain existing defences (Option 2)
- Improve - defence raising – walls only (Option 3)
- Improve - defence raising – walls combined with a barrier
 - 3 barrier locations considered
- Outer Harbour (Option 4)
- seaward of Bascule Bridge (Options 5)
- within Lake Lothing combined with 3rd crossing (Option 6)

What criteria have been used to assess the strategic flood risk management solutions considered?

In assessing the possible options the following criteria have been used to decide which of those solutions offer the best with ways to manage tidal flood risk in Lowestoft now and in the future:

- Level of flood risk reduction
- Impact on navigation
- Impact on residents and businesses
- Environmental and landscape impact
- Impact on highways and bridges
- Buildability
- Delivery timescale
- Cost – capital and whole life
- Potential regeneration benefits
- Potential benefits linked with 3rd Crossing project



Tidal flood risk management options

Option 1 Do nothing

This option is a baseline only against which to evaluate the economic benefits of the other options. It allows the existing tidal flood risk management assets to degrade and ultimately fail.

This option is not considered any further based on social, economic and sustainability grounds.

Option 2 Do minimum - maintain

This option involves the continued maintenance of the existing wall along the east side of the A12 Waveney Road, which forms the foundation for ABP's security fence and provides an informal tidal flood defence. This wall only prevents tidal flood waters up to a level



of 2.90m AOD from flowing into the town centre directly from the Outer Harbour. It does not prevent tidal flooding from other routes from inside Lake Lothing.

This wall, in combination with the restrict of flood water flows through the Bascule Bridge opening, only provides a very low standard of flood protection (7) and was overtopped during the flood event in December 2013.

Option 3 Improve – Flood walls only

This option involves the construction of 5km of flood walls to the north and south of Lake Lothing, as well as in front of the Royal Norfolk & Suffolk Yacht Club to the south and along the perimeter of the Outer Harbour to

the north where it ties in with the existing coastal flood defences at the north-east corner of Hamilton Dock.

The flood defence wall on the north side of Lake Lothing would need to tie into high ground at its western end. This can only be achieved by either a flood gate across the dual Norwich to Lowestoft railway line near the Peto Way/Barnards Way roundabout or by a further 750m of wall construction to the west. On the south side the wall would need to tie into high ground at its western end close to Waveney Drive.

There would be numerous floodgates, especially on the north side, to allow access to the port quayside area in front of it. The walls between 0.4m and 1.7m in height would also be crossed by a significant number of drainage outfalls.



Option 4

Improve – Outer Harbour barriers & walls

This option involves the construction of the barrier across the channel entrance to Lake Lothing on the seaward side of the Bascule Bridge as well as another barrier at the entrance to the Outer Harbour.

It involves the construction of 0.7km of floodwall which ties into the same point of high ground to the south as per the other improve options as well as to the harbor sea wall to the north.

The number of floodgates required and the number of drainage outfall crossings would be minimal in comparison to all the other improve options considered. This option was considered to understand if there would be any benefit to the Outer Harbour area and the key businesses that operate in that area.



Option 5

Improve – Bascule Bridge barrier & walls

This option involves the construction of the barrier across the channel entrance to Lake Lothing on the seaward side of the Bascule Bridge.

It involves the construction of 1.5km of floodwall along the same alignment as Option 3 but the floodwalls would tie into the barrier structure rather than continue further west within Lake Lothing to tie into high ground.

The height of the floodwalls would vary between 0.4m and 1.7m. The number of floodgates required and the number of drainage outfall crossings would be significantly less than those for Options 3 and 6.



Option 6 Improve – 3rd Crossing barrier & walls

This option involves the construction of the barrier across Lake Lothing adjacent to the Riverside Business Park at the proposed location for the 3rd Bridge Crossing to consider whether there were any benefits from that joint construction.

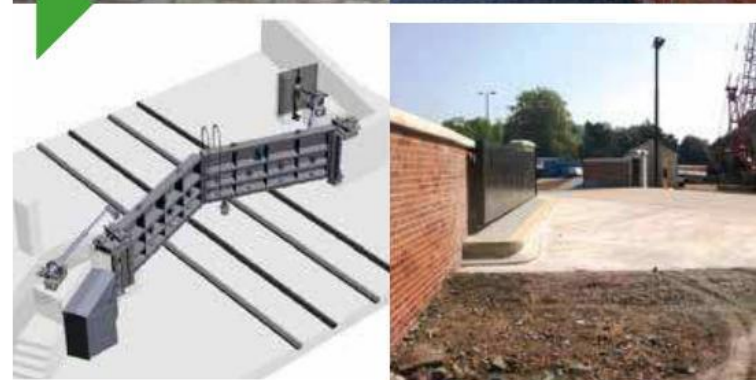
It involves the construction of 3.7km of floodwall along the same alignment as Option 3 but the floodwalls would tie into the barrier structure rather than continue further west and tie into high ground at the north-west and south-west ends.

As for Option 3 there would be numerous floodgates, especially on the north side, to allow access to the port quayside area in front of it. The walls would also be crossed by a significant number of drainage outfalls.

What could the barrier structure look like?



What could the flood walls and gates look like?



Assessment of the tidal flood risk options considered

Option 1 **Do nothing**

This option is a baseline against which to evaluate the economic benefits of the other options. It allows the existing tidal flood risk management assets to degrade and ultimately fail.
This option is not considered any further based on social, economic and sustainability grounds.

Option 2 **Maintain**

Does not offer credible standard of flood protection
Not sustainable as it relies on third party structures which are not formal flood defence assets

Option 3 **Improve – Flood walls only**

Estimated cost = £28million
Significant impact and constraints imposed on land based port operations especially within Lake Lothing
Does not reduce flood risk to properties at western end of Lake Lothing
Buildability and operational issues with flood gate across railway line
Resiliency of defences compromised by large number of flood gates and drainage outfalls

Option 4 **Improve – Outer Harbour barriers**

Estimated cost = £55million
Significant impact on port operations
Buildability issues with construction of two barriers affecting entrances to both Lake Lothing and Outer Harbour at the same time
Compromises Outer Harbour designation as “safe haven”

Option 5 **Improve – Bascule Bridge barrier**

Estimated cost = £17million
Least impact on port operations
Disruption to navigation during construction of barrier across Lake Lothing entrance
Benefits from integrating with Bascule Bridge control facility and mechanical stand-by plant

Option 6 **Improve – 3rd Crossing barrier**

Estimated cost = £52million
Significant impact on port operations and navigation within Lake Lothing
Resiliency of defences compromised by large number of flood gates and drainage outfalls
Potential cost benefit from joint construction offset by traffic and other impacts

What strategic flood risk management solutions have been considered for river and surface water flooding?

In deciding the best ways in which we should manage river (fluvial) and surface water (pluvial) flood risk in Lowestoft now and in the future, we have assessed a long list of options. To date we have only looked at one rainfall scenario – that with a 1.3% or 1 in 75 chance of occurring in any one year. This gives us a guide as to which options might be worth considering further.

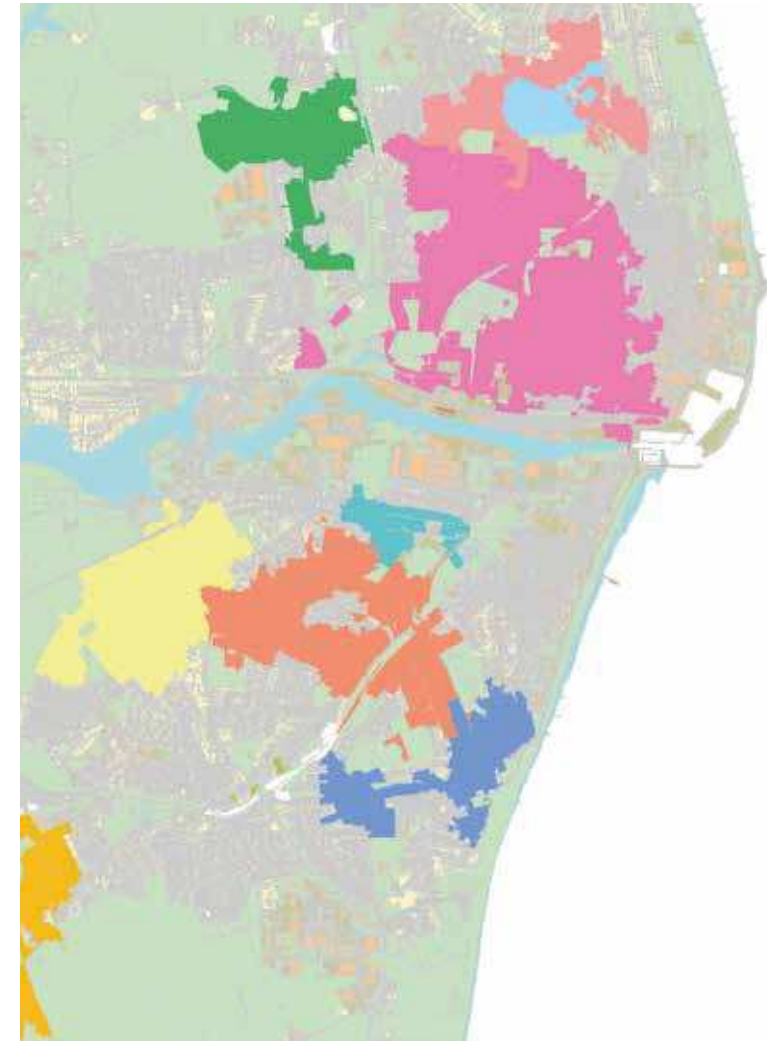
What criteria have been used to assess the strategic flood risk management solutions considered?

In assessing the possible options the following criteria have been used to decide which of those solutions offer the best ways in which we should manage flood risk in Lowestoft now and in the future:

- Level of flood risk reduction
- Impact on residents and businesses
- Local acceptability and availability of land
- Environmental and landscape benefits and impact
- Impact on highways and bridges
- Buildability
- Delivery timescale
- Cost – capital and whole life
- Potential regeneration benefits

Surface water management using sustainable drainage systems

The risk of surface water flooding depends on a complex interaction between the quantity of rain, where it falls, the topography, the amount of permeable land and the drainage systems. One of the key ways to manage surface water flooding is to work with nature, increasing the area of permeable land and places where water can naturally be held or stored. This is known as Sustainable Drainage and is the strategic option being considered in all areas. The location of sustainable drainage options will be targeted within the zones that contribute to the flood risk and can include a wide range of different measures.



Map of target area reduction zones

At this stage we are starting to consider which combination of sustainable drainage features are likely to be the most technically effective in reducing flood risk in each target zone. The range of such features is illustrated below. Whether these are taken

forward will depend on the willingness of individuals and communities to accept them and whether these options can be delivered at a cost that reflects a benefits provided and also the availability of land to install such features.

Source control



Options for the Kirkley Stream

Due to the recent flooding, which led us to undertake a detailed investigation into the way the stream and local drainage systems operate, we have more data about the area. This enabled us to consider a wider range of options to manage the flood risk along the Kirkley Stream. These are all based on the assumption that the stream is maintained in its current (May 2016) state. We know that keeping the stream clear of vegetation is important as one of the key factors that led to the flooding in July 2015 was blockages by vegetation and debris.

Pictures of Kirkley Stream at the time of flooding and after vegetation clearance - This is the baseline from which we will judge whether any other interventions will further reduce local flood risk.



Fluvial Options Overview – Location & Description

Options Considered

- 01 Create new storage and restrict flows
- 02 Additional storage in existing green spaces
- 03 Re-routing of the watercourse
- 04 Reducing flows from upstream watercourses
- 05 Restrict flows to use capacity in existing drainage systems
- 06 Create embankments
- 07 Installing a two stage channel in Kirkley Stream
- 08 Earlier operation of surface water pumps
- 09 Increasing capacity of existing storage areas
- 10 Removal of silt and re-grading of the watercourse
- 11 Adding non return valves on the network
- 13 Installing local mitigation measures
- 14 Optimising throttles in the river
- 15 Strategic non-return valve and underground storage



Assessment of the flood risk options considered for Kirkley Stream

Option	Description of Option	Assessment of option
01 - New storage and restrict flows	Using upstream greenspace to store flood water.	Reduces flood risk to The Street, Carlton Colville. We suggest this option is considered further.
02 - Additional storage in existing green spaces	Using greenspace in Meadow Park to store flood water.	Not effective alone as doesn't reduce flood risk in Carlton Colville, Aldwyck Way/Velda Close or Tom Crisp Way, in a 1 in 75 storm,. May work during more extreme storms so we suggest it is considered as part of wider package of storage measures
03 - Re-routing of watercourse	Diverting and re-routing part of Kirkley Stream which currently enters a culvert under properties in Carlton Colville.	This has been demonstrated to reduce flood risk and we suggest this should be considered further
04 - Reducing flows from upstream watercourses	Implementing measures upstream (such as basins and swales) that reduce the flow of water.	This reduces flood risk to The Street, Carlton Colville and should be considered further as part of a wider package of SuDS and storage measures.
05 - Restrict flows in existing surface water system	Using drains with spare capacity during storm events to maximise the current drainage system.	This will be technically challenging and risks transferring flood risk to other areas. We do not propose to take this option further.
06 - Creating embankments	Raising the banks of Kirkley Stream around Aldwyck Way & Velda Close.	This does not appear to reduce flood risk in the Aldwyck Way/Velda Close area in a 1 in 75 storm, but may work in more extreme rainfall events. We suggest this is considered further
07 - Implementation of two stage channel	Increasing the capacity of Kirkley Stream by re-profiling the river banks.	On its own, this is shown to have limited benefit in reducing flood risk to Tom Crisp Way. However, we believe this is worth being considered as part of a wider package of measures.

Option	Description of Option	Assessment of option
08 - Earlier operation of surface water pumps	Switching on the water pumping stations earlier during a flood event.	This does not have any impact on flood risk and we will not be taking this forward in the short-list of options to be considered.
09 - Increased capacity of existing storage areas	Clearing silt from the existing flood storage area (off Tom Crisp Way) to increase storage capacity for flood water. Doesn't reduce flood risk to the area in a 1 in 75 year flood.	This was not shown to be effective in reducing flood risk to the area in a 1 in 75 year flood but may work in more extreme rainfall events. We believe this is worthy of further consideration as part of a wider package of storage measures.
10 - Removal of silt and re-grading of the watercourse	Clearing silt from 1.5km stretch of Kirkley Stream. Doesn't reduce flood risk in 1 in 75 year flood.	Modelling demonstrated no reduction in flood risk in 1 in 75 year flood. On its own this option does not appear to be effective but may be worthy of consideration as part of a wider package of measures to improve the flow along the stream.
11 - Installation of non-return valves	Installing non-return valves to stop water from Kirkley Stream going back up into the drainage network.	Whilst the initial results do not appear to reduce flood risk we believe it is worthy of further consideration, looking at different valve locations along the stream.
13 - Local mitigation measures	Installing raised doorways, blocked airbricks and other Property Level Protection measures.	Demonstrated to reduce flood risk for a 1 in 20 year flood. We suggest this is considered as part of a Property Level Protection measures appraisal across the whole project area.
14 - Removing restrictions in the river	Removing restrictions in Kirkley Stream including increasing the size of culverts.	No demonstrable benefit in a 1 in 75 rainfall event, but we suggest this may be worthy of being considered as part of a wider package of measures to improve flows in the stream. This might be technically challenging and expensive to achieve.
15 - Strategic non-return valve and underground storage	Installing a storage tank alongside the Aldwyck Way area of Kirkley Stream with non-return valves and a water pump.	This demonstrated some flood risk benefit and we suggest it is considered further.

Proposed short list of pluvial/fluvial options

Having explored individual options as described in the table above, few appear to merit progressing alone so we suggest exploring further a range of measures in combination including:-

- Upstream Storage
- Sustainable Drainage Systems
- Improving conveyance of water through the stream
- Installing non return valves
- Local mitigation measures such as property level protection measures

As well as further studying the technical aspects of these options, we will be looking at whether they provide benefits during more frequent and/or more extreme storms and whether the benefits they provide outweigh the costs of implementation. Our ability to deliver many of these options will depend on the availability of suitable land and landowners' co-operation.

Have your say...



If you would like to comment on the Strategy presented in this document, please complete the following questions and return to Sharon Bleese (Waveney District Council Project Manager), or alternatively you can provide specific comments by letter, phone or email:

post to Riverside, 4 Canning Road Lowestoft, Suffolk NR33 0EQ

phone 01502 523 346

email Sharon.bleese@eastssuffolk.gov.uk

We would appreciate your response by the 29th July.

About you Name (optional): **Organisation / business** (if relevant):

I am particularly interested in knowing more about:

Do you... live in Lowestoft or the surrounding area? (please circle) YES NO Work or run a business in Lowestoft or the surrounding area YES NO

Visit Lowestoft for leisure? YES NO

How do you feel about the overall draft options we have presented here (please circle)?

I generally agree I partly agree I don't agree I don't know I don't understand the information

Please give any reasons:

How do you feel about particular options we have presented here (please tick)?

	I generally agree	I partly agree	I don't agree	I don't know	I don't understand the option
Tidal barrier option 1					
Tidal barrier option 2					
Tidal barrier option 3					
Tidal barrier option 4					
Tidal barrier option 5					
Tidal barrier option 6					
Surface water flooding (rivers and extreme rainfall)					
Option 1					
Option 2					
Option 3					

	I generally agree	I partly agree	I don't agree	I don't know	I don't understand the option
Option 4					
Option 5					
Option 6					
Option 7					
Option 8					
Option 9					
Option 11					
Option 13					
Option 14					
Option 15					

Your thoughts about flooding from rivers and extreme rainfall (known as surface water flooding)

.....

.....

.....

.....

.....

In this document you will see that we have identified areas potentially at risk of flooding. Do you agree with this information? (please circle)

Yes No

Tell us about your local experience of where flooding occurs.

.....

.....

.....

.....

In this document we have shown different options that can be used for sustainable drainage (see page 10). We would be grateful for your thoughts about which options would be acceptable to you and why.

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.....
Do you have any other suggestions? (please continue on the next page)

.....
.....
.....
.....
Do you have any outstanding concerns or issues with the information presented here? (please continue on the next page)

.....
.....
.....
Thank you for your time in completing these questions, we value your feedback.

If you would like to be kept informed about the project's progress please tell us how best to contact you.

By post - Your address:

.....
.....
.....
By email - Your email address:

20 vertical dotted lines for handwriting practice.





Sharon Bleese
Project Manager
Lowestoft Flood Risk Management Strategy
Waveney District Council
Riverside
4 Canning Road
Lowestoft
NR33 0EQ

21 July 2016

Dear Sharon

Lowestoft Flood Risk Management Strategy

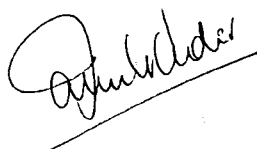
Thank you for the opportunity to comment on options for the Lowestoft Flood Risk Management Strategy.

At a meeting of the Lowestoft and Waveney Chamber of Commerce (LWCoC) Board in March 2014 we agreed, in finalising our Transport and Infrastructure Manifesto, a number priorities from the business perspective for Lowestoft and Waveney District. These included "Support the proposed Lowestoft flood defence scheme aimed at protecting the built, road and rail infrastructure from the adverse effects of tidal, pluvial and fluvial flooding."

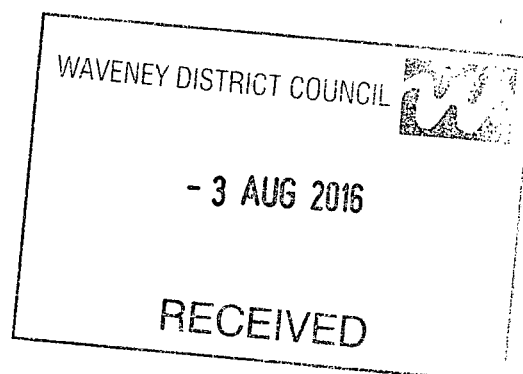
When our Board met on 14 July we considered the tidal flood risk management options set out in the current consultation document and agreed our support for option 5 'Improve – Bascule Bridge barrier and walls'.

We hope that this is helpful and we look forward to continuing to work closely with you as the flood risk proposals are finalised.

Yours sincerely



James Reeder
Chair



Background to the project

During the December 2013 tidal surge over 150 homes and businesses in Lowestoft were flooded. In addition to this road and rail networks were significantly disrupted.

The Lowestoft Flood Risk Management Project is developing a way forward to manage the flood risk to Lowestoft from all sources of flooding, river, rain and tidal, to allow the economic growth and regeneration of Lowestoft and protecting existing residential and commercial properties.

This has been identified as part of the Lowestoft Transport and Infrastructure Plan.

The extent of the area at risk of tidal flooding encompasses the area from the outer harbour entrance through Lake Lothing to the A1117 Bridge Road crossing and Mutford Lock, which forms the boundary with Oulton Broad. This will include the construction of a tidal barrier and raised or improved walls to provide protection from tidal flooding.

The project is also examining the extent of flood risk from the extreme rainfall and what can be done to alleviate the risks of flooding from sources such as rivers and extreme rainfall.



Funding and project partners

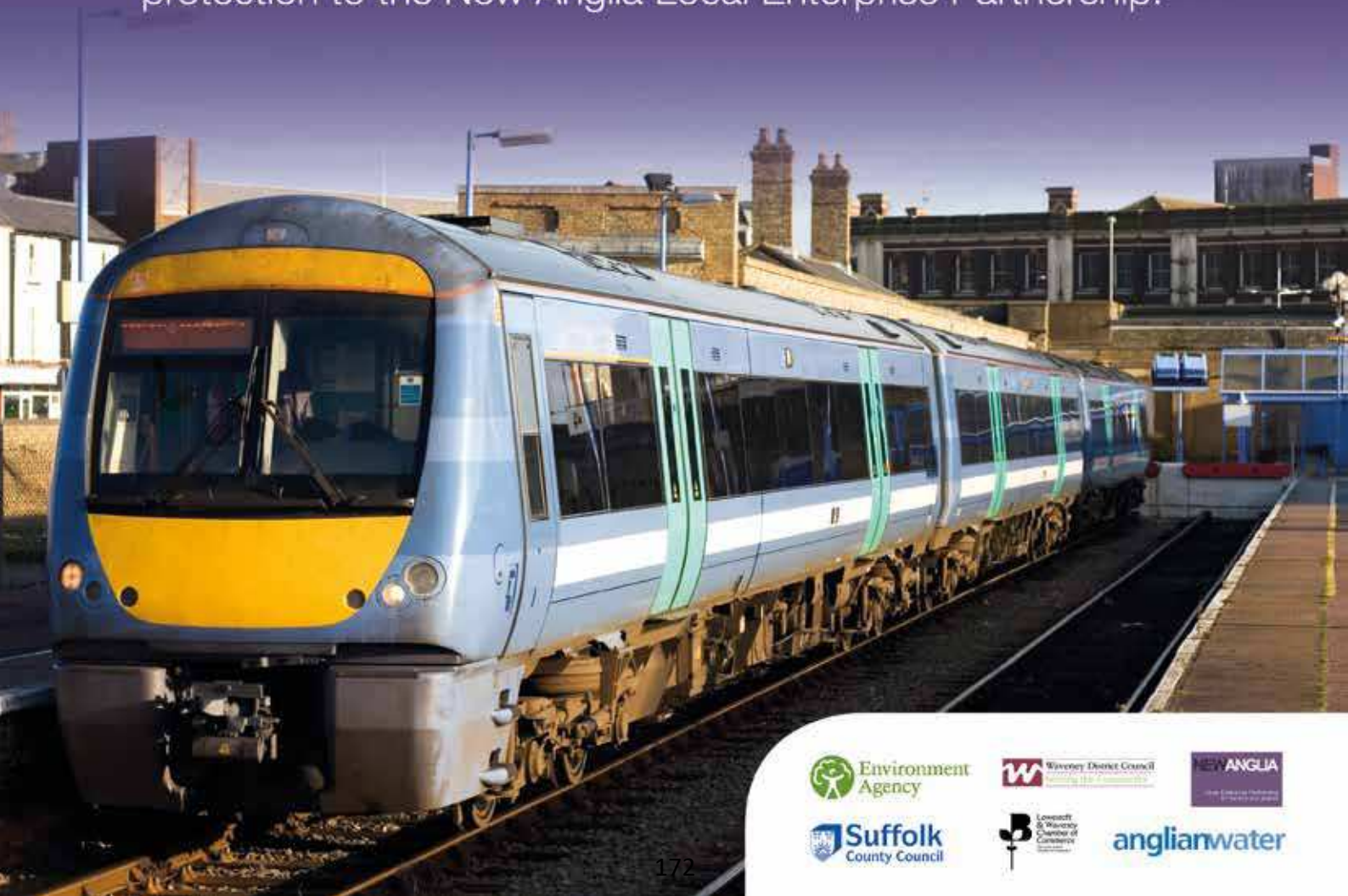
This project is a major capital investment for Lowestoft of around £25m. Funding has come from Defra's Flood Defence Grant in Aid, administered by the Environment Agency, New Anglia Local Enterprise Partnership, Local Levy, Anglian Water and from Suffolk County Council and Waveney District Council.

We are also pleased to be working in partnership with Associated British Ports and the Lowestoft and Waveney Chamber of Commerce.



Where are we now

In order to obtain Environment Agency approval to access national flood funding and Local Levy funding, an overarching strategy is being developed. This has included completing modelling and studies such as a Strategic Environmental Assessment. These will be complete by the end of 2015. We will then hold a public consultation in early 2016. As part of the development of the strategy and to help secure funding we have provided evidence of the economic value of flood protection to the New Anglia Local Enterprise Partnership.



What happens next & working with you

Tidal flooding

Once the strategy has been approved by the Environment Agency, we will need to apply for a Transport Works Act Order (TWAO). This is granted by the Secretary of State and is needed when construction can change or affect navigation. A TWAO can take up to two years to be approved but we are working with our partners and key stakeholders to make sure that we address concerns as early as possible which might hold up the Order being made.

This means that, from early 2016 we will be consulting with communities, business and organisations that are affected by this work to hear your comments and concerns.

Flooding from rivers and extreme rainfall

We are currently investigating the areas most at risk from surface water flooding and developing ideas for how to reduce the risks. These ideas will be part of the public consultation in early 2016, and will be developed further as the project progresses.



Who can you contact?

If you are interested in being kept informed about the project then please contact:

Sharon Bleese

Project Manager – Lowestoft Flood Risk Management Project
Suffolk Coastal and Waveney District Councils

Riverside

4, Canning Road

Lowestoft

NR33 0EQ

Direct dial: 01502 523346

or email: sharon.bleese@eastsoffolk.gov.uk



2017 Consultation Materials

Lowestoft Flood Risk Management Project

Consultation 30th October to 14th December 2017

Flooding from the sea



Introduction

During the December 2013 tidal surge over 160 homes and businesses in Lowestoft were flooded. In addition to this road and rail networks were significantly disrupted.

The Lowestoft Flood Risk Management Project is about developing a way forward to reduce the risk of flooding from the sea, rivers and from extreme rainfall. The target date for completion is 2020 and when finished, the project will support the economic growth and regeneration of Lowestoft and reduce the risk of flooding to existing homes and businesses.

In order to obtain Environment Agency approval to access national funding and to build a strong business case for the project's other funders, such as the New Anglia Local Enterprise Partnership, an overarching strategy has been developed to support the project. This includes modelling and studies, such environmental studies to help make sure that we are doing the right thing in the right way. These studies will also support the project's planning application for construction of the tidal walls and a Transport Works Act Order application that is needed for the tidal barrier.

A vital part of the project is working with, involving and consulting, local communities, businesses and organisations. Your views are important. At various points in the project there will be public consultations, providing everyone with a chance to have their say. We have also been meeting with communities and businesses throughout the process. In addition, we have formed a Business and Community Advisory Group to support the project. This is independently chaired by SSE and vice chaired by Lowestoft Rising. The project is being managed by Coastal Partnership East on behalf of the project partners and Waveney District Council as lead authority. Partners include Waveney District Council, Suffolk County Council, the Environment Agency, Anglian Water, Associated British Ports, the New Anglia Local Enterprise Partnership and Waveney and Lowestoft Chamber of Commerce.



What are we considering and how has the project progressed?

Flooding from the sea

The main risk from tidal flooding is from the sea caused by a tidal surge that develops in the North Sea along the eastern coastline of the United Kingdom as was demonstrated by the events in 1953 and most recently in December 2013. Lowestoft has very limited existing tidal flood defences and without this investment, the town will remain at significant risk.

The part of the project addressing tidal flooding covers the areas of Lowestoft deemed to be at significant risk between the Outer Harbour and the western end of Lake Lothing at Mutford Lock.

In deciding the best ways in which we should manage flood risk in Lowestoft now and in the future, we have carried out a number of studies looking at:

- the current extent and risk of flooding
- how flood risk could increase in the future through the impacts of climate change
- the costs and benefits of providing different flood risk management solutions

How are we assessing what solutions will work best?

In assessing the possible options the following criteria have been used to decide which offer the best with ways to manage tidal flood risk in Lowestoft now and in the future:

- Level of flood risk reduction
- Impact on navigation
- Impact on residents and businesses
- Environmental and landscape impact
- Impact on highways and bridges
- Buildability
- Delivery timescale
- Cost – capital and whole life
- Potential regeneration benefits
- Potential benefits linked with 3rd Crossing project

Flooding from rivers and extreme rainfall

Vulnerability to surface water flooding in Lowestoft, particularly around Kirkley Stream, Aldwick Way and Velda Close, was starkly demonstrated in July 2015. The project is exploring options to reduce the risk to properties vulnerable to flooding from extreme rainfall. The criteria for assessing potential options are the same as for the tidal project. Extensive modelling has already been completed and final options will be consulted on during October and November. These include:

- Upstream storage
- Sustainable Drainage Systems
- Improving conveyance of water through the stream
- Installing non-return valves
- Local mitigation measures such as property level protection
- Construction of a flood wall

As well as further studying the technical aspects of these options, we are looking at whether they provide benefits during more frequent and / or more extreme storms. Our ability to deliver some of these options will depend on the availability of suitable land and landowners' co-operation.

Maintenance has already taken place to improve capacity and conveyance and a planned programme of future maintenance is already in place.

Project progression

In May 2016 the Environment Agency's Large Project Review Group (LPRG) approved our Strategic Outline Case. In June 2017 Waveney District Council, as lead council, approved the progression of the project to Outline Business Case and the development of a Transport Works Act Order (TWAo) application.

The Outline Business Case will be presented to LPRG in early 2018. This is the final stage to pass through with the Environment Agency and will then allow the project to access Flood Defence Grant in Aid funding.

A Parliamentary Agent has been appointed (Bircham, Dyson, Bell) to progress the TWAo application. Once the Outline Business Case has been successfully signed off by LPRG and Waveney District Council and Suffolk County Council, a planning application can be submitted mid year 2018 for the construction of the tidal walls. Once the planning application has been approved then construction can begin.

Dependent upon the public consultation starting in late October, a preferred option for the pluvial and fluvial element of the project has been agreed then work can progress post LPRG approval of the Outline Business Case in spring 2018.

How has the project been procured?

The project has been procured through the SCAPE procurement framework. SCAPE is a framework owned and designed by five local authorities. The project is managed through the Civil Engineering and Infrastructure package and delivered by Balfour Beatty.

How is the project addressing the potential of tidal flooding to Lowestoft in the interim period?

In November 2016 we took delivery of 1400m of temporary flood barriers which will help to reduce the risk of flooding to Lowestoft whilst the main project is being completed. We have worked closely with partners such as the blue light services, the Environment Agency, Associated British Ports and Highways England to make sure that we have the right plans and people in place. So should we receive advice

that the flood barriers need to be put up, everything is in place to ensure that this can happen in a timely fashion.

Such an event happened in January 2017 and the barriers were deployed safely and in time, although due to a change in wind direction not tested at this time. On 26th and 27th September the temporary barriers will be part of an annual emergency planning session which will see them deployed and equipment checked ahead of winter. The Lowestoft temporary flood barriers are managed by Coastal Partnership East on behalf of Waveney District Council and deployed in partnership with the Water Management Alliance and Waveney Norse.



Before



After

ABP Port Entrance

- Steel mitre gates will be installed on both the incoming and outgoing road to Port. The gate height will be approximately 1.3m.
- The walls leading from Waveney Road to the flood walls will comprise brick clad steel sheet pile flood wall with concrete cap. The height of wall will vary from 1.2-1.3m above road level. The wall will incorporate steel sheet pile cut-off below ground to stop seepage.
- Security fencing will be installed on top of and flush with the outer face of the proposed flood wall. Finished level of the fence will be 2.4m above the footpath level as specified by the ABP.
- Security fencing will be in accordance with Department for Transport Maritime Security requirement and as per agreement with ABP (Weld mesh fence to BS 1722.14)
- A section of the proposed flood wall will comprise demountable flood barriers to provide an easy access or larger size trucks to enter straight into the port area. The demountable barriers for this section will be for the full height (to 2.4m above road level) and it is envisaged that ABP will only remove these demountable barriers as and when access for larger size trucks will be required.
- The foot path on the north-western side of the proposed flood gates will comprise demountable barrier.
- Demountable barriers alignment will incorporate steel sheet pile cut-offs below ground to arrest seepage. Where utility services will prohibit installation of cut-off wall, injection grouting will be utilised to reduce seepage.
- On the ground, a base or sill beam will provide a levelled surface for the installation of demountable barriers. The sill beam will be flush with the existing ground and will delineate alignment of the proposed demountable barriers for the users to keep it clear.
- Sill beam will incorporate fixing bolts (set below ground level) for vertical supports channels for demountable barriers at regular interval.



Before



After

Waveney Road

- Proposed flood wall will follow the alignment of existing palisade fence along the Waveney Road
- The flood wall will comprise steel sheet pile brick clad flood wall with concrete cap, 600-700mm high above footpath level and will incorporate cut-off wall below ground to arrest seepage. Where utility services will prohibit the installation of a cut-off wall, injection grouting will be utilised to reduce seepage
- Security fencing will be installed on top of and flush with the outer face of the proposed flood wall. Finished level of the fence will be 2.4m above the footpath level as specified by the ABP.
- Security fencing will be in accordance with Department for Transport Maritime Security requirement and as per agreement with ABP (Weldmesh fence to BS 1722.14)



Before



After

Station Square Part 1

- Proposed flood wall will follow the alignment of existing palisade fence along the Waveney Road
- The flood wall will comprise steel sheet pile brick clad flood wall with concrete cap, 600-700mm high above footpath level and will incorporate cut-off wall below ground to arrest seepage. Where utility services will prohibit the installation of a cut-off wall, injection grouting will be utilised to reduce seepage
- Security fencing will be installed on top of and flush with the outer face of the proposed flood wall. Finished level of the fence will be 2.4m above the footpath level as specified by the ABP.
- Security fencing will be in accordance with Department for Transport Maritime Security requirement and as per agreement with ABP (Weldmesh fence to BS 1722.14)



Before



After

Station Square Part 2

- Proposed flood wall will follow the alignment of existing palisade fence along the Waveney Road
- The flood wall will comprise steel sheet pile brick clad flood wall with concrete cap, 600-700mm high above footpath level and will incorporate cut-off wall below ground to arrest seepage. Where utility services will prohibit the installation of a cut-off wall, injection grouting will be utilised to reduce seepage
- Security fencing will be installed on top of and flush with the outer face of the proposed flood wall. Finished level of the fence will be 2.4m above the footpath level as specified by the ABP.
- Security fencing will be in accordance with Department for Transport Maritime Security requirement and as per agreement with ABP (Weldmesh fence to BS 1722.14)



Before



After

Tidal Flood Barrier

- Proposed tidal barrier will comprise a concrete structure and steel mitre gate aligned with Bascule Bridge. Below the river bed, steel sheet pile cut offs will be installed to stop seepage from underneath the structure
- The barrier will be 28m clear width for port and navigation use.
- Gate top level will be approximately 600mm higher than the existing road level at Bascule Bridge to provide 1 in 200 years standard of defence (includes allowance for the expected climate change over next 100 years).
- Tidal barrier gate will be operated and controlled from existing control building, using hydraulic rams through the existing power supply.
- Floodwalls either side of the barrier will comprise demountable flood barriers and will only be deployed when required.
- Demountable barriers alignment will incorporate steel sheet pile cut-offs below ground to arrest seepage. Where utility services will prohibit installation of cut-off wall, injection grouting will be utilised to reduce seepage.
- On the ground, a base or sill beam will provide a levelled surface for the installation of demountable barriers. The sill beam will be flush with the existing ground and will delineate the alignment of the proposed demountable barriers for the users to keep it clear.
- The Sill beam will incorporate fixing bolts (set below ground level) for vertical supports channels for demountable barriers at regular interval.



Before



After

Yacht Club (north side)

- The proposed glass flood wall will continue to the end of the existing awning. Further to the north, the proposed flood defence along the edge of quay side will comprise demountable flood barriers (with supports). The demountable barriers will continue around the boat slipway and through the boat storage area to meet the proposed barrier.
- Along the suspended quay slab, steel beams will be installed below suspended slab to transfer load from the proposed demountable barriers to the quay walls structure
- Height of demountable barriers will vary from 800mm to 1m
- Demountable barriers alignment will incorporate steel sheet pile cut-offs below ground to arrest seepage. Where utility services will prohibit installation of cut-off wall, injection grouting will be utilised to reduce seepage.
- On ground, a base or sill beam will provide a levelled surface for the installation of demountable barriers. The sill beam will be flush with the existing ground and will delineate the alignment of the proposed demountable barriers for the users to keep it clear.
- Sill beam will incorporate fixing bolts (set below ground level) for vertical supports channels for demountable barriers at regular interval.



Before



After

Yacht Club (south side)

- The south side of the Royal Norfolk & Suffolk Yacht Club building will comprise 1m high glass wall
- Access point to marina will have demountable aluminium barrier to slotted into guide channels incorporated into the glass wall.
- Steel beams will be required under the suspended slab to support and transfer load from proposed glass wall to the quay structure



Before



After

Yacht Club (central view)

- The flood defences in front of Royal Norfolk & Suffolk Yacht Club (RN&SYC) will comprise 1m high glass wall along the existing awning and on south side of the yacht club building.
- Access point to marina will comprise demountable aluminium barrier to slot into the guide channels incorporated in the glass wall.
- Steel beams will be required under the suspended slab to support and transfer load from proposed glass wall to the quay structure.



Before



After

South Pier

- Existing wall along the south pier amusement arcade will be replaced with 700-800mm high brick clad wall with concrete coping
- Above the proposed wall, flood defence will comprise glass panels to provide flood defence benefit while providing unhindered view to the marina and the outer harbour
- Finish height of the glass panel will be 1.8 to 2m above the pathway or road level
- A glass panel wall will be flush with the outer face of the brick clad wall
- The last length of the flood defence across the south pier will comprise demountable barriers section.
- Demountable barriers alignment will incorporate steel sheet pile cut-offs below ground to arrest seepage. Where utility services will prohibit installation of cut-off wall, injection grouting will be utilised to reduce seepage.
- On the ground, a base or sill beam will provide a levelled surface for the installation of demountable barriers. The sill beam will be flush with the existing ground and will delineate the alignment of the proposed demountable barriers for the users to keep it clear.
- Sill beam will incorporate fixing bolts (set below ground level) for vertical supports channels for demountable barriers at regular interval.



Before



After

Outer South Pier

- Existing wall along the south pier amusement arcade will be replaced with 700-800mm high brick clad wall with concrete coping
- Above the proposed wall, flood defence will comprise glass panels to provide flood defence benefit while providing unhindered view to the marina and the outer harbour
- Finish height of the glass panel will be 1.8 to 2m above the pathway or road level
- A glass panel wall will be flush with the outer face of the brick clad wall
- The last length of the flood defence across the south pier will comprise demountable barriers section.
- Demountable barriers alignment will incorporate steel sheet pile cut-offs below ground to arrest seepage. Where utility services will prohibit installation of cut-off wall, injection grouting will be utilised to reduce seepage.
- On the ground, a base or sill beam will provide a levelled surface for the installation of demountable barriers. The sill beam will be flush with the existing ground and will delineate the alignment of the proposed demountable barriers for the users to keep it clear.
- Sill beam will incorporate fixing bolts (set below ground level) for vertical supports channels for demountable barriers at regular interval.



Before



After

Hamilton Road Part 1

- The proposed floodwall from the western end of Hamilton Road to the entrance of Kwik fit car garage will comprise brick clad steel sheet pile wall with concrete coping, incorporating cut-off below ground to arrest seepage and provide stability to the flood wall. The wall height above ground will vary from 500-800mm
- From Kwik fit garage to Associated British Ports rear entrance, the length will comprise demountable flood barriers with a height of 800mm to 1.2m
- Demountable barriers sections will incorporate steel sheet pile cut-offs below ground to arrest seepage. Where utility services will prohibit installation of cut-off wall, injection grouting will be utilised to reduce seepage.
- On ground, a base or sill beam will provide a levelled surface for the installation of demountable barriers. The sill beam will be flush with the existing ground and will delineate the alignment of the proposed demountable barriers for the users to keep it clear.
- Sill beam will incorporate fixing bolts (set below ground level) for vertical supports channels for demountable barriers at regular interval.
- Further east of the demountable section, the floodwall will comprise concrete clad steel sheet pile wall incorporating cut-off. Where utility services will prohibit installation of cut-off wall, injection grouting will be utilised to reduce seepage. The height of the flood wall above ground will vary from 1.2-1.3m.



Before



After

Hamilton Road Part 2

- The proposed floodwall from the western end of Hamilton Road to the entrance of Kwik fit car garage will comprise brick clad steel sheet pile wall with concrete coping, incorporating cut-off below ground to arrest seepage and provide stability to the flood wall. The wall height above ground will vary from 500-800mm
- From Kwik fit garage to Associated British Ports rear entrance, the length will comprise demountable flood barriers with a height of 800mm to 1.2m
- Demountable barriers sections will incorporate steel sheet pile cut-offs below ground to arrest seepage. Where utility services will prohibit installation of cut-off wall, injection grouting will be utilised to reduce seepage.
- On ground, a base or sill beam will provide a levelled surface for the installation of demountable barriers. The sill beam will be flush with the existing ground and will delineate the alignment of the proposed demountable barriers for the users to keep it clear.
- Sill beam will incorporate fixing bolts (set below ground level) for vertical supports channels for demountable barriers at regular interval.
- Further east of the demountable section, the floodwall will comprise concrete clad steel sheet pile wall incorporating cut-off. Where utility services will prohibit installation of cut-off wall, injection grouting will be utilised to reduce seepage. The height of the flood wall above ground will vary from 1.2-1.3m.



Considering the environment

In accordance with relevant legislation, the tidal barrier element of the LFRMP (the tidal barrier scheme) is considered to require a statutory Environmental Impact Assessment (EIA) to inform the applications for the various consents required for the scheme – the Transport Works Act Order, marine licence and planning consent. A Preliminary Environmental Information Report (PEIR) has been prepared to provide a preliminary analysis of the environmental issues, risks and opportunities associated with the tidal barrier scheme and identify any potential effects that will require further assessment – i.e. the 'scope' of the EIA. It will be used to support a request for a statutory EIA scoping opinion for the tidal barrier

scheme from the consenting authorities for the scheme: The Secretary of State for Environment, Food and Rural Affairs and the Marine Management Organisation. The PEIR considers only the tidal barrier element of the LFRMP.

We would welcome your feedback on the PEIR. You can access a PDF version on our website www.lowestoftfrmp.org.uk an online feedback form can also be found here.

If you would like a printed copy of the PEIR and feedback form please email sharon.bleese@eastsoffolk.gov.uk

Tell us what you think

Your views are extremely important to the development and successful delivery of the Lowestoft Flood Risk Management Project. We'd like to know what you think about our proposals for the look of the walls and barrier. If you are a river user we'd like to hear how you feel this might affect you. We would also like your feedback about the Preliminary Environmental Impact Report.

Telling us what you think is simple, please visit our website www.lowestoftfrmp.org.uk and you can complete our feedback form online. Or if you'd like a hard copy just email sharon.bleese@eastsuffolk.gov.uk

Keeping in touch

If you'd like to be kept in touch with the project's development please email Project Manager Sharon Bleese at sharon.bleese@eastsuffolk.gov.uk

You can also contact us by telephone on **01502 523346**

Or by post:

Sharon Bleese, Project Manager
Lowestoft Flood Risk Management Project
Waveney District Council
Riverside
4 Canning Road
Lowestoft NR 33 0EQ

Our Partners



Managed by



Our Contractors



For more details:

Visit our website

www.lowestoftfrmp.org.uk

Or contact

Sharon Bleese, Project Manager

Waveney District Council

01502 523346

sharon.bleese@eastsoffolk.gov.uk



LOWESTOFT

FLOOD RISK MANAGEMENT PROJECT

Welcome



Introduction to the project
Sharon Bleese, Project Manager

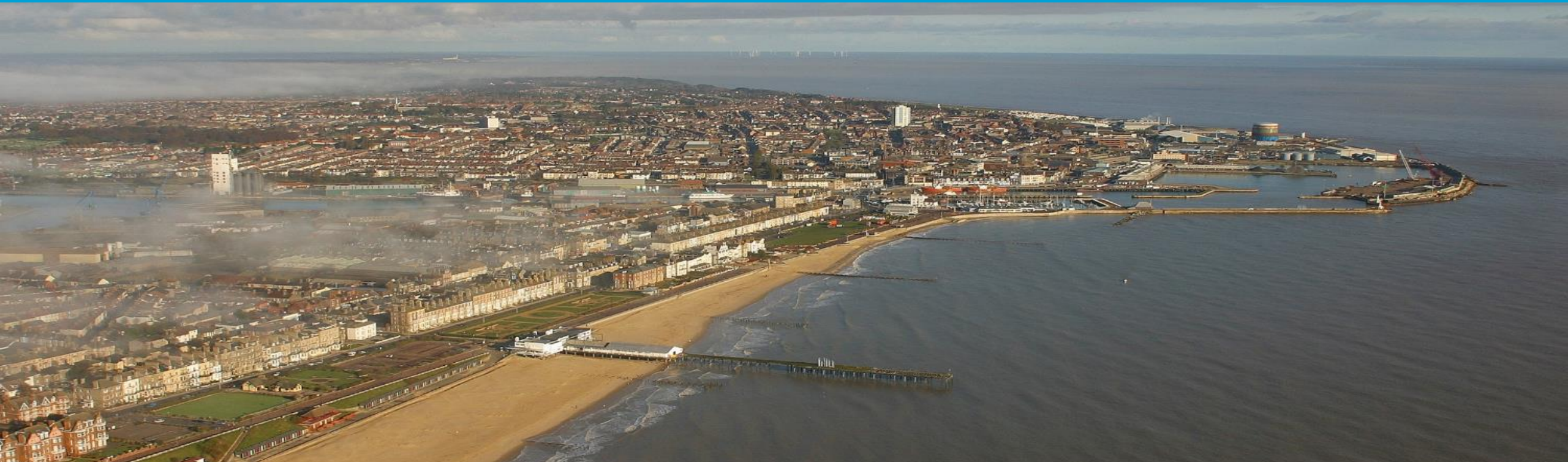
Lowestoft Flood Risk Management Project

reducing risk, supporting growth, creating opportunities

ch2m



Balfour Beatty



December 2013 tidal surge impacts

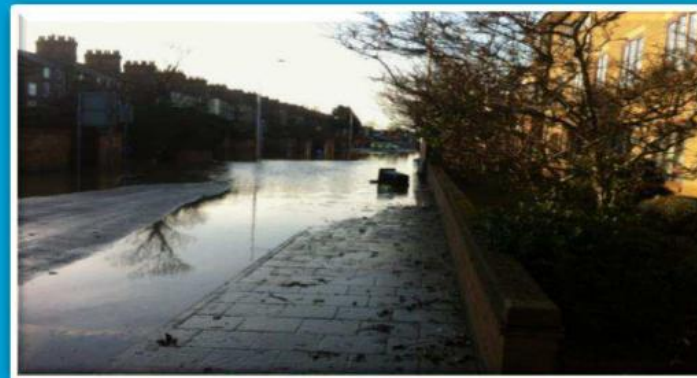
ch2m



Balfour Beatty



- Largest in Lowestoft since 1953
- Over 160 properties affected
- Businesses brought to standstill
- Highlighted the inadequacy of Lowestoft's defences and the impact on existing and potential growth



Economic study headlines (1)

Proportion of current economic footprint at risk of flooding under two scenarios

Without climate change With climate change

Scenarios	Jobs	GVA	Jobs	GVA
1. Do minimum	22%	23%	63%	71%
1. Preferred tidal gate and wall scheme	2%	2%	2%	2%

Total jobs: 10,900

Total GVA (million) £499

Economic study headlines (2)

Future economic footprint (assuming AAP delivered)

Proportion of future economic footprint at risk of flooding under two scenarios

Without climate change

With climate change

Scenarios	Jobs	GVA	Jobs	GVA
1. Do minimum	28%	27%	70%	77%
1. Preferred tidal gate and wall scheme	2%	2%	3%	3%

Total jobs: 14,400

Total GVA (million) £694

Lowestoft Flood Risk Management Project

Reducing tidal risk - temporary defences





Tidal Flood Risk Management

Ben Purkiss, CH2M

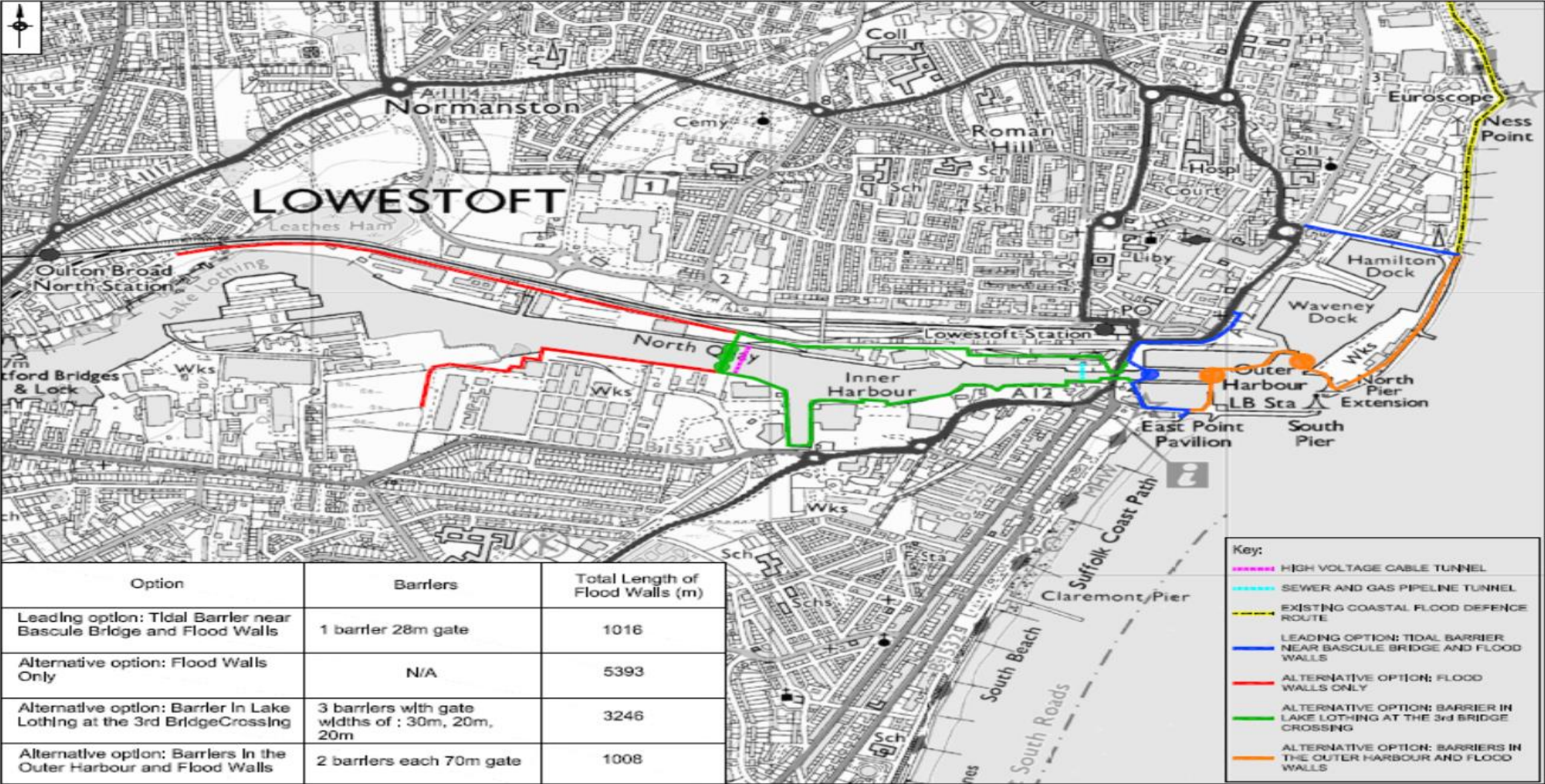
Lowestoft FRMP – Tidal scheme

Options considered

1. Do nothing – walkaway
2. Do minimum – maintain status quo
3. **Improve: Walls only**
4. Improve: Outer harbour barriers & walls
5. **Improve: Bascule bridge barrier & walls**
6. **Improve: Barriers at Third Crossing & walls**
7. Temporary flood defences
8. Property level resilience

(Shortlisted options in bold)

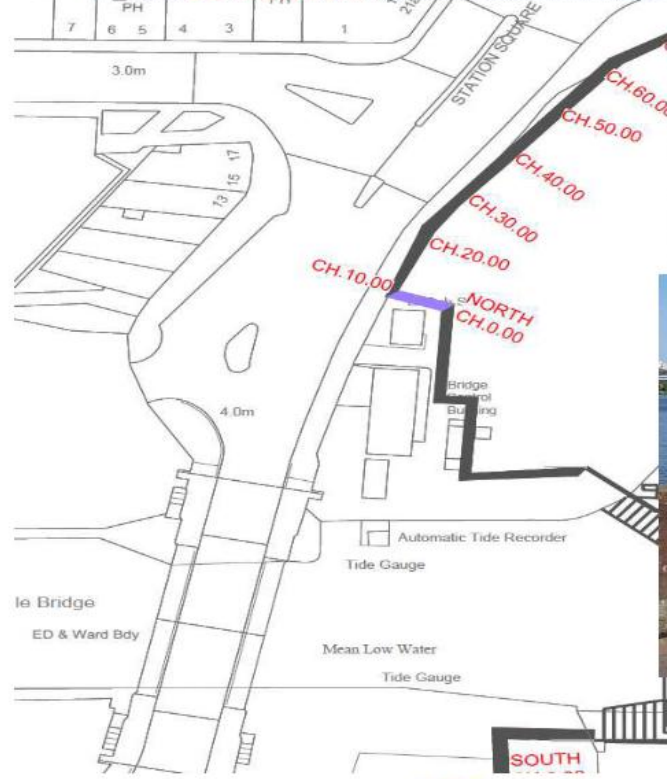
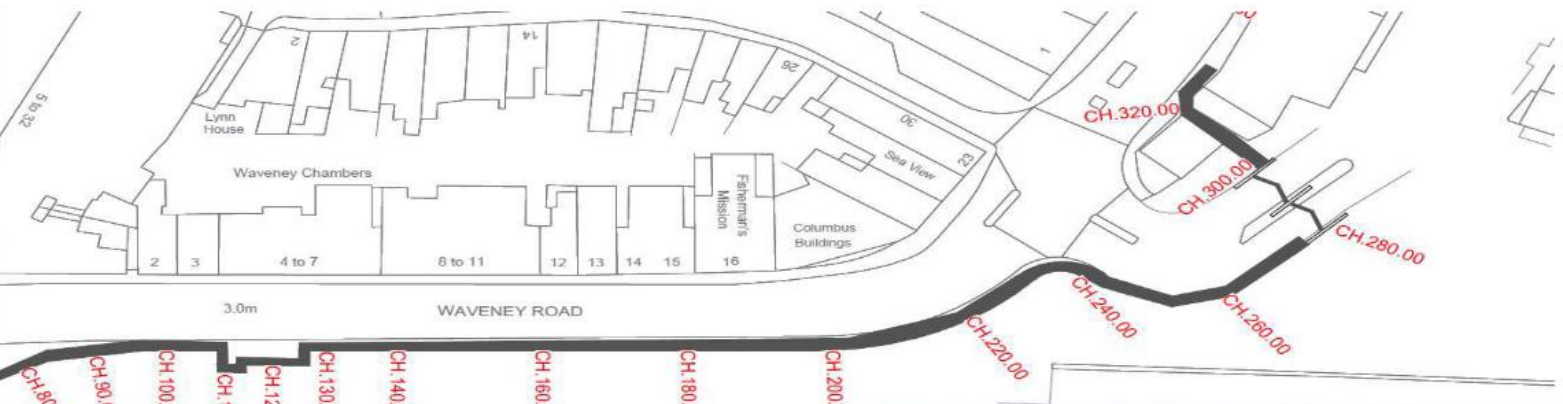
Options considered



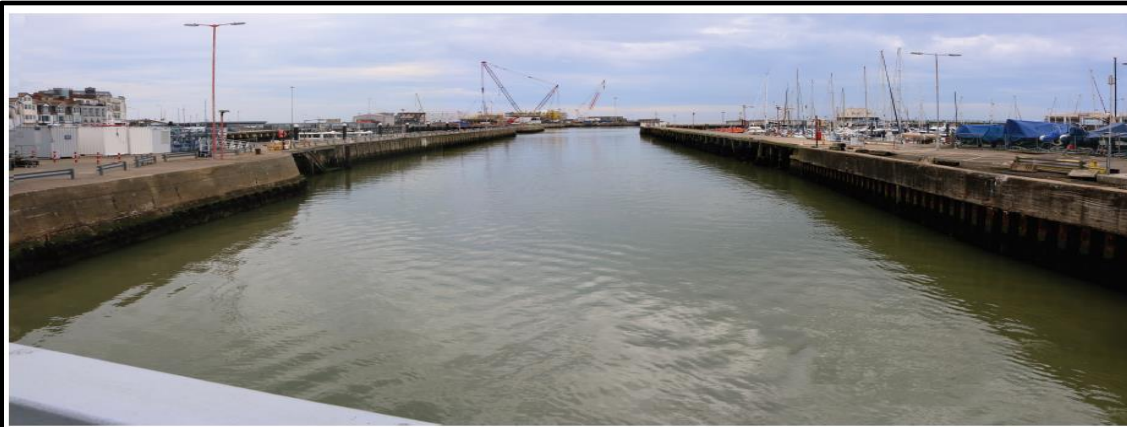
Key shortlisted options

3. Improve – flood walls only	Discounted, due to: <ul style="list-style-type: none"> • Tidal inundation into Lake Lothing. • Increased flood risk - 5 times longer sea frontage. • Walls built on existing quay wall, interact with major services, businesses, road/ rail network. • Raising of bascule bridge or road closure for temporary demountable at Waveney road beyond year 50
5. Improve – Bascule Bridge barrier & walls	Recommended as the preferred option, due to: <ul style="list-style-type: none"> • Shorter length of floodwalls. • Single barrier in narrow river channel.
6. Improve – Barriers at Third Crossing & walls	Discounted, due to: <ul style="list-style-type: none"> • 3 barriers, longer length of walls, interaction with quay walls, major services • Disruption to quayside businesses during construction. • Raising of Bascule Bridge/road closure for temporary demountable Waveney Road beyond year 50. • New control building required.

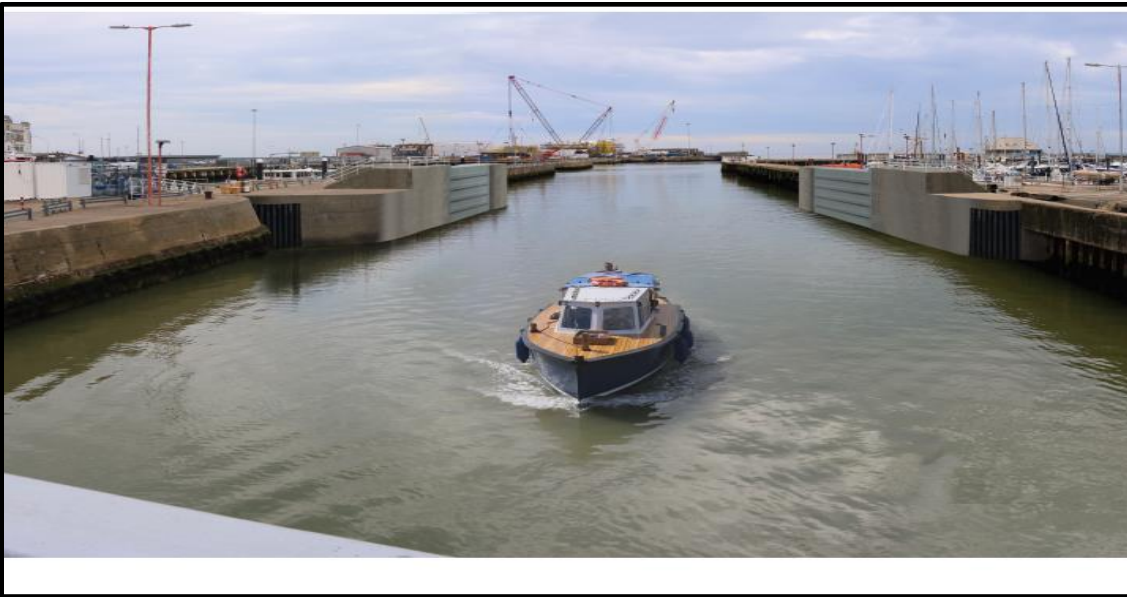
Waveney Road



Tidal barrier – before and after

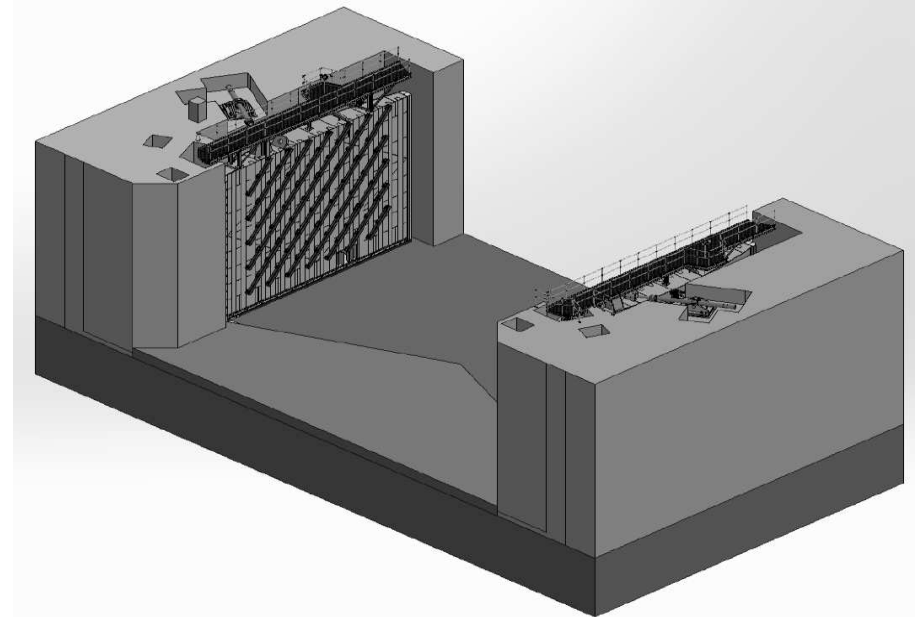
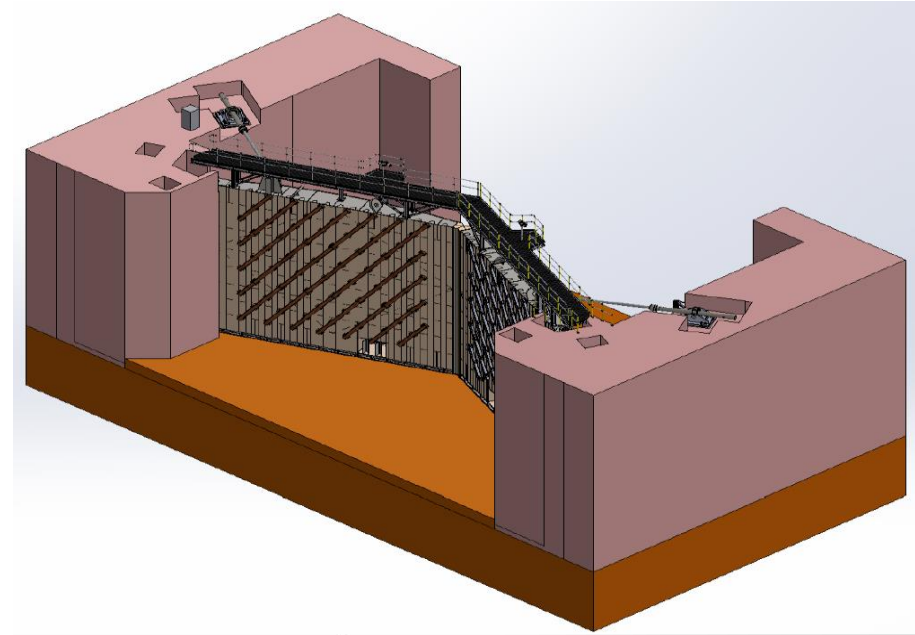


Before



Tidal Barrier

- Mitre Gates
- Barrier width- consultation with ABP



Station square- before and after



Waveney Road- before and after



Port Entrance- before and after



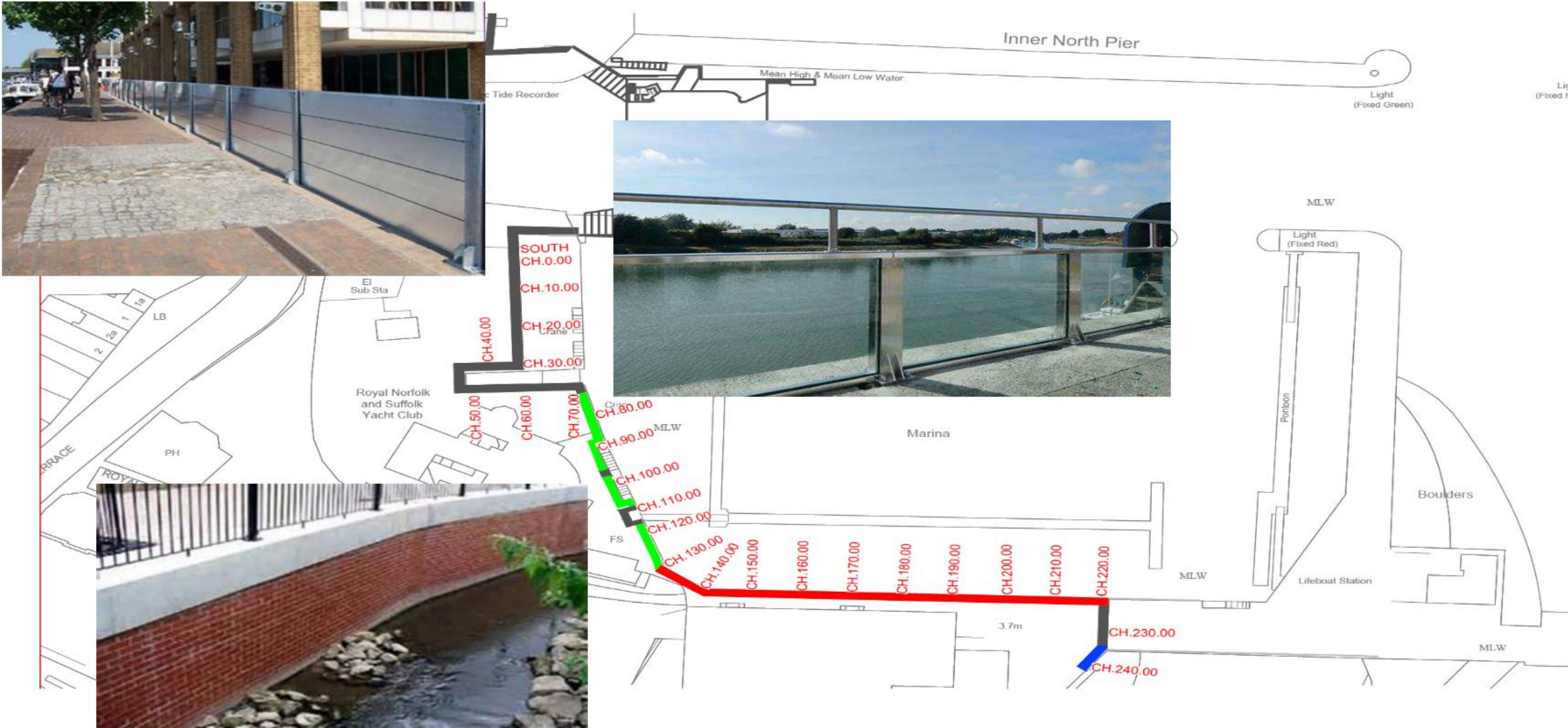
Hamilton Road



Hamilton Road – before and after



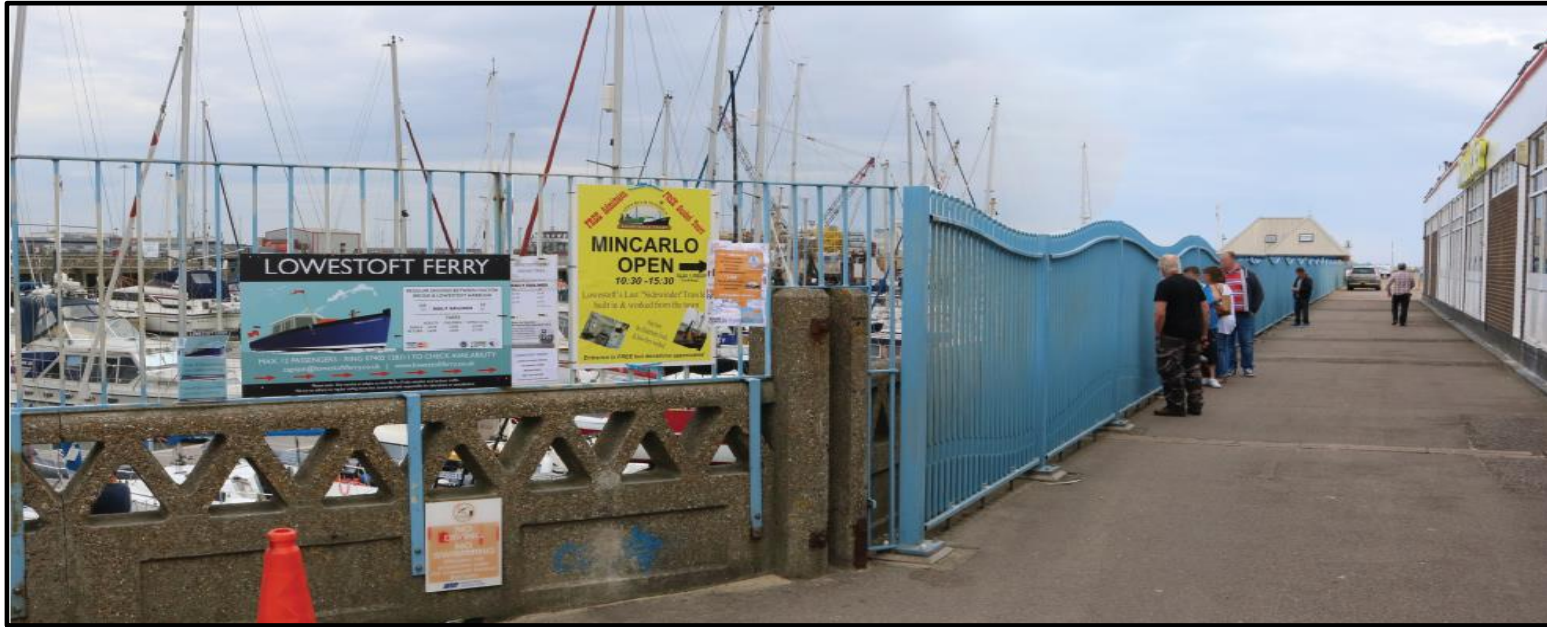
Yacht Club and South Pier/Beach



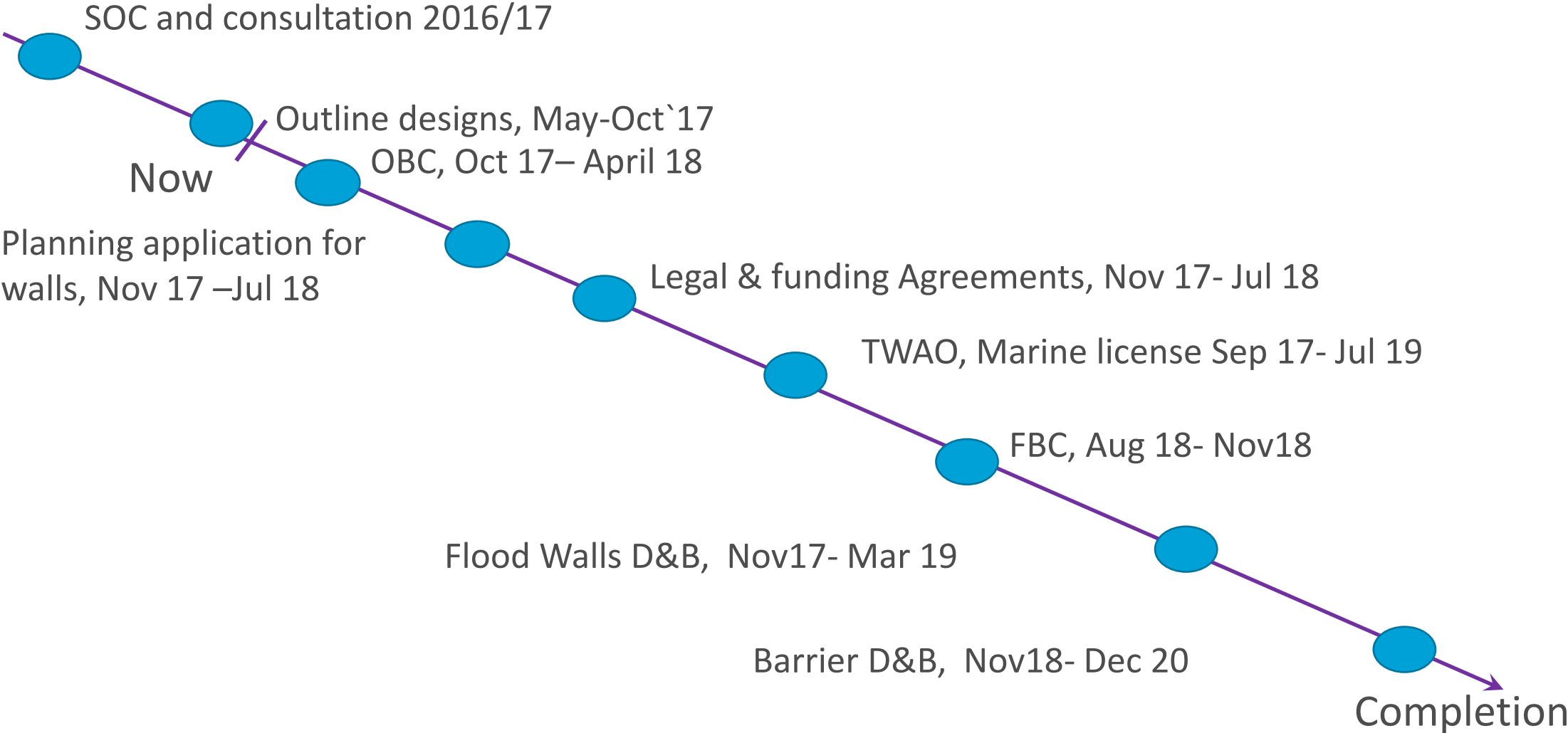
Royal Norfolk & Suffolk Yacht Club – before and after



South Pier- before and after



Further activities and programme



Thank You

ch2m



Balfour Beatty



Summary and next steps
Sharon Bleese, Project Manager



LOWESTOFT

FLOOD RISK MANAGEMENT PROJECT

The

Lowestoft Flood Risk Management Project

team invites you to an Open Day

An opportunity to view the plans and visualisations to reduce the flood risk to Lowestoft and we'd like to hear what you think

During the December 2013 tidal surge over 160 homes and businesses in Lowestoft were flooded. In addition to this road and rail networks were significantly disrupted.

The Lowestoft Flood Risk Management Project is about developing a way forward to reduce the risk of flooding from the sea, rivers and from extreme rainfall. The target date for completion is 2020 and when finished, the project will support the economic growth and regeneration of Lowestoft and reduce the risk of flooding to existing homes and businesses.

**2pm - 7pm - Thursday 30th November 2017
Riverside, 4 Canning Road,
Lowestoft, NR33 0EQ**

Visitor parking available at 2 Canning Road

You are invited to drop-in to the event any time between 2pm – 7pm. Presentations about the project will be repeated at each of the times below

- 2.30pm
- 4.30pm
- 6.30pm

We are seeking your views on:

- a potential scheme to reduce flood risk to Lowestoft from rivers and extreme rainfall (fluvial)
- proposals for the look of the walls and barrier to reduce flooding from the sea (tidal)
- the environmental aspects for the tidal elements of the project
- views from the river and harbour users

Plans and visualisations are available to view online during the consultation at **www.lowestoffrmp.org.uk**

This public consultation is open between
30th October – 14th December 2017

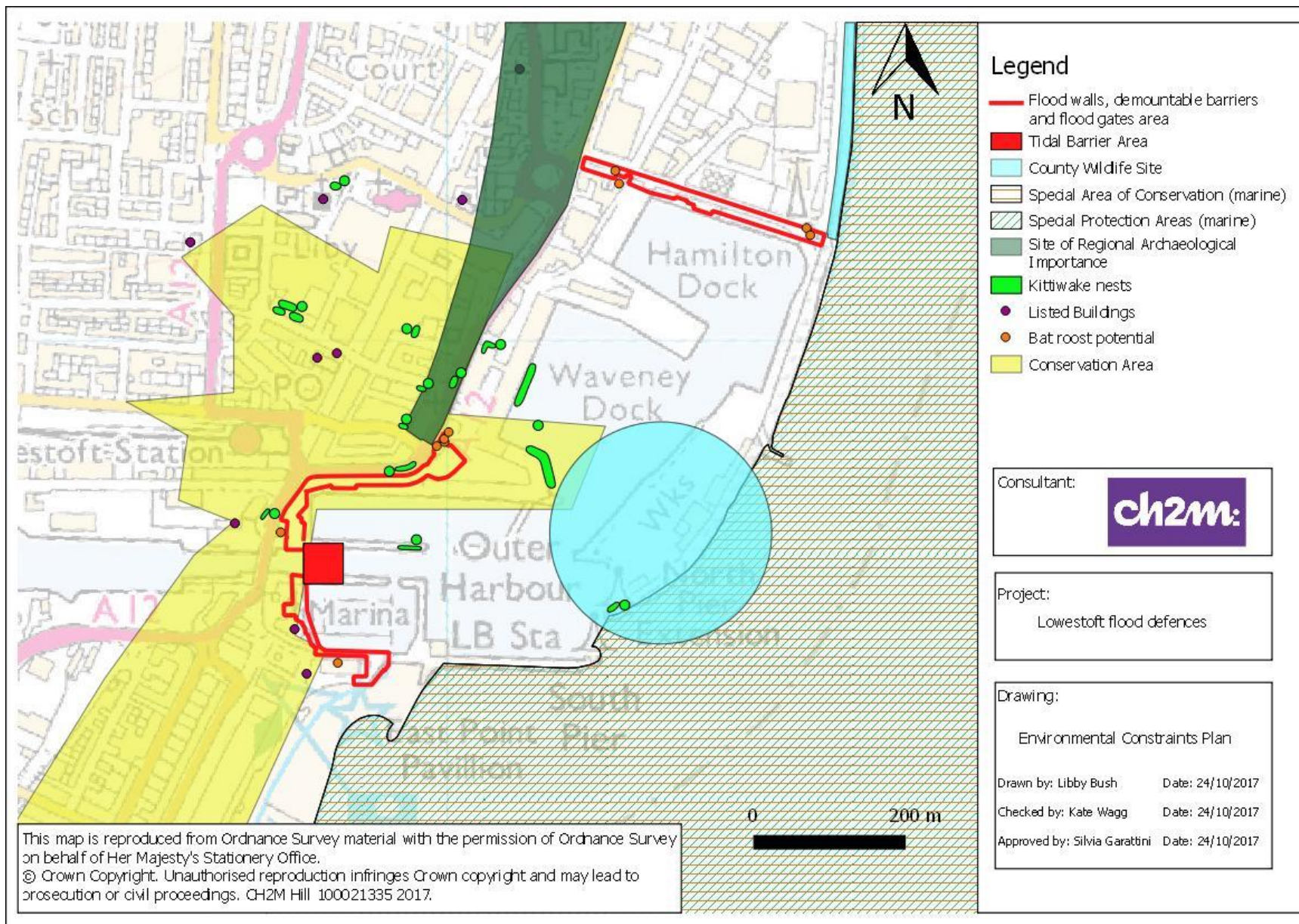


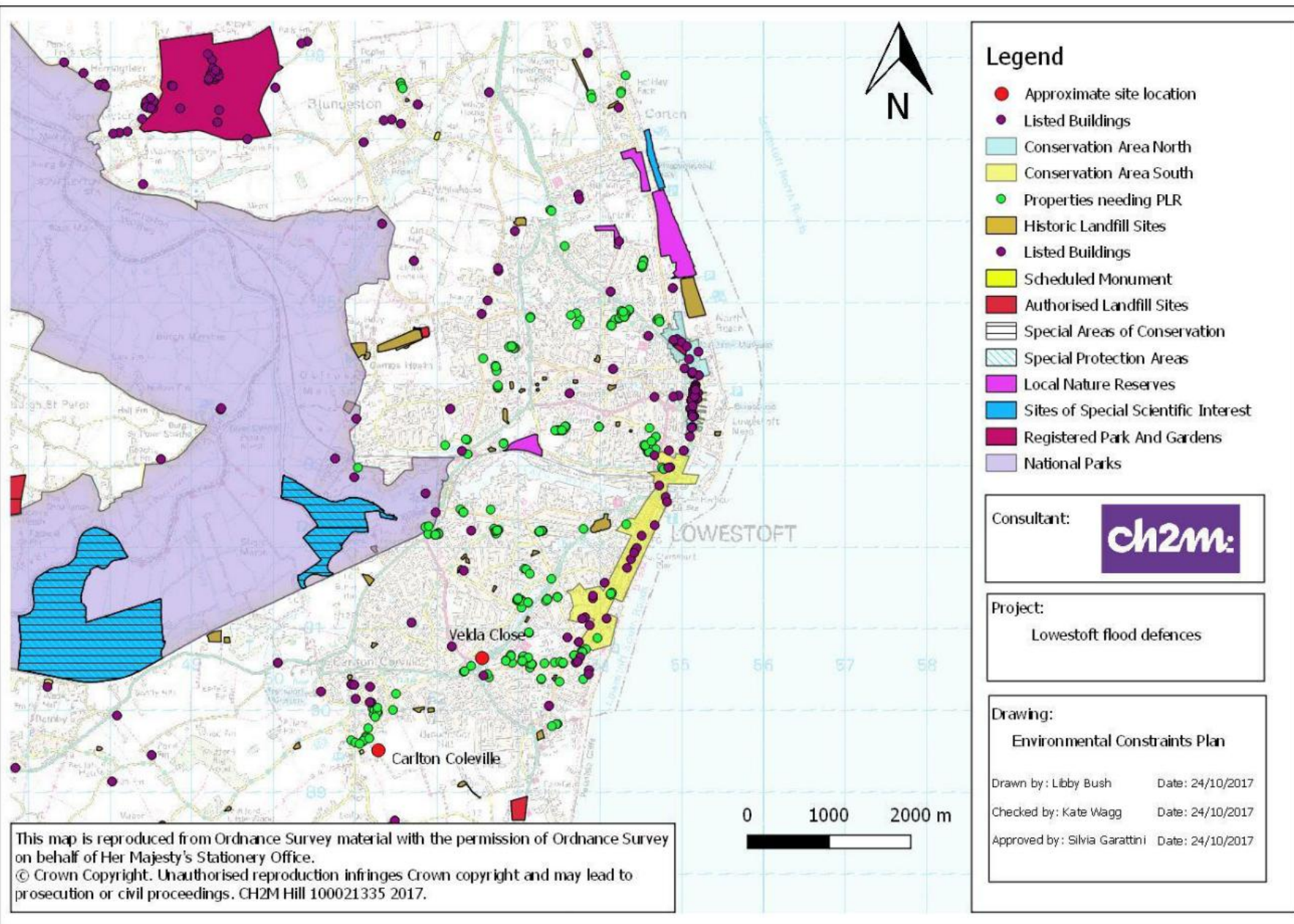
Environmental Considerations Ben Purkiss, CH2M

Lowestoft FRMP

Environmental assessment requirements

- Tidal barrier – EIA being undertaken to support TWAO and marine licence. Requests for scoping opinions being made.
- Flood walls - do not require statutory EIA for planning consent, confirmed by Waveney DC.
- Pluvial and fluvial measures – statutory EIA unlikely, but to be confirmed.





Environmental studies undertaken

- Preliminary ecological appraisal, inc habitat survey
 - Bat Risk Assessment
 - Nesting Kittiwake Survey
- Cultural heritage desk based assessment
- Outline landscape and visual impact appraisal
- Geo-technical desk study and ground investigation

- Preliminary Water Framework Directive assessment

Tidal barrier and walls: key topics and issues

- **All topics**
 - Significant benefits from reduction in flood risk
- **Biodiversity, flora and fauna**
 - Designated sites: subject to consultation with Natural England
 - Habitats and species: subtidal habitats and species, roosting bats, nesting birds, spread of Japanese Seaweed
- **Historic environment**
 - Setting of designated heritage assets (e.g. listed buildings, Conservation Area)
 - Unknown archaeological assets which may be present within the footprint of the proposed scheme
- **Townscape**
 - Potential impacts on a range of visual receptors including listed buildings and the Conservation Area

Tidal barrier and walls: key topics and issues

- **Transport and navigation**

- potential for impact on the local road network, particularly the A47
- navigation through the Bascule Bridge channel and within the Inner and Outer Harbours

- **Population and health**

- noise and vibration disturbance to local residents and businesses
- impact on port operations, disruption to boat users, the Lowestoft Marina and The Royal Norfolk and Suffolk Yacht Club

- **Water and hydromorphology**

- potential for impact on underlying groundwater aquifer
- risks to water quality and biology
- changes to the ecology and morphology of the estuary and coast

Tidal barrier and walls: next steps

Tidal flood barrier

- Statutory EIA to be informed by scoping opinions.

Flood walls

- Environmental report to accompany planning application.
Requirements being confirmed via pre-application discussions.
 - Noise – background noise measurements and level of noise assessment to be agreed with the Waveney District Council Environmental Health.
 - Archaeological mitigation to be agreed with Suffolk County Council and Historic England

Pluvial and fluvial scheme: next steps

- Specific studies underway of affected areas.
- Pre-application discussions with Waveney District Council needed.
- Statutory EIA - unlikely to be required.
- Supporting information requirements to be determined i.e. environmental report.



Any Questions?

Tidal

1. What are your concerns about the project?

- Glass wall desired for Waveney Road - more aesthetically pleasing
- Want to see visualisations of new security fencing
- Confusion over height of wall
- Clear timescale needed - how will construction work with 3rd Crossing and will TWAO impact
- Who is responsible for deployment of barriers and demountables
- Will it last? - appearance in 50 years
- Who approves the designs?
- Will local companies be used for construction?-clear communication about construction is needed and provide a sample section of wall for people to engage
- Is funding available?
- Tourists and the England Coastal Path need to be considered
- Work with economic development teams
- Is there an possibility of overtopping?
- Could there be a secondary surge? - would a barrier elsewhere in the Broads help this?
- Wind farm access to port and port security
- Get young people involved
- Issues over size of barrier and how control tower will work
- Minimise impact on boat users and provide safety moorings
- Cleaning and maintenance of glass
- Aldwyk Way issues

2. What do you consider are the positives?

- Opportunity to work with Broads Authority
- Linking with Broadland Futures
- Minimal local impact
- Employment opportunities - local companies, traing, economic uplift
- Staying dry
- Regeneration, investment, business in Lowestoft
- Showcases British Engineering
- Fits in with town aesthetically
- Health and Safety - easy viewing (glass)

3. Is what we are presenting clear?

- Clarity needed for flap valves in Lake Lothing
- Less abbreviations and technical terms
- Some visualisations clear others not so

4. Have we considered everything?

- Need for an archaeological survey - may find WW2 bombs
- Life boat other side of barrier in case of event

- Funding concerns
 - Is there a backup for the demountables?
 - Army help?
 - Is storage secure?
 - Explained well and professional
 - 3rd Crossing communication
 - Clarify intension in the case of a surge from Broads side of lock
- 5. Is there anything missing?**
- Map in consultation document
 - Defence position north of the harbour?
 - Inter-relation between this and the project?
 - Need to keep doing this
 - Good example of collaborative partnership working
 - Flooding was really bad in Station Square and London Road south
 - Sewers backing up was bad and cause of flooding - porous tarmac?
 - Discussion of importance of making sure Lake Lothing secure
 - Positives having barrier wide as possible
 - Positive that disruption to port minimised
- 6. Do you largely agree with what we are presenting?**
- Yes

Environment

- 1. What are your concerns about the project?**
- Marine mammals and shell fisheries
 - Dredging and sediment quality
 - Identify potential issues early - impact on flows, river users and bathing water quality, Japanese seaweed
 - Fence required for security of port but gives wrong feel to area
 - Transport and congestion
 - Issues around clearance of Kirkley Stream
 - Vandalism of glass and glare
 - Timing of construction work
 - Issues with surface water
 - Avoid abbreviations
 - Long term maintenance and investment needed
 - Impact on local wave environment and silt build up
 - Consult Historic England on proposal/Yacht club
- 2. What do you consider are the positives?**
- No impact on beach or environmental concerns
 - Working with 3rd crossing team to share information

- Short term impacts
- Ensure Carlton Colville diversion actively improves situation
- Development and investment
- Sense of place and social benefits - wellbeing
- Proactive approach
- Passive property protection is age friendly and inclusive
- Environmental benefits vs. not doing something
- Health and safety issues well addressed
- Glass walls will not even be seen as flood defence by most
- Insurability benefits

3. Is what we are presenting clear?

- Ensure townscape considered – street furniture – enhancement
- Environmental screening of Kirkley stream options
- Certainty over ability of diversion option to be delivered – need to ensure policy reflects aspirations of project
- Traffic management
- Visual/appearance – ensure not impact current/future

4. Have we considered everything?

- Consider traffic issues during construction and plant movement
- Consult Highways England and others to ensure project isn't to the detriment of future plans
- The maintenance and upkeep of assets is key e.g. around south pier
- Risk of damage/vandalism to glass walls needs to be addressed – protective layer
- Red brick might stand out – try to match nearby structures – Somerleyton yellow bricks – link to heritage
- Do the defences work in harmony with Yacht Club/other places?
- Environmental benefits near Carlton Colville – potential?
- Consider impact to water quality and Blue Flag status – WFD
- PLR needed to address sewerage backflow
- PLR can cause people to be isolated in properties – how address this?
- Property value – PLR might impact the assumption is positive but this should be considered
- Drilling in 3rd crossing could cause pollution
- Ground conditions – 3rd crossing team might know

5. Is there anything missing?

- Ensure work closely with 3rd crossing team
- PEIR (Preliminary Environment and Information Report) review needed by stakeholders
- Name of structure? – Competition to name?
- Create walkway/ nature trail along Carlton Colville diversion – actively enhance wellbeing
- Enhance options to incorporate technological advances
- Enhance streetscape – furniture/lighting etc.
- Locally sourced materials? – Recycling?

- Transport materials by water?
- Apprentices as part of construction
- Flood risk assessment (FRA) results – needed as part of planning application
- Permits
- Diversion channel – not in WDC master plan – could compromise delivery – need to refine policy
- Maintenance is important
- Leaflets to people affected from flooding previously to update them on project
- Initial PLR must be age friendly/passive
- Benefits to Mutford Lock – gate can be opened to release water – overtopping risk
- Build up of siltation when gate is closed – both sides
- 6. Do you largely agree with what we are presenting?**
- A lot of abbreviations
- Links to useful online sites (awareness)

Rivers and Rain

1. What are your concerns about the project?

MEASURE 1

- Not enough certainty – reliant on private developer
- Ongoing maintenance
- Planning consultation on development adjacent to Kirkley stream diversion has been aware of the proposal for diversion and flood attenuation
- Reporting of household flooding needs to be promoted
- Relevance of SUDs in the new developments that much more important as Kirkley stream already at capacity/overloaded
- Management plan to tackle aquatic invasive non-native plants
- Would a future developer have to do the additional enhancements e.g. planting and picnic area – part covered by local plan
- What's timescale? (at least 5-10years)
- Needs very careful communication that no scheme going to be built yet
- Community aren't seeing bigger picture
- Access points
- Heavily invasive method
- 1 in 1000 benefits – more information needed

MEASURE 2

- Old flaps hard to maintain
- Generally seen as an improvement to the area
- Possible swimming pool effect on house side
- Access for maintenance of bank- sheet piling makes difficult
- Trees currently provide screening from road – place closer to fence than channel or even in gardens– prevent blockages

- More regular unblocking of Kirkley stream
- Expense of piles

MEASURE 3

- Never flooded – owners may say no
 - Make available to others than the 261
 - Do flood PLP measures be put in new builds – flood risk not passed
 - Who owns them
 - Garden protection
 - Manage at a strategic level - contractors do public comms, identify appropriate approach per house
 - They're not yet all aware that they are one of the 261
- 2. What do you consider are the positives?**

MEASURE 1

- Win win with property developers
- Flood risk reduction
- Cheaper for public purse
- This scheme is linked but can be developed from the tidal scheme, both in timescale and budget
- Potential for showcasing positive measures being taken by Suffolk County Council
- Planning policy largely deals with water management now

MEASURE 2

- Not much change in look/feel
- Danger of over promise – re engine solution
- Generally positive re proposals but just need to work out the most cost effective options
- Good engagement with residents of the two roads affected
- Recognition there is a problem and something is being done
- Better water flow
- Positives outweigh concerns – only need to be considered

MEASURE 3

- Good if taken up
- 3. Is what we are presenting clear?**
- Greater clarity on how these schemes nest with tidal scheme and overall flooding strategy
 - Are the two current schemes the only at risk locations? Modelling and reporting have driven current sites
 - Don't want to give impression that plans are going to happen when not certain
 - People see benefit of potential housing
 - Attenuation areas for MEASURE 1 if development
- 4. Have we considered everything?**

GENERAL COMMENTS

- Tie in with others maintaining surface water e.g. highways, council grounds maintenance, Anglian Water river care
- Community events – awareness and direct local actions
- Urban catchment – possibility of retrofitting SUDs considered but cost prohibitive for benefit gained

MEASURE 1

- Be honest with residents about time scales
- Clarity above diagram – how does draining relate to development

MEASURE 3

- Good opportunity to get good prices for the work as part of bulk buy
- Are all properties removed from risk at Carlton Colville? If not will they get PLP
- Will flood wall at Velda Close increase flood risk down stream?

5. Is there anything missing?

- How pluvial/ fluvial element linked to wider scheme
- Encourage repenting of flooding
- Will the highway issue be solved The Street at Carlton Colville?

6. Do you largely agree with what we are presenting?

GENERAL COMMENTS

- Generally positive – sensible solutions

MEASURE 1

- Principle ok – disappointed with time scale

Lowestoft Flood Risk Management Project

Response to consultation 30th October – 14th December 2017

Date: 3 January 2017

Author: Lucy Williams, Partnership and Engagement Officer

Sign off: Bill Parker, Acting Project Manager

The Lowestoft Flood Risk Management Project sought views on four areas of the scheme to develop a way to reduce flood risk in Lowestoft. Information was shared with the community through a range of means including an Open Day, a Stakeholder workshop, through email to businesses, residents, those previously flooded, key stakeholders, as well as politicians and community groups. Information was also shared through local media publications and social media, and through posters in prominent areas of Lowestoft.

Documents were made available with stakeholders, and those in at risk areas, as well as being available on the LFRMP website, www.lowestoftfrmp.org.uk

Over 50 key stakeholders attended a workshop was held at the Orbis centre on 1st November 2017 to engage with each area of the project, comments were recorded and have been summarised as part of this feedback.

Comments were sought in online surveys:

A potential scheme to reduce flood risk to Lowestoft from rivers and extreme rainfall (fluvial/pluvial)	26 responses to online survey	p. 2
Proposals for the look of the walls and barrier to reduce flooding from the sea (tidal)	22 responses to online survey	p.5
The environmental aspects for the tidal elements of the project	6 responses online 2 responses by email / letter	p.8
Views from river and harbour users	12 responses to online survey	p.11

Overall the feedback from the consultation show that

The project is widely supported by the community. Particularly for regenerating the area and for the opportunities and involvement for young people.

Concerns raised for coordination of projects. To link key strands of this project and other projects such as 3rd crossing where possible.

Maintenance is a concern in all areas. Maintenance of streams, clearing, drainage, flap valves and future maintenance of glass screens.

Ensuring streetscape and furniture is properly thought out and in keeping with heritage of area was a common theme.

Some misunderstandings shared such as mesh fence on Waveney Road undesirable but cannot be changed. Or location or design of barrier and wall suggestions which are not feasible.

A potential scheme to reduce flood risk to Lowestoft from rivers and extreme rainfall (fluvial/pluvial)

Responses to survey online: 26

46% respondents heard about the event by email.

17% respondents heard about the event through word of mouth.

38% heard about the event by 'other' (including internal comms, through stakeholder event, social media and EDP article)

We would like to know what particular interests or concerns prompted you to attend today. What experience have you had of flooding in Lowestoft? (24 answered. 2 Skipped)

12/24 of respondents were interested to learn about the project but had not been flooded.

6/24 of respondents were interested to attend because their home had previously been flooded.

3/24 of respondents each either had a road in their neighbourhood flooded or their work place has previously been flooded.

How concerned are you about the likelihood and effects of flooding in Lowestoft as caused by: On a scale of 1 to 10, 1 being Not Concerned, and 10 being Very Concerned. (25 answered. 1 skipped)

Most respondents responded with a concern for flooding

Flooding from the river; average 7.71 on scale 1-10

Flooding from rainfall; average 8.04 on scale 1-10

We would like to know your thoughts on the possibilities for reducing flood risk from river and rainfall: See A, B and C below (comments on p.3)

A. Flood defence wall at Velda Close/Aldwyck Way (25 answered. 1 skipped)

19/25 respondents support possibility for Flood defence wall at Velda Close / Aldwyck Way

2/25 were not sure, and **4/25** provided comments

B. Channel diversion of the Kirkley Stream in Carlton Colville (22 answered. 4 skipped)

18/22 respondents support possibility for reducing flood risk from river and rain in Carlton Colville

1/22 felt there was not enough flood risk benefit and **3/22** were not sure.

C. Property Level Protection measures (24 answered. 2 skipped)

19/24 respondents support possibility for reducing flood risk with the proposed property level protection.

1/24 Felt that there was not enough flood risk benefit from it and **4/24** were not sure.

If your residential property is at risk of flooding in a 1 in 20 year flood event, then you could be eligible for individual property level protection. If so, would you be interested? (23 answered. 3 skipped)

17/23 of respondents were interested

6/23 were not interested

Respondents to the survey felt that the information and event was helpful to understanding the flood risk in Lowestoft and for investigating ways of reducing the risk.

Comments from online survey

A. Flood defence wall at Velda Close/Aldwyck Way

- Carlton has been affected by allowing building on the old pond area, Oulton Broad around the D park entrance area housing has no defence - what are you doing to help those houses? 130-146 etc. Some of us cannot afford the house insurance because of the designated flood area.
- Velda close and Aldwyck are the lowest points along this stretch of stream. July it was flooded four times in the rear gardens just through rainfall.

B. Channel diversion of the Kirkley Stream in Carlton Colville

- The Project team need to look at the 6 points summarised in the SCC Flooding Sub Committee Meeting of June 2016:
training for Anglian Water telephone handlers when an Emergency call comes in; education for children through local schools re flytipping and how using the Kirkley Stream as a play area or waste tip; equally SCC was required to regularly clear the stream of foliage to improve water flow.
- An excellent proposal which will hopefully reduce the regular flooding which occurs in The Street. It is hoped that the works can progress at the earliest opportunity as the current ditch (Kirkley Stream) receives very little maintenance and is constantly overgrown reducing flows.
- More detailed requested

C. Property Level Protection measures

- Broads Authority manage Mutford Lock so any protection to its electrical operating infrastructure is a consideration for us
- To what level of assistance are you willing to supply.
- Useful, but pushes responsibility away from the council & water companies and onto individual property owners. Residents may not be home during rainfall to defend property, water should be held by proper defences.

Other comments

- Ultimately, a lot of this could have been avoided if the sea and river defences plus adequate drainage systems had been installed and maintained. Like lots of superstructure and logistic networks in Lowestoft they have been allowed to become in-adapted for current use and also been allowed to deteriorate and decline in effectiveness
- Kirkley Stream has a long and interesting history, being indirectly referred to in the Domesday Survey (1086) in the name of Beckton - a small settlement later absorbed by Pakefield. In tandem with the new sea defences, it is important that the marshland area to the west of Lowestoft is prudently managed as part of the overall flooding strategy. Well-dredged dykes and adequate river-walls and banks must be part of the whole package. To tie in with highways, maintenance, Anglian Water etc

Summary learning from Key Stakeholder event (1/11/2017)

Overall the comments received were positive. Trending concerns, and queries highlighted below:

Measure 1 (Diversion of the Kirkley stream at Carlton Colville)

- Lack of certainty – reliant on property developer. Reliance on SUDs now much more important.
- Could be good for property developers
- Will the highway issue be solved The Street at Carlton Colville?
- Ongoing maintenance / proper management plan needed
- More information needed i.e. timescale, what is 1 in 1000 benefits
- Principle ok – disappointed with time scale
- Clarity required for diagram – how does draining relate to development
- Reporting of household flooding needs to be promoted
- Community are not seeing bigger picture

Measure 2 (Flood defence wall at Velda close/ Aldwyck Way)

- Generally seen as an improvement to the area / pleased for recognition of issue
- There has been good engagement with residents of the two roads affected
- Old flaps hard to maintain
- Trees currently provide screening from road – place closer to fence than channel or even in gardens– prevent blockages
- More regular unblocking of Kirkley stream needed
- Access for maintenance of bank - makes sheet piling difficult / expense of piles

Measure 3 (Property level protection)

- Residents not yet all aware that they are one of the 261
- Make available to others than the 261
- Never flooded – owners may say no
- Good if taken up
- Manage at a strategic level: contractors do public communications, identify appropriate approach per house
- Will flood wall at Velda Close increase flood risk down stream?

Generally

Urban catchment – possibility of retrofitting SUDs considered but cost prohibitive for benefit gained

Proposals for the look of the walls and barrier to reduce flooding from the sea (tidal)

Responses to survey online: 22

19 respondents had seen the visuals. 3 responded that they had not.

The 3 respondents who had not seen the visual representations did not submit responses to other sections of the survey. Therefore the average scores for each section of the wall were not affected.

Generally speaking, 60% of respondents felt the visualisations look suitable. 25% felt they look neither suitable nor unsuitable. 15% felt they looked unsuitable.

Generally speaking, how do you feel about the visual representations of the flood barrier? (20 Answered. 2 skipped)

12/20 of respondents felt the visualisations look suitable.

5/20 felt they look neither suitable nor unsuitable.

3/20 felt they looked unsuitable.

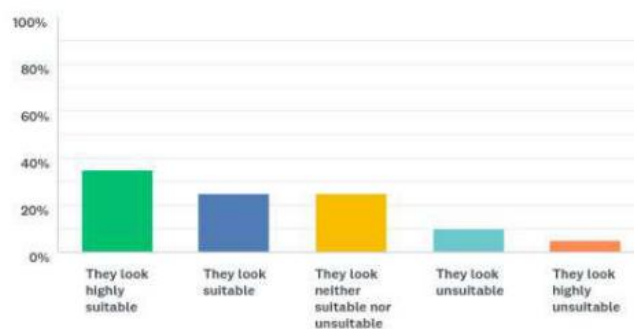


Figure 1

More specifically, how do you feel about the individual sections listed below:

The majority of respondents felt that the 12 visualisations of the tidal project looked suitable (fig 1.) A small proportion felt the appearance was neither suitable nor unsuitable, and a small proportion (varying between 1 and 3 respondents) felt that the appearance was unsuitable.

For those that submitted an unsuitable response, these responses were mixed in a combination of suitable / unsuitable, rather than all sections appeared unsuitable (fig 2)

Comment summary

- Mesh is an improvement to the railing around the port but a glass screen would have been preferred.
- It is disappointing that the adjustment to the harbour fencing that were undertaken not that long ago did not include an increase in the height of the supporting wall.
- Concern for glass wall along South Pier remaining clean and pleasant before it degrades / vandalised.
- Who will maintain it wall and cleanliness of glass?

- Approve of glass around the yacht club and South Pier however concern for use of chrome. The yacht club is famous for it's copper roof. Surely white, black or verdigree would be easier to maintain and blend into the historic environment better.
- There should be a brick wall and fencing on the seating area next to the life boat man statue and run up next to the SLP yard
- One comment related to disapproval for survey as no alternatives given or asked for in the survey..

Some comments show that the consultation material not completely understood:

- Many ports do not have security fences so why should they be necessary in Lowestoft? They are ugly
- Glass not a suitable material for a barrier
- The defences should start the seaward side to protect the whole coast not just bits.

Summary learning from Key Stakeholder event – Overall positive comments and in agreement with proposals

- Good opportunity to work with Broads Authority – link with Broadland futures
- Good for investment to Lowestoft
- Glass wall desired for Waveney Road - more aesthetically pleasing
- Request to see better visualisations of new security fencing
- Clear timescale needed - how will construction work with 3rd Crossing and will TWAO impact
- How long will it last? What will it look like in 50 years?
- Who is responsible for deployment of barriers and demountables
- Will local companies be used for construction?-clear communication about construction is needed. Suggestion made to provide a sample section of wall for people to engage
- Minimise impact on boat users and provide safety moorings
- Clarity needed for the flap valves in Lake Lothing
- Less abbreviations and technical terms needed to help understanding
- Have you considered an archaeological survey - may find WW2 bombs
- Have you considered a life boat / station other side of barrier in case of event

	THIS SECTION LOOKS HIGHLY SUITABLE	THIS SECTION LOOKS SUITABLE	THIS SECTION LOOKS NEITHER SUITABLE NOR UNSUITABLE	THIS SECTION LOOKS LOOK UNSUITABLE	THIS SECTION LOOKS HIGHLY UNSUITABLE	TOTAL	WEIGHTED AVERAGE
ABP port entrance	36.84% 7	36.84% 7	10.53% 2	5.26% 1	10.53% 2	19	2.16
Tidal flood barrier	57.89% 11	31.58% 6	0.00% 0	5.26% 1	5.26% 1	19	1.68
Station square part 1	52.63% 10	26.32% 5	15.79% 3	0.00% 0	5.26% 1	19	1.79
Station square part 2	52.63% 10	26.32% 5	15.79% 3	0.00% 0	5.26% 1	19	1.79
Waveney Road	52.63% 10	26.32% 5	15.79% 3	0.00% 0	5.26% 1	19	1.79
Yacht Club (central view)	42.11% 8	36.84% 7	5.26% 1	10.53% 2	5.26% 1	19	2.00
Yacht club (north side)	36.84% 7	31.58% 6	15.79% 3	10.53% 2	5.26% 1	19	2.16
Yacht club (south side)	42.11% 8	31.58% 6	10.53% 2	10.53% 2	5.26% 1	19	2.05
South Pier	47.37% 9	31.58% 6	5.26% 1	10.53% 2	5.26% 1	19	1.95
Outer South Pier	47.37% 9	31.58% 6	5.26% 1	10.53% 2	5.26% 1	19	1.95
Hamilton Road part 1	36.84% 7	36.84% 7	5.26% 1	5.26% 1	15.79% 3	19	2.26
Hamilton Road part 2	42.11% 8	31.58% 6	5.26% 1	5.26% 1	15.79% 3	19	2.21

Figure 2

Environmental Assessment for the tidal elements of the project

Responses to survey online: 6

Responses by other method: 2

9 responses to the Environmental Assessment for the tidal elements.

2 of these (Anglian Water and Natural England) sent their responses in letter / email format

1 response was a 'bot' whose responses have been removed.

We believe that the key topics and issues which need to be considered as part of the environmental assessment for the tidal elements of the LFRMP are as follows:

- 1. Biodiversity, flora and fauna (potential impact on roosting bats, nesting birds, spread of Japanese seaweed, loss of subtidal habitats and fauna of unknown value)**
- 2. Historic environment (potential impact on the setting of designated heritage assets (e.g. listed buildings, Conservation Area) and unknown archaeological assets which may be present within the footprint of the proposed scheme)**
- 3. Landscape (potential changes in townscape and impacts on a range of visual receptors including the Royal Norfolk and Suffolk Yacht Club and Port House Listed Buildings)**
- 4. Transport and navigation (potential for impact on the local road network, particularly the A47, navigation through the Bascule Bridge channel, operations at the Royal Suffolk and Norfolk Yacht Club)**
- 5. Population and health (noise and vibration disturbance to local residents and businesses, impact on port operations, disruption to boat users, the Lowestoft Marina and The Royal Norfolk and Suffolk Yacht Club)**
- 6. Water and hydromorphology (potential for impact on underlying groundwater aquifer, risks to water quality, changes to the ecology and morphology of the estuary and coast) Please indicate your level of agreement or disagreement and reason for this for each of the key topics identified. Please identify any additional issues which you think should be considered. Are there any other topics that you think should be considered? If so, please describe below.**

Nearly all responses were in agreement with the key topics highlighted in the Environmental Aspects of the survey.

Comments for Biodiversity, flora and fauna

- Provision needed for the Kittiwake and other seabird populations in the design and structure of flood prevention barriers

Comments for Historic Environment

- It is important to take the opportunity to improve the streetscape and public place whilst providing flood defences
- So much of Lowestoft's heritage has been lost or very neglected and it is vitally important that the Historic environment is maintained for future generations.
- The impact on the historical environment is an acceptable consequence of providing flood protection for the town and harbour.

Comments for Landscape

- It is important to take the opportunity to improve the streetscape and public place whilst providing flood defences
- The impact on the landscape is an acceptable consequence of providing flood protection for the town and harbour.

Comments for Transport and Navigation

- If there is to be a channel barrier (which I believe to be over the top) then it should be incorporated into the design of the third crossing i.e. west of the present bridge not the seaward side.
- Important to maintain navigation rights during the construction of the tidal barrier. It is accepted that navigation will stop when the occasions the flood barrier is closed during tidal surges.

Comments for Population and Health

- I think this project can only enhance the town and therefore as a consequence, the population and health of the town.

Please highlight any key issues which you think should be considered as part of the environmental assessment for the pluvial and fluvial elements of the LFRMP

- | |
|---|
| <ul style="list-style-type: none">• No tidal gates on the seaward side of the bridge and all defences on the seaward side of the coastline should be reviewed and improved.• The road floods extremely badly at the junction where the pedestrians have to cross the road (outside Tuttles) to get to the other side to then cross over the Bascule Bridge.• Kirkley Stream and the dyke on the other side of Tom Crisp Way is an issue |
|---|

Natural England support the overall EIA approach. They have stated that guidance stresses the need for a full set of environmental information to be available for consideration prior to a decision being taken on whether or not to grant planning permission.

Anglian Water responded to support the management of the risk to bathing waters downstream from nature of this scheme. Bathing Waters are classified annually using previous 4 years sample data, meaning spikes in bacteria could stay on the record for a number of years.

Summary learning from Key Stakeholder event

Concerns

- Marine mammals and shell fisheries could be affected
- Dredging and sediment quality could affect environment
- Identify potential issues early e.g. impacts on flows, river users and bathing water quality, Japanese seaweed
- Issues around clearance of Kirkley Stream
- Impact on local wave environment and silt build up in harbour
- Diversion channel is not in WDC master plan. This could compromise delivery – need to refine policy
- Avoid abbreviations when communication with wider public

Positives

- Sense of place and social benefits - wellbeing
- Passive property protection is age friendly and inclusive

Other

- The maintenance and upkeep of assets is key e.g. around south pier
- Red brick might stand out – try to match nearby structures – Somerleyton yellow bricks – link to heritage
- Drilling in 3rd crossing could cause pollution
- Consider impact to water quality and Blue Flag status – WFD
- Create walkway/ nature trail along Carlton Colville diversion – actively enhance wellbeing
- Have you considered name of structure? – A competition to name it?
- Have you considered enhancing streetscape – furniture/lighting etc.
- What about locally sourced materials? – Recycling?

Lowestoft River Users

Responses to survey online: 12

Are you a river user? (12 Answered. 0 Skipped)

10/12 answered 'Yes'

2/12 answered 'No'

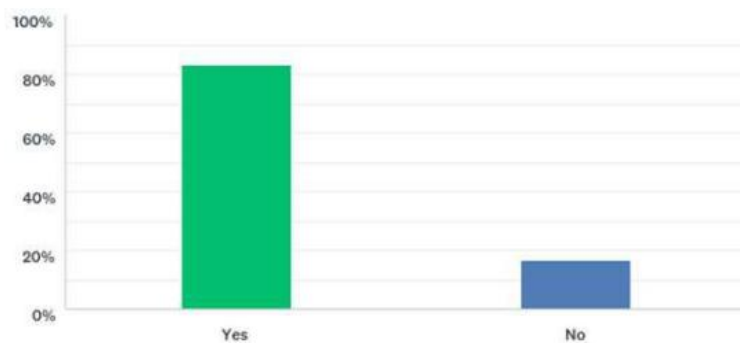
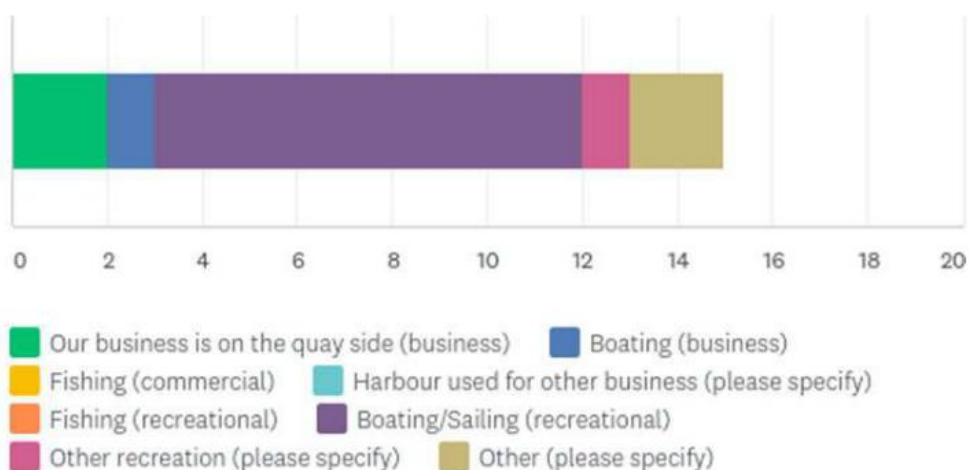


Figure 3

What do you use the river for? (please select all relevant) (11 Answered. 1 Skipped)

Our business is on the quay side (business)	2/11
Boating (business)	1/11
Fishing (commercial)	0/11
Harbour used for other business (please specify)	0/11
Fishing (recreational)	0/11
Boating/Sailing (recreational)	9/11
Other recreation (please specify)	1/11
Other (please specify)	2/11



How often to you use the river area? (11 answered. 1 skipped)

Once a year or less	1/11
Once or twice a month	3/11
Weekly	1/11
Daily	3/11
Other	5/11

Comments

Variable (including monthly weekly, daily depending on time of year)

More frequently between May and September

At what times would you usually use the river (10 answered. 2 skipped)

Respondents to the survey use the river more frequently in warmer months. The river area is used midweek and at weekends. The least used time period is evenings or overnight.

Spring	9/10
Summer	10/10
Autumn	10/10
Winter	2/10

Weekdays	7/10
Weekends	9/10

Morning	7/10
Afternoon	8/10
Evening	6/10
Overnight	5/10

Do you foresee benefits or disadvantages with the proposed scheme (10 Answered. 2 Skipped)

9 responses supporting benefits from the scheme

1 response of unsure yet

Comments included

- Benefits as long as access to check craft once barriers in place (seaward side)
- Benefit to the Lake and the area. It provides the potential to create more destination spots for the town centre.
- Protection from tidal flooding by the proposed barrier would give the Broads Authority far more confidence in the ability of the historic structure of Mutford Lock to be able to cope with extreme events.

How would the presence of the completed scheme change your use of the river area (12 Answered. 0 Skipped)

No change	10/12
Use more	1/12
Use less	1/12

What does the Lowestoft Flood Risk Management Project need to consider for river users (9 answered. 3 skipped)

Summary of comments

- Access past Tidal barrier and ease of use by leisure user is important
- Barrier should be opened promptly once danger has passed
- More obstacles to river use such as bridge openings not needed
- The potential impact from closure of the tidal barrier during flood events would restrict navigable access to the lock from vessels coming into the Broads from the sea. If closure was only for emergency situations, then clear and active communication with the Broads Authority would need to be maintained. The Broads Authority would also support the wider communications of the closure through our communication channels. We would expect Notice to Mariners or similar formal notifications to be issued as appropriate.

Please share your thoughts and experience about flooding if you would like to. Please specify whether the flooding is tidal, or whether it is caused by rivers and rainfall (6 answered. 6 skipped)

Summary of comments

- Tidal flooding from the seaward side of the Lock has previously damaged electrical systems which operate the hydraulic lock gates. Debris and siltation associated with the tidal surges also then fouled the lock gates and made subsequent openings difficult.
- Flooding is tidal our workhouse 1.10m under water
- Experience over several years of grandparents and aunt's houses being flooded by river/flooded roads. Flooded vehicles at LCC.
- We are fortunate to be just outside the flood zone, but with my Lowestoft Vision Hat on. Several businesses were affected by the tidal floods.
- At Lowestoft Cruising Club we suffer from tidal surge flooding. Hopefully the tidal barrier in conjunction with the raised walls will protect all of Lake Lothing, and all the business and leisure activities and interests. Will the barrier work at the highest recorded tidal surge of 4.21m in 1969 (<http://www.ntsif.org/data/hilev?port=Lowestoft>) or even higher allowing for rising sea levels resulting from global warming?

2019/21 Consultation Materials

LOWESTOFT FLOOD RISK MANAGEMENT PROJECT

ADVOCACY MEETING

18 February 2019

Present:	Peter Aldous (Chair), Cllr Mark Bee, Stephen Baker, Richard Perkins, Cllr David Ritchie, Cllr Craig Rivett, Nick Khan, Philip Ridley, Sharon Bleese, Paul Mackie, Martin Pavitt, David Harvey, Joanna Young, Keith Moore, Liz Chettleburgh, Steve Crissall, Kingsley Farrington, Chris Merren, Daniel Johns, Troy Doherty, Charles Schelpe and Bill Parker
1.	Welcome and opening remarks
	<ul style="list-style-type: none"> • The meeting was opened by Peter Aldous MP and introductions were made. • The purpose of the meeting was to provide a full briefing on the Flood Risk Management Project and to find ways for both the private and public sector to work together in order to obtain the additional funding required to complete the flood defence infrastructure. • Peter Aldous outlined the key developments currently underway in Lowestoft and the opportunities afforded by offshore wind energy, fishing and the third river crossing. Flood infrastructure is vital to ensure that these opportunities are realised.
2.	Growth, regeneration and resilience in Lowestoft
	<ul style="list-style-type: none"> • Attendees had been hand picked to become an advocate for the project given the particular insight each has in terms of the town and the impact of flooding. • The world of funding has changed and we need to be in a position to lobby at every opportunity in order to raise the project's profile. • Lowestoft has unique potential and the Sizewell C development will also present opportunities.
3.	Introduction to the Flood Risk Management Project
	<ul style="list-style-type: none"> • The major flooding incident in December 2013 has been the catalyst for change. At that time, the town had no flood defences in place at all. • Project partners and governance outlined. • The project has two stages. Stage 1 is to reduce the risk of flooding from rivers and extreme rainfall. This stage is fully funded and includes property protection, flood walls, a small pumping station and an improved maintenance programme. Stage 2 is to reduce the risk of flooding from the sea. There is sufficient funding to cover the flood walls and gates but a significant budget gap exists in terms of the tidal barrier. • Agreed that every partner around the table will benefit from a tidal barrier. • The key challenges are to protect the Port (which is legally required to remain open and has no opportunity to divert channel), protect Tourism and aid Regeneration (giving confidence to potential investors).
4.	Developing the capital project – present and future risks

LOWESTOFT FLOOD RISK MANAGEMENT PROJECT

ADVOCACY MEETING

18 February 2019

	<ul style="list-style-type: none"> • The current risk of tidal flooding in Lowestoft is very high - 20% (1 in 5 years). This will increase with climate change. • Maps were shown showing the impact of a 1 in 5 years event and also the impact should sea levels increase by 1m. • Potential investors will find this risk too high and will be looking at a risk of 1 in 200 (0.5%). • The importance and relevance of the Transport and Works Act Order (TWAo) were discussed. • In order to obtain such an Order, the project needs to consider navigational, transportation and environmental impacts. Each process must be meticulously carried out in order to avoid challenge. We also need a wide and comprehensive consultation report, as well as legal agreements from ABP, the Royal Norfolk & Suffolk Yacht Club, Highways England and Crown Estates. These will only be obtained if each party feels properly consulted and properly protected. • Key TWAo procedure milestones outlined. • Period of objection can be used strategically by some; need to avoid a Public Inquiry at all costs. • Economics considered. The duration of the benefits of the scheme must be realised for 100 years. Costs must also include future maintenance costs. • Currently 63% of jobs and 71% of GVA is affected by Lowestoft's flood risk. • Grant in Aid funding from the Government = £4.34m and is primarily based on the flood risk to residential properties. Funding is driven by the number of houses being moved from significant to lower risk. • Funding will not be released until we can demonstrate that the project is fully funded. • Whether the third river crossing is in the process of being constructed, or has been constructed, will not impact on the flood defence works. However, there will be an impact in terms of the highway network and labour.
5.	Construction methodology
	<ul style="list-style-type: none"> • The works required in the channel have been designed to have the least impact on the Port (which will remain open throughout) and are phased to work outside of the peak tourism season. • Presentation given on the method of construction. The cranes that will be used can be easily suspended in order to allow for vehicle and vessel movements. • The work will be carried out over three winters. During the tourist season, other elements of the build will take place at Lake Lothing and brought onto site at the appropriate point. • Adverse weather conditions during the winter months may have a slight impact, but this has already been factored into the timetable.

LOWESTOFT FLOOD RISK MANAGEMENT PROJECT

ADVOCACY MEETING

18 February 2019

6.	Funding challenges
	<ul style="list-style-type: none"> • Case for investment considered. • A 1 in 200 year flood incident will have a direct impact on 38 x electricity sub stations, 3 x water pumping stations, 1 x gas facility, 1 x train station, the Port, Bascule Bridge, 2 x health facilities, 2 x government buildings, 1 x education facility, 1 x residential institution and 1 x leisure centres. • If the tidal gates were in place now and activated, it would have an immediate value in terms of protecting 12 x electricity pumping stations, 1 x water pumping station, unquantified telecoms assets, the Port, the railway station, elements of the A12, 500 families and local businesses. This gives an economic footprint of £499m and 11,000 jobs. • The tidal gate will reduce risk to 2% for both jobs and GVA. • Overall funding requirement is £62.4m. We have committed funding of £23.8m from WDC, the LEP, Council Tax levy, SCC and FDGiA. • We therefore need to secure a further £38.6m and are looking at obtaining £10m from bids from appropriate sources of which there are currently 17. £15m of risk has been built into the project which is currently operating at a 30% risk ratio. The remaining balance will need to come from Government capital. • It is much harder to obtain funding in connection with mitigating flood risk because you cannot include many of the benefits you can include when applying for funding for other infrastructure projects. • A draft infrastructure prospectus was provided to each attendee. Feedback on this was encouraged. The prospectus would carry more weight if everyone's logo could be included. In addition, the collective support for any funding bid put forward is invaluable.
7.	Development project advocates
	<ul style="list-style-type: none"> • The meeting then moved into open discussion. • Lowestoft has a number of positives that will help us when competing against others for funding. For instance, we have a strong data set, no flood defences at present, an established partnership approach and a number of areas of deprivation. • If we do nothing, then our reliance on the Government's Bellwin fund will continue. • Accepted that Government is very objective and will not take into account heritage or economic development since any displacement is likely to go elsewhere in the country. However, if we feel we may lose out to another country, then that will be taken into consideration. • Government will look more kindly on a bid if we can demonstrate that we have obtained (or tried) to source funding locally from those who will benefit.

LOWESTOFT FLOOD RISK MANAGEMENT PROJECT

ADVOCACY MEETING

18 February 2019

	<ul style="list-style-type: none"> • There is a lack of data available on the ‘real’ impact of the 2013 flood. However, it may be possible to obtain such data if it was considered helpful to the cause. Agreed that this data should be collated. The Chamber of Commerce will be able to help with this and Richard Perkins will discuss this with John Dugmore. • Agreed that reputational loss is very harmful and a further flooding incident may blight the town forever. Daniel Johns will provide advice and guidance in this regard following a study done in Calderdale. • Aviva has an investment arm, but will require a return on investment and in cases of flooding, this is difficult. Liz Chettleburgh will speak to Aviva in this regard. • An HMRC scheme still exists whereby any local businesses who invest in flood alleviation schemes may be eligible to reclaim tax on their investment. This should be promoted locally. • The UK Shared Prosperity Fund will be administered by the LEP. The project team will ensure that we input into the consultation about this fund in order to help shape its future use. Paul Mackie will consider how the project can benefit from this fund. • Agreed that we must not underplay the effect of flooding on our tourism industry.
8.	Summary and next steps
	Stephen Baker closed the meeting having gained commitment from all attendees to lend their support and push the project forward at every opportunity. The project team confirmed that they would be happy to present to any organisation who wishes.

LOWESTOFT FLOOD RISK MANAGEMENT PROJECT

PUBLIC MEETING



WELCOME, INTRODUCTIONS AND AIMS FOR THE MEETING



PROJECT OVERVIEW, UPDATE AND QUESTIONS

-
TIDAL







WHY DO WE NEED FLOOD DEFENCES IN LOWESTOFT?

- December 2013 tidal surge
- 90 homes flooded
- 143 businesses flooded
- Road and rail infrastructure impacted
- No formal flood defences
- January 2017 – a near miss
- Increasingly vulnerable to tidal flooding



Key infrastructure in tidal flood plain (1 in 200 year +climate change to 2117):

- Circa 1500 homes (inc P/F) over 100ys +CC
- 825 businesses
- 38 electricity substations
- At least 14 telecoms assets
- 3 water pumping stations
- 1 gas facility
- Lowestoft Railway Station plus 2km of rail
- Port of Lowestoft
- Bascule Bridge
- 4km of A roads

Local services in tidal flood plain:

- 2 health facilities
- 2 government buildings
- 1 community centre
- 1 education facility
- 1 place of worship
- 2 residential buildings for vulnerable adults
- 1 sport centre



Plus multiple other key assets and community facilities at risk of severe disruption due to flooding / failure of transport and utilities infrastructure, as was seen during the 2013 storm surge.

THE SOLUTION;

AN INTEGRATED FLOOD RISK SCHEME



Package 1 Tidal Floodwalls – Hamilton Road, ABP port entrance, Waveney Road from ABP entrance to bus stop near Station Square.



Package 2 Tidal Floodwalls – Bus Stop round to South Pier including RNSYC.



Phase 2 – Tidal barrier

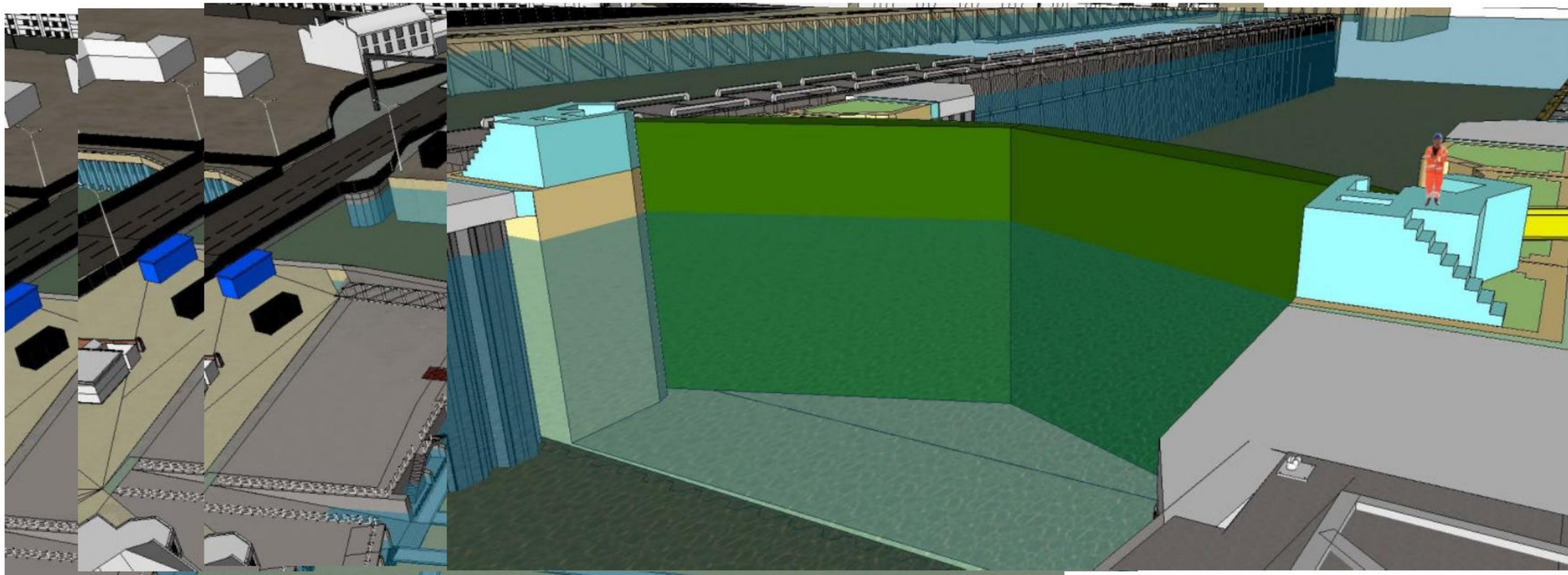
TIDAL FLOOD WALLS

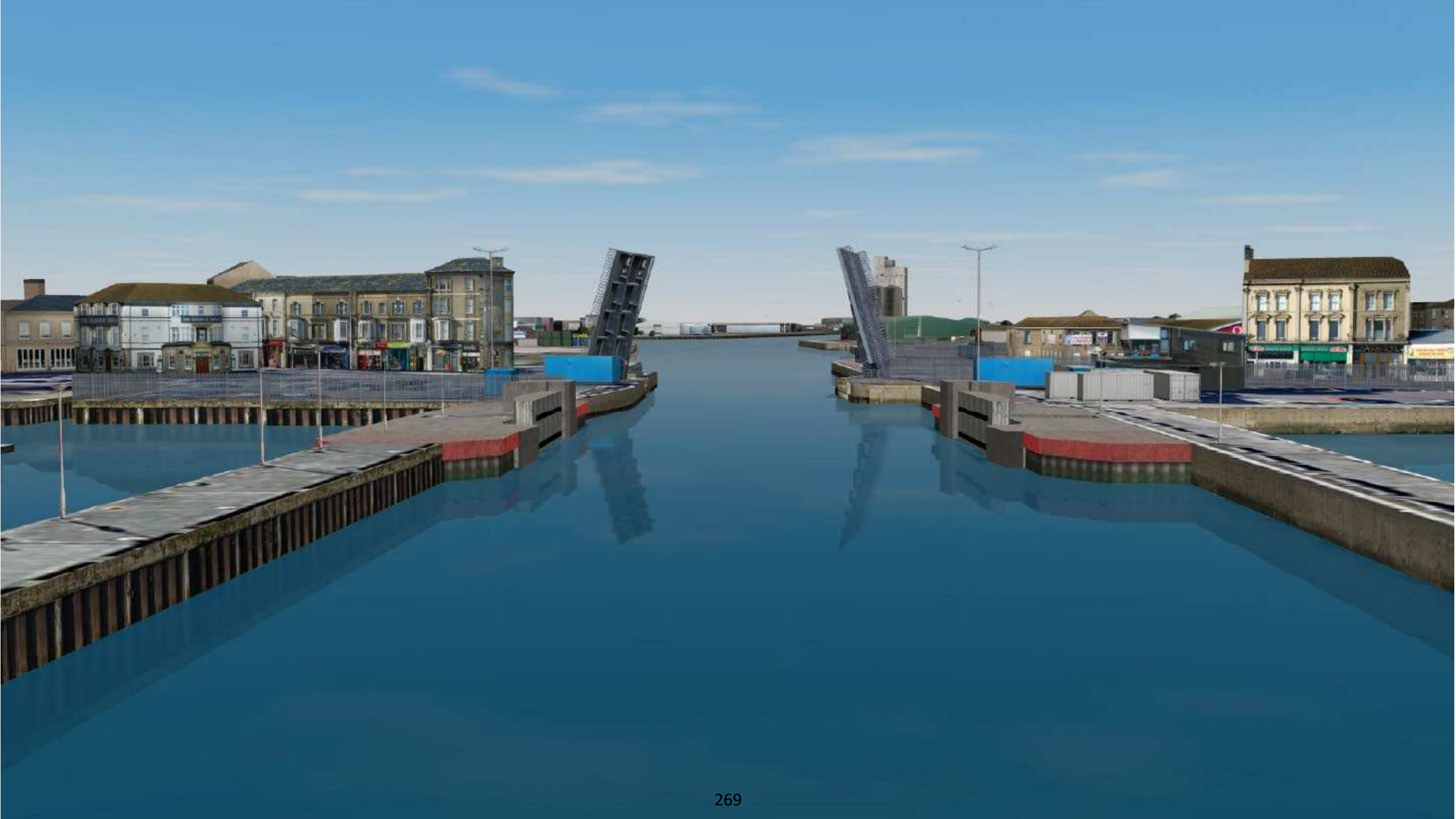




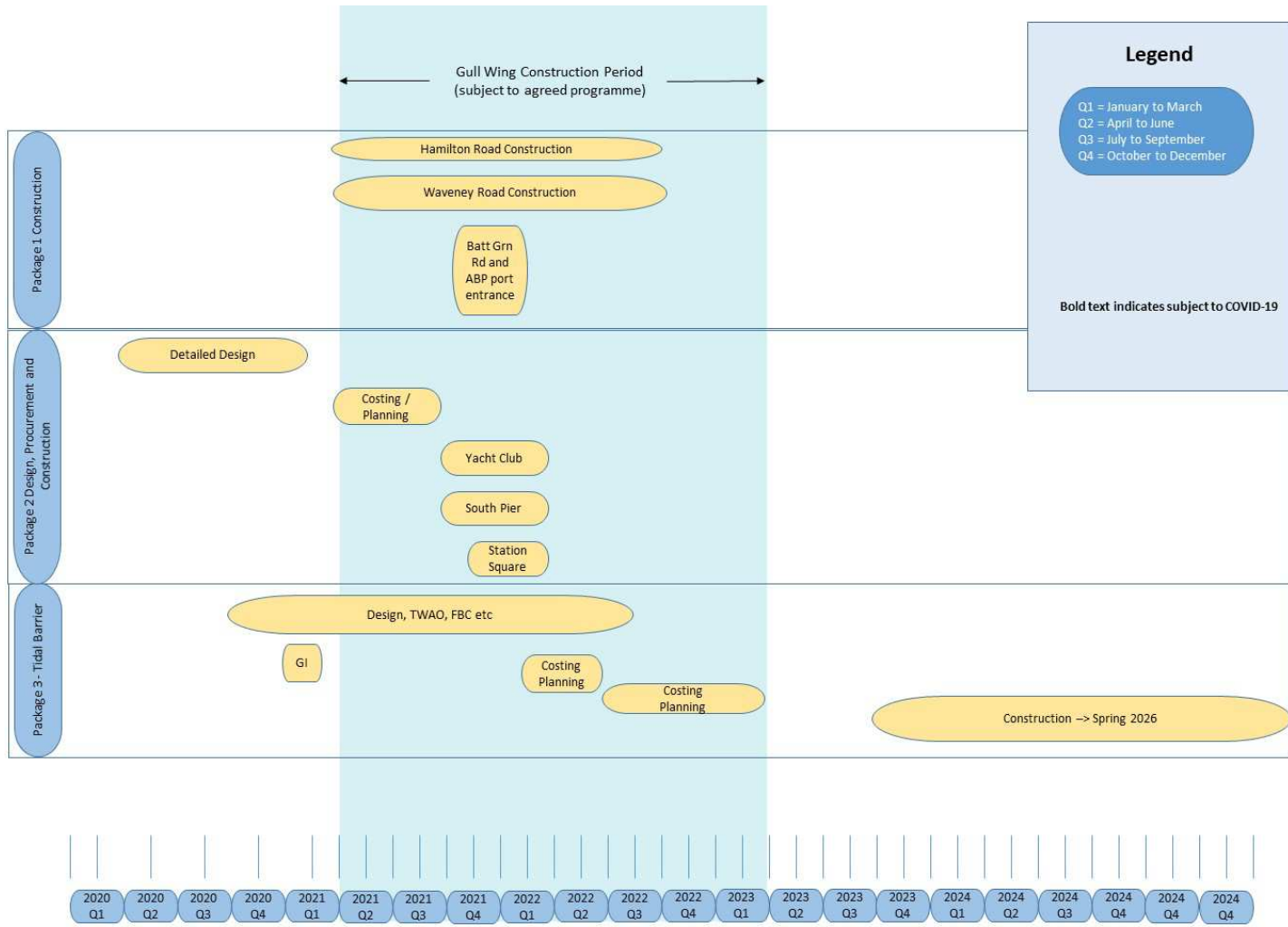


TIDAL FLOOD BARRIER

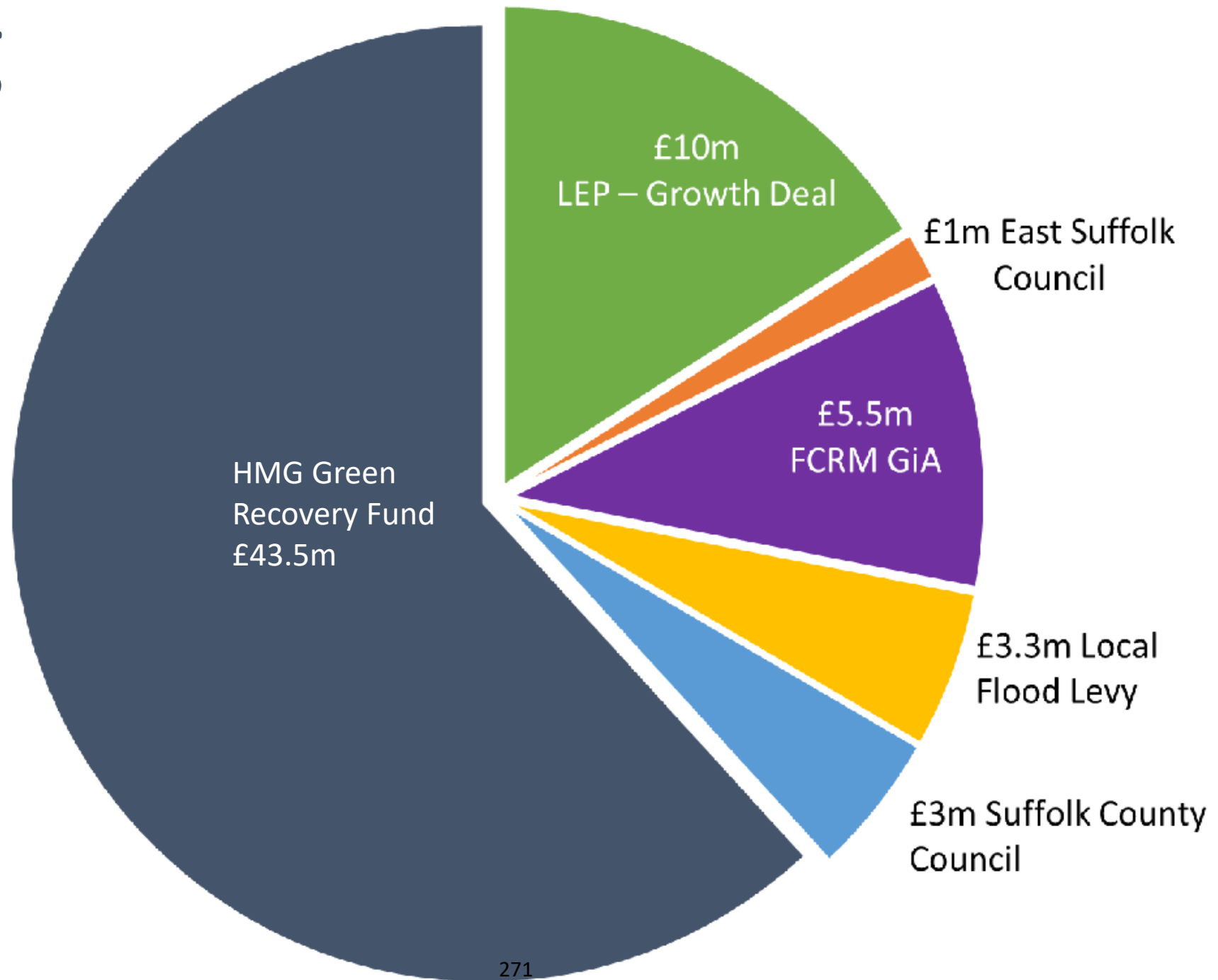




PROGRAMME



Funding Position



TRANSPORT WORKS ACT ORDER (TWA0)

- A TWA0 is needed for the tidal barrier because it permanently alters the navigation channel
- TWA0 gives the Project land access needed to complete construction
- Does not replace the planning application process
- Approved by the Secretary of State (Defra)

DELIVERING A LEGACY & SOCIAL VALUE

SOCIAL VALUE IMPACT

1500
students



engaged through
East Suffolk
Council work
and Balfour
Beatty work at
conferences and
virtual events

10 
work experience
placements
hosted virtually
with more planned
for summer 2021

258 weeks
of apprenticeships
on the project –
local young
people



Volunteering
in Lowestoft food
bank in December
2020



2 NEETs
are to be hired in
April 2021



£5,300
contributed
to community
resilience training
through charity
Groundwork

Bike scheme installed in the
compound saving approx.
of car travel and local
traffic each day

30
miles

£353,420
spent with local
SMEs – Velda
Close/PLR

32 **job**
opportunities
created so
far on the
scheme



**£511,
899.00**
spent with local
SMEs – Tidal Walls

Savings in Co2 planned
through
eco cabins,
electric vehicle
charging
points and
electric vans

Car miles saved so
far on the project
through working at
home and hosting
virtual meetings:
122,206

£515 
raised for Breast
Cancer Now by
one of our site
team running
100km in March

Balfour Beatty



QUESTIONS AND DISCUSSION

**More information available at
our project website:**

www.lowestoftfrmp.org.uk

Follow us on social media:



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CLOSE



CASE FOR CHANGE



What area does the Lowestoft Flood Risk Management Project cover?

The Lowestoft Flood Risk Management Project (LFRMP) is about developing a way forward to reduce the risk of flooding from the sea, rivers and from extreme rainfall. The Project covers the areas of Lowestoft deemed to be at significant risk from tidal flooding between the Outer Harbour and the western end of Lake Lothing at Mutford Lock; from river flooding along Kirkley Stream, and from surface water flooding both adjacent to Kirkley Stream and other key areas identified to the north and south of Lake Lothing.

The main risk from tidal flooding is caused by a tidal surge that develops in the North Sea along the eastern coastline of the United Kingdom as was demonstrated by the events in 1953 and most recently in December 2013. Lowestoft has very limited existing tidal flood defences and without further investment, the town will remain at significant risk.

The risk from river flooding was demonstrated by the event in July 2015 along Kirkley Stream. The risk of surface water flooding from extreme rainfall events has been considered within a number of local flood risk zones. In both cases it is important to consider the zone or area that contributes to the flood risk rather than a specific location where the flooding occurs.

Why do we need flood defences in Lowestoft?

The December 2013 tidal surge flood event, which resulted in 90 homes and 143 businesses being affected, highlighted the inadequacy of Lowestoft's flood defences and the impact it has on existing and potential growth for the town.

This was further reinforced by the flooding in the Kirkley area of Lowestoft in 2015 and 2019 following an extreme rainfall events. This demonstrated Lowestoft's vulnerability to all forms of flooding from the sea, rivers and extreme rainfall.

Solutions are needed to address all these forms of flooding to offer the best possible flood risk management for Lowestoft.

Lowestoft has very limited existing flood defences and, without further investment, there is a risk that the instances of flooding will increase as the impacts of climate change increase. Unless we act there is a risk that in the future losses to property and businesses from flooding within Lowestoft will become unsustainable and will prevent any future growth.



HOW HAS THE PROJECT DEVELOPED?



In deciding the best ways in which we should manage flood risk in Lowestoft now and in the future, we have carried out a number of studies looking at:

- **the current extent and risk of flooding**
- **how flood risk could increase in the future through the impacts of climate change**
- **the costs and benefits of providing different flood risk management solutions**

To ensure that impacts to people, the local economy and the environment have been fully understood and taken into consideration, everyone living, visiting or working on or around Lowestoft has been invited to take part in determining how flood risk within Lowestoft should be managed.

To date this has been through:

- **engagement with key stakeholders**
- **one-to-one discussions**
- **the formation of a Key Stakeholder Group, consisting of members of the community and local businesses**

We have used the feedback from this consultation to make decisions on the best approach and the options that are proposed to be taken forward in the strategy.

What solutions were considered for tidal flooding?

In deciding the best ways in which we should manage tidal flood risk in Lowestoft now and in the future, we have assessed a long list of options as follows:

Do nothing

OPTION
1

This option is a baseline only, against which to evaluate the economic benefits of the other options. It allows the existing tidal flood risk management assets to degrade and ultimately fail. This option is not considered any further based on social, economic and sustainability grounds.

Maintain existing defences

OPTION
2

This option involves the continued maintenance of the existing wall along the east side of the A47 Waveney Road, which forms the foundation for Associated British Ports (ABP) security fence and provides an informal tidal flood defence. This wall only prevents tidal flood waters up to a level of 2.90mAOD from flowing into the town centre directly from the Outer Harbour. It does not prevent tidal flooding from other routes from inside Lake Lothing.

This wall, in combination with the restrict of flood water flows through the Bascule Bridge opening, only provides a very low standard of flood protection and was overtopped during the flood event in December 2013.



Improve – defence raising (walls only)

This option involves the construction of 5km of flood walls to the north and south of Lake Lothing, as well as in front of the Royal Norfolk & Suffolk Yacht Club (RNSYC) to the south and along the perimeter of the Outer Harbour to the north where it ties in with the existing coastal flood defences at the north-east corner of Hamilton Dock.

The flood defence wall on the north side of Lake Lothing would need to tie into high ground at its western end. This can only be achieved by either a flood gate across the dual Norwich to Lowestoft railway line near the Peto Way/Barnards Way roundabout or by a further 750m of wall construction to the west. On the south side the wall would need to tie into high ground at its western end close to Waveney Drive.

There would be numerous floodgates, especially on the north side, to allow access to the port quayside area in front of it. The walls, between 0.4m and 1.7m in height, would also be crossed by a significant number of drainage outfalls.

OPTION
3



Improve – defence raising (walls combined with a barrier)

3 barrier locations considered:

Outer Harbour

OPTION
4

This option involves the construction of the barrier across the channel entrance to Lake Lothing on the seaward side of the Bascule Bridge as well as another barrier at the entrance to the Outer Harbour.

It involves the construction of 0.7km of floodwall which ties into the same point of high ground to the south as per the other improve options as well as to the harbour sea wall to the north.

The number of floodgates required and the number of drainage outfall crossings would be minimal in comparison to all the other improve options considered. This option was considered to understand if there would be any benefit to the Outer Harbour area and the key businesses that operate in that area.

CHOSEN OPTION Seaward of Bascule Bridge

OPTION
5

This option involves the construction of the barrier across the channel entrance to Lake Lothing on the seaward side of the Bascule Bridge.

Some of the defences are adaptive and will therefore need to be raised in 50 years in line with sea level rise predictions.

It involves the construction of 1.5km of floodwall along the same alignment as Option 3 but the floodwalls would tie into the barrier structure rather than continue further west within Lake Lothing to tie into high ground.

The height of the floodwalls would vary between 0.4m and 1.7m. The number of floodgates required and the number of drainage outfall crossings would be significantly less than those for Options 3 and 6.

Within Lake Lothing combined with Gull Wing Bridge

OPTION
6

This option involves the construction of the Gull Wing Bridge across Lake Lothing adjacent to the Riverside Business Park at the proposed location for the 3rd Bridge Crossing to consider whether there were any benefits from that joint construction.

It involves the construction of 3.7km of floodwall along the same alignment as Option 3 but the floodwalls would tie into the barrier structure rather than continue further west and tie into high ground at the north-west and south-west ends.

As with Option 3 there would be numerous floodgates, especially on the north side, to allow access to the port quayside area in front of it. The walls would also be crossed by a significant number of drainage outfalls.

What criteria have been used to assess the strategic flood risk management solutions considered?

In assessing the possible options, the following criteria have been used to decide which of those solutions offer the best ways to manage tidal flood risk in Lowestoft now and in the future:

- Level of flood risk reduction
- Impact on navigation
- Impact on residents and businesses
- Environmental and landscape impact
- Impact on highways and bridges
- Buildability
- Delivery timescale
- Cost – capital and whole life
- Potential regeneration benefits
- Potential benefits linked with Gull Wing Bridge

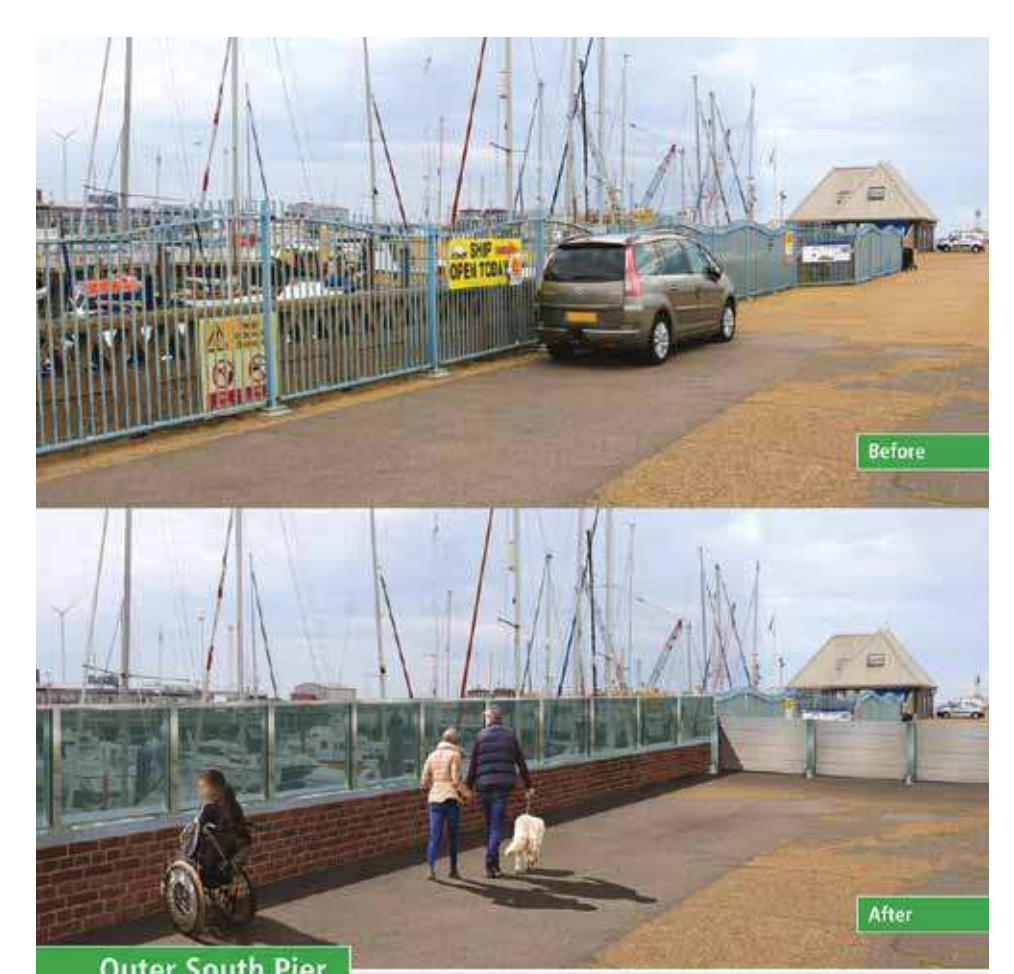
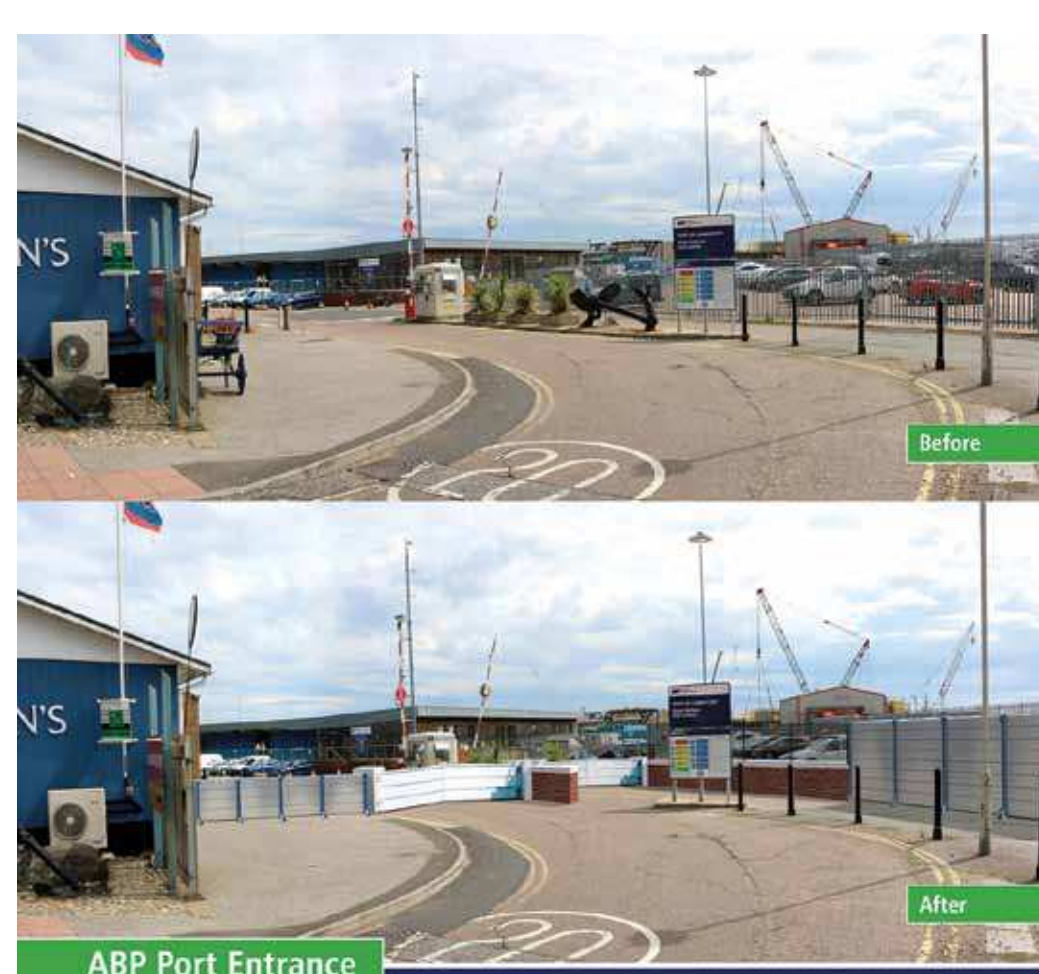
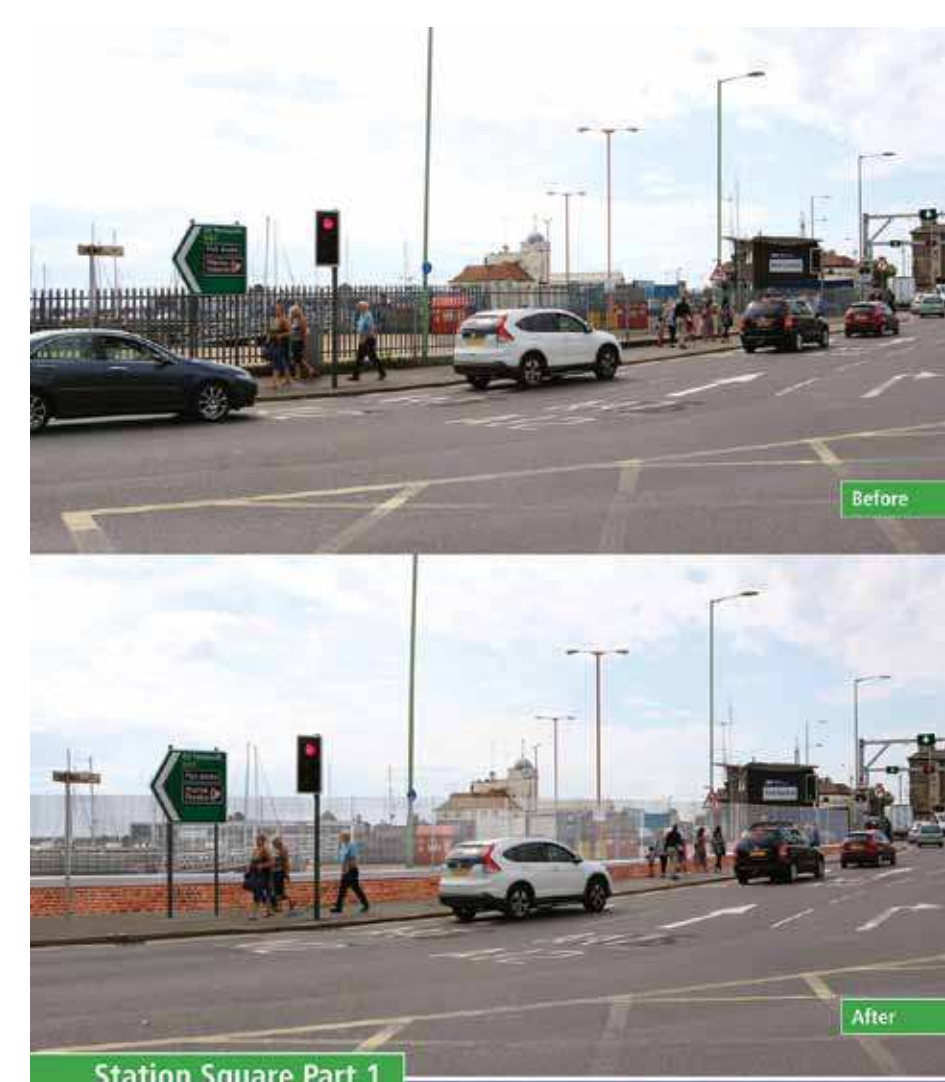
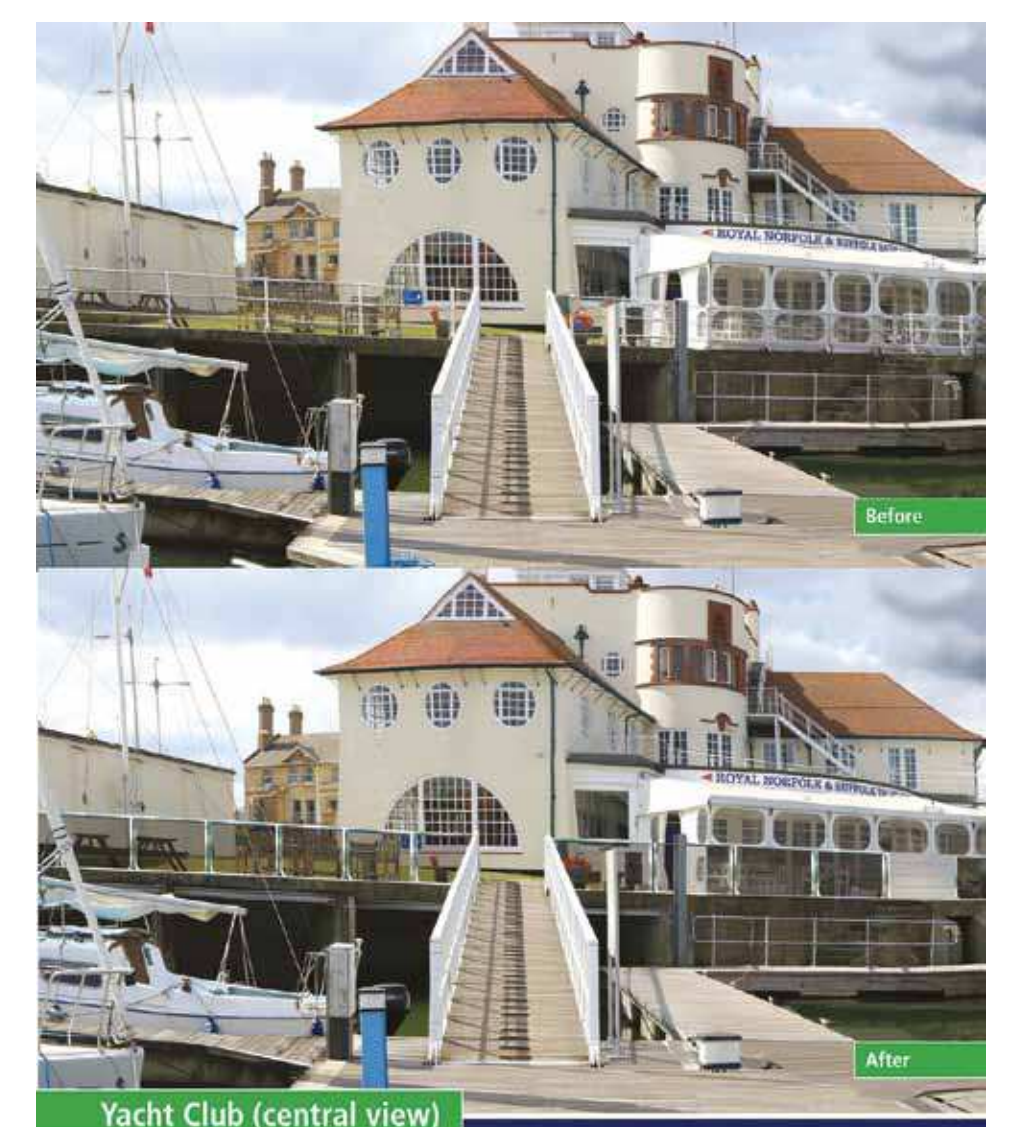
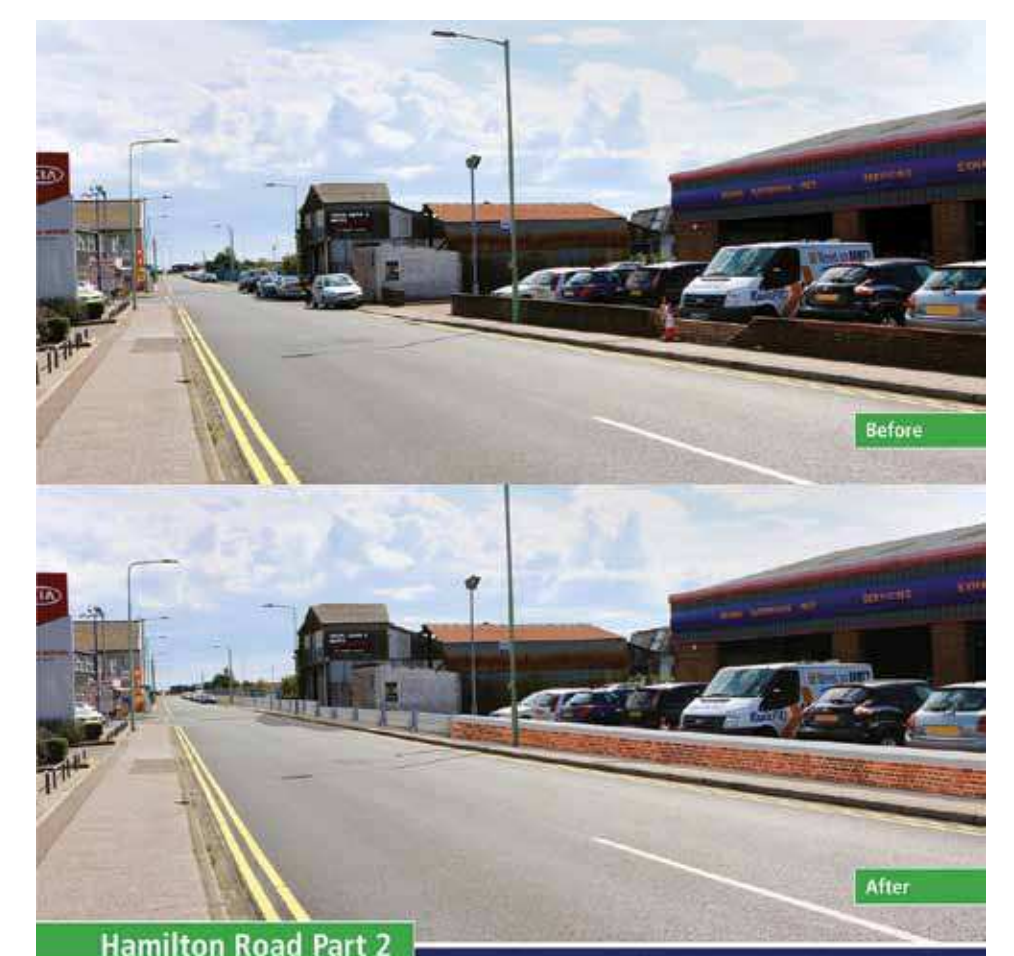
PROTECTION FROM THE SEA TIDAL FLOODWALLS



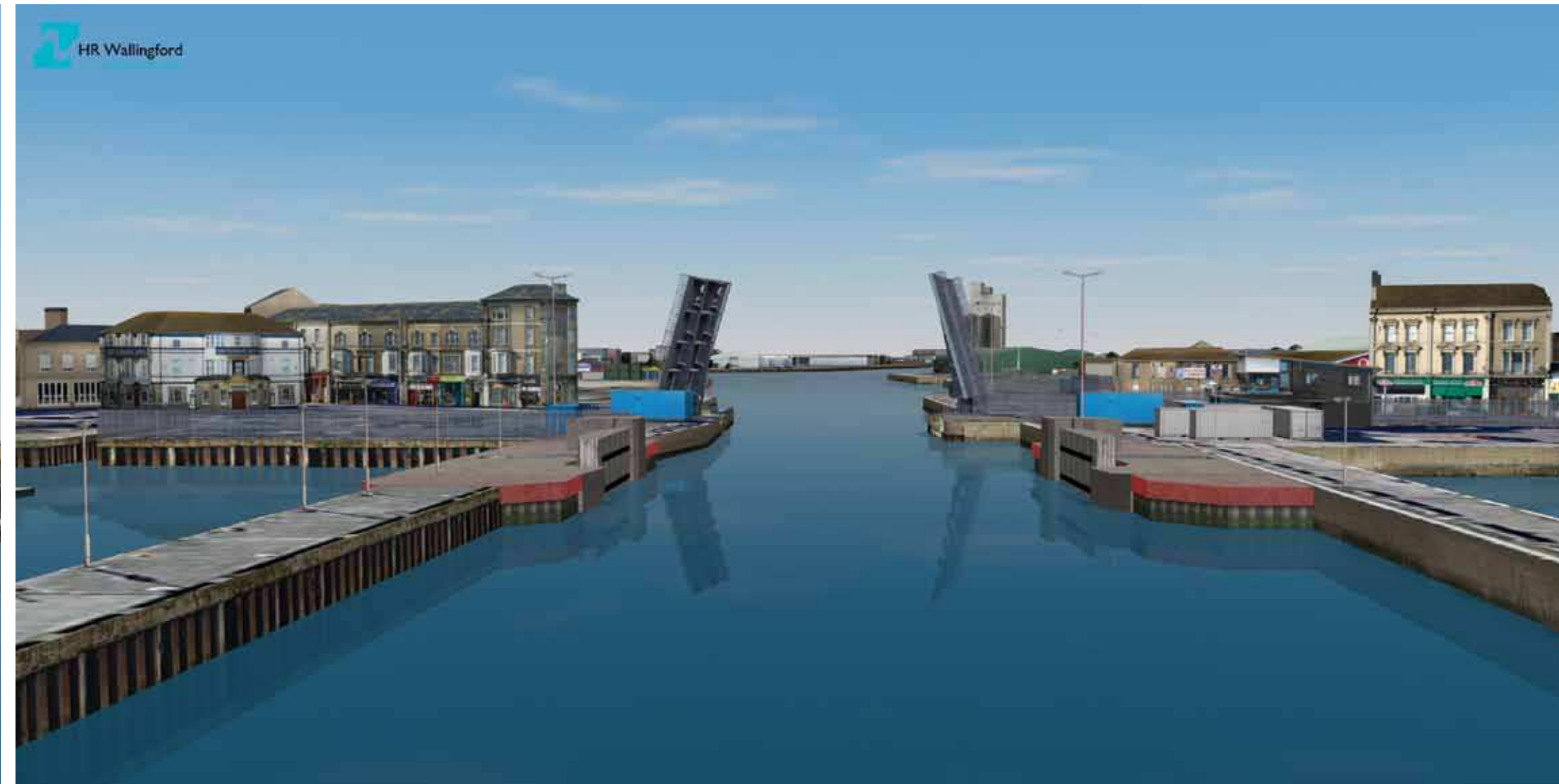
Tidal floodwalls will be built along Hamilton Road and Waveney Road to the north and around the RNSYC and South Pier to the south as shown on the map above.

There will be a mixture of solid floodwalls, demountable defences, floodgates and glass floodwalls. The glass floodwalls will run around the RNSYC and the South Pier to maintain views of the marina and port.

Construction of Package 1 of the tidal floodwalls on Hamilton Road and Waveney Road began in April 2021 and will be completed in summer 2022. Construction on Package 2 to the south of Waveney Road, around the RNSYC and along the South Pier will begin in October 2021 and be completed spring 2022.



TIDAL BARRIER

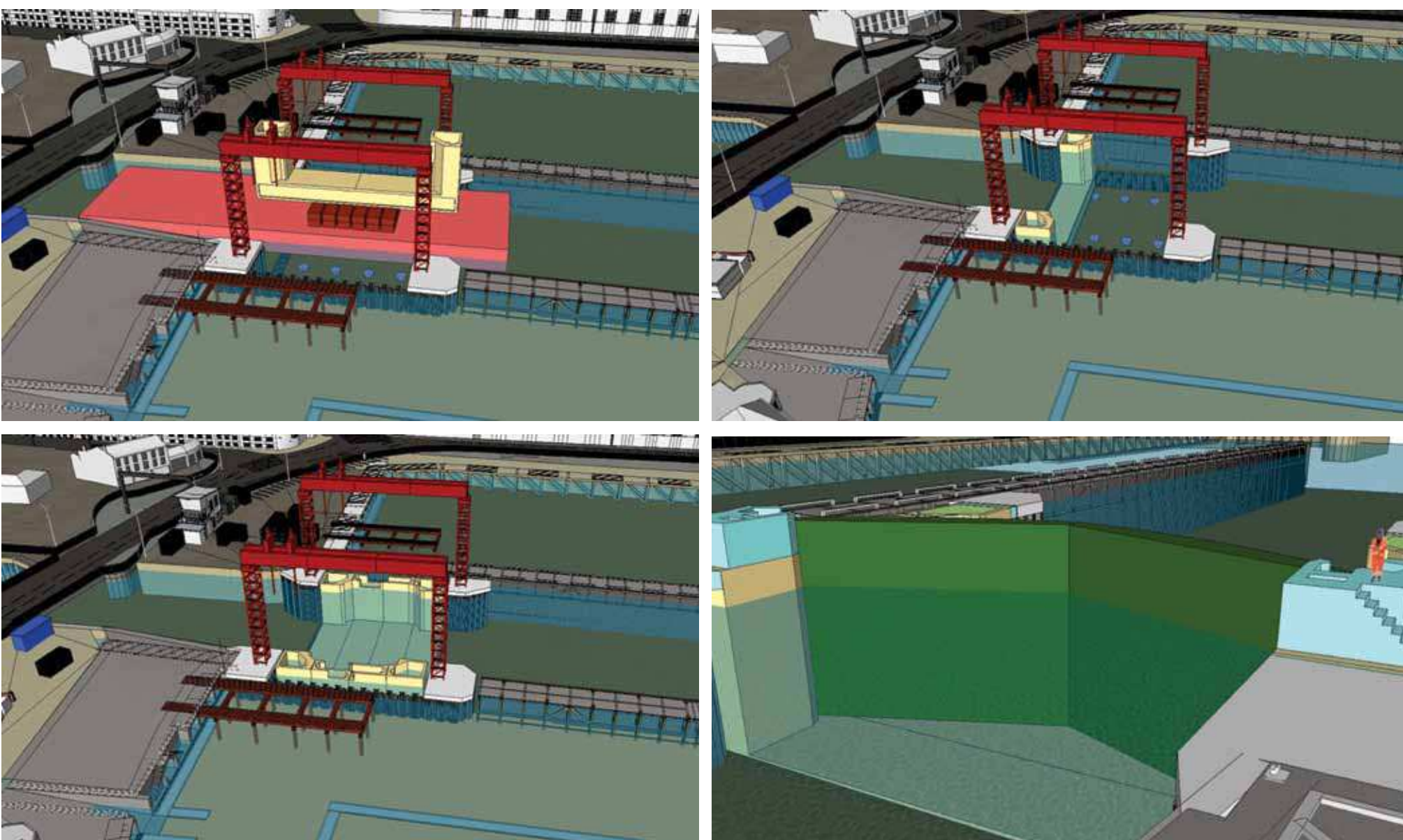


A tidal barrier will be built across the channel entrance to Lake Lothing on the seaward side of the Bascule Bridge.

The tidal barrier will consist of four concrete sills, each approximately 40m long, 7m wide and 10m tall, weighing about 2,500 tonnes. A steel mitre gate will be installed on top, aligned with the Bascule Bridge.

As there is nowhere to divert the navigation channel, the barrier has been designed to keep disruption to a minimum by working over the winter months and closing the channel for only short periods of time. As such, the concrete sills will be built at a site in Lake Lothing and then taken via barge to the barrier site and lowered in place using a crane. The cranes will be built on temporary jetties on either side of the channel. The barrier will leave 28m clear width for port and navigation use.

The mitre gate's top level will be approximately 600mm higher than the existing road level at the Bascule Bridge to provide 1 in 200 years standard of defence (includes allowance for the expected climate change over the next 100 years).



Navigation Simulation

In April 2021 navigation simulations took place at the HR Wallingford UK Ship Simulation Centre. This involved a fully functioning simulator, where the ship bridge was surrounded by a 360-degree simulation of a ship coming into Lowestoft. The simulations were piloted by ABP pilots, just as they do in their day-to-day job. A variety of weather and tide conditions were simulated in both day and night time. The simulations took into consideration both the construction and operational phases of the Project.

The navigation simulation is an important stage for the tidal barrier. From this, the Project team and ABP will produce a navigation plan for the barrier. There will be opportunities for other navigation users to view the simulation and let us know of any thoughts and concerns that they might have so that they can be considered as part of the navigation plan.

Transport Works Act Order

The tidal barrier requires a TWAO. This is granted by the Secretary of State and is needed when construction can change or affect navigation. A TWAO can take up to two years to be approved but we are working with our partners, stakeholders and the community to make sure that we address concerns as early as possible.

One of the critical elements of a Transport Works Act Order is to sufficiently understand and address any areas of concern from those who are affected by the work needed to build the tidal flood walls and barrier. We are making sure that we engage and consult with you to allow ample opportunity for concerns to be raised. These will be fed back through the Project's governance system to enable input from our Board, Strategic Steering Group and Key Stakeholder Group.

PROTECTION FROM RIVERS & RAINFALL

Fluvial and Pluvial Flood Risk Works

Suffolk County Council has responsibility for managing flood risk from surface water and small watercourses. This role includes the identification of locations at particular risk from these sources and, where possible, developing projects to reduce the risk of future flooding. The Council has welcomed the opportunity to partner with East Suffolk Council via Coastal Partnership East to be part of the wider LFRMP which has resulted in the flood risk being reduced for over 150 properties across the town.



New outfall with pumping station being constructed behind.

Velda Close Flood Defence Scheme

Properties in Velda Close and Aldwyck Way were at very significant risk of flooding; there is a long history of events that resulted in internal flooding of houses. The two most serious occurred in 2015 and 2019 when over 20 homes flooded up to 600mm deep. The project has been designed and is due to complete construction in June 2021 of a new flood wall and pumping station that will significantly reduce the risk of flooding occurring in the future. The main source of flooding was from the Kirkley Stream that drains surface water from much of this area of Lowestoft; the new sheet piled flood wall has effectively raised the banks to reduce the risk of water overtopping. In order to ensure the existing surface water systems can continue to drain into the stream even during storm events, a pumping station has been constructed behind the wall and a new outfall placed on the bank. Anglian Water will be adopting and maintaining the pumping station once complete and Suffolk County Council will maintain the flood wall.



The Kirkley stream channel with sheet piled wall during construction.

Property Level Resilience

Where properties were identified as being at risk from surface water flooding, but could not be protected by a community defence such as the one alongside Kirkley Stream, they have been offered Property Level Resilience measures by the Project. The work to install these in over 130 homes is nearing completion. The measures include flood doors, non-return valves in external pipe work and self-sealing airbrick covers, designed to reduce the risk of water being able to enter the property. The systems we have prioritised are those that work without active intervention by the homeowner, i.e. the flood doors are watertight when closed normally (no need to fit an additional barrier or tighten brackets). This means the homes are resilient to a flood that may occur without warning or if residents are away at the time.



HOW IS THE PROJECT FUNDED?

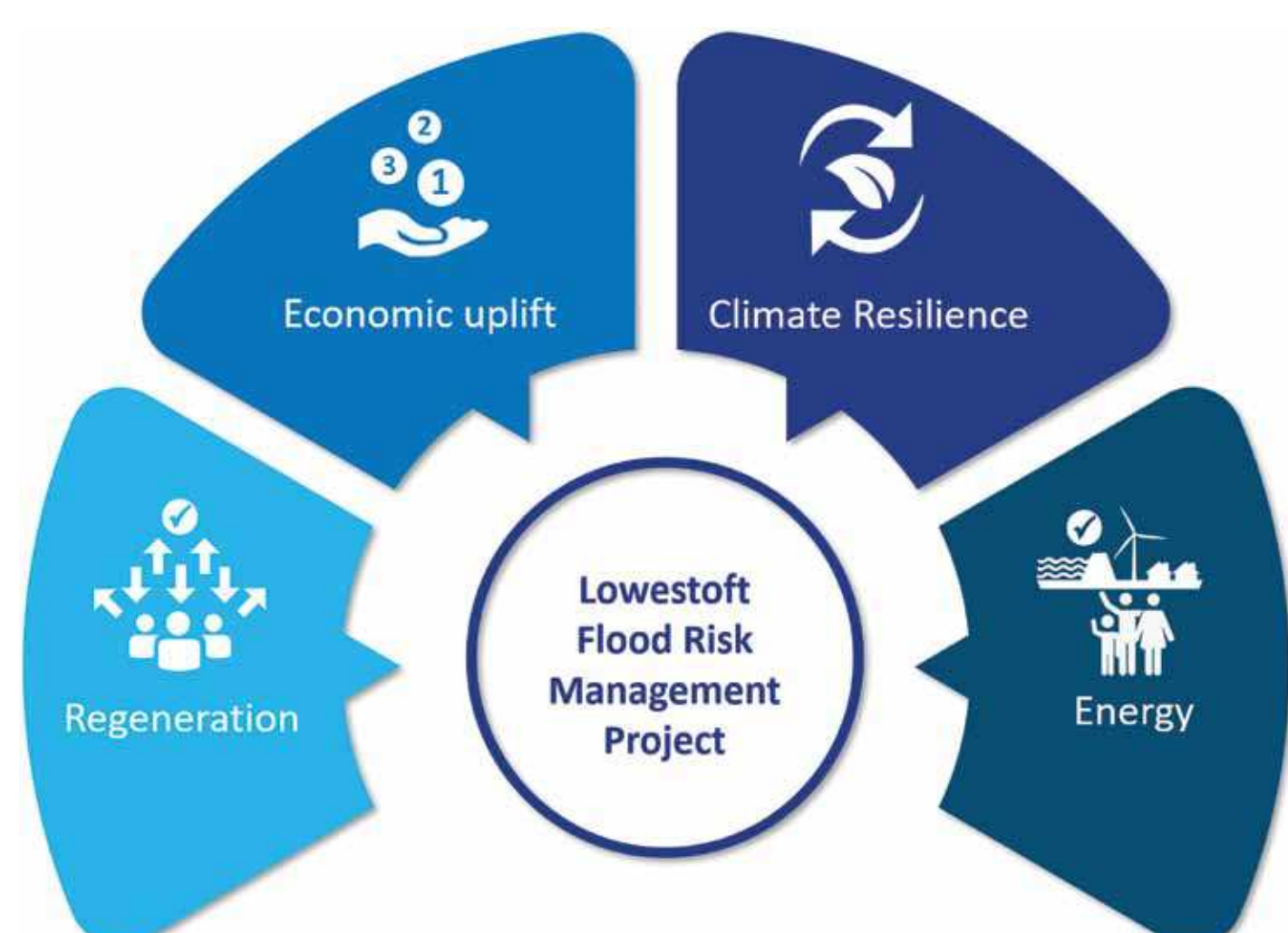
A unique project like the LFRMP requires a unique funding package.

As shown by the 2013 storm surge and recent severe rainfall events, the risks to Lowestoft from flooding is significant. A large number of homes, businesses, infrastructure, utilities and other services have been impacted. This means that the town and business operations are at risk of disruption or even complete shut down in the case of a severe flooding incident.

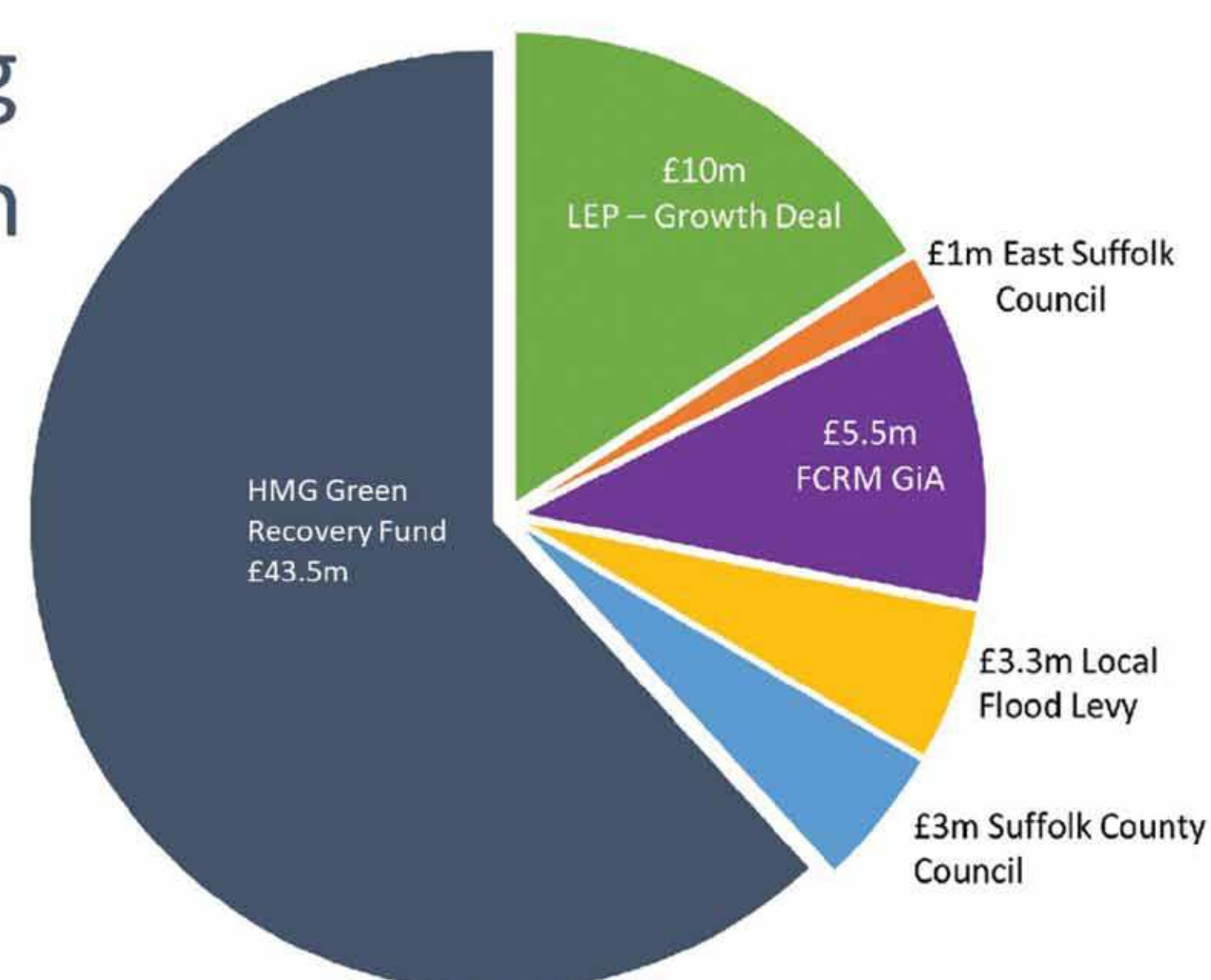
Lowestoft is also at the beginning of a major regeneration journey. Many of the key areas of the town are at flood risk or are at risk of disruption. This impacts the viability of development due to the costs of essential site-level flood defences.

Climate change projections show that sea levels are predicted to rise and the number of severe rainfall and storm events will increase. This means that many more homes, businesses and infrastructure will be at risk over the coming years.

Due to the local and national importance of the offshore energy Projects being supported by the project now and over the coming decades, it is essential that the port remains operational during the construction of the tidal barrier. Closure for any extended period could result in disruption to these nationally critical projects and place future projects at risk, resulting in local and wider economic impact.



Funding Position



Funding partners

As a result of the opportunities that the LFRMP will unlock, an innovative funding package has been assembled thanks to the close collaboration between the multiple funding partners.

These are:

- HM Government (Green Recovery fund): **£43.5M**
- New Anglian Local Enterprise Partnership (Growth Deal Fund): **£10M**
- Defra & Environment Agency (Flood Defence Grant in Aid): **£5.5M**
- Regional Flood & Coastal Committee (Local Flood Levy): **£3.3M**
- Suffolk County Council: **£3M**
- East Suffolk Council: **£1M**

These partners recognise the risks to the community and businesses but also the huge opportunities to enable resilient job creation, economic growth and wider social benefits that the LFRMP will deliver. These partners also support the vision for a thriving town and port that is resilient and can adapt to future climate change impacts.

WHO'S INVOLVED?

Partners



The contract was procured via the **Scape Civil Engineering** framework.



The contractor on the LFRMP is **Balfour Beatty**.

Balfour Beatty

About Balfour Beatty

Balfour Beatty is a leading international infrastructure group. They finance, develop, build and maintain the vital infrastructure that we all depend on.

Their teams operate across the full infrastructure life cycle, combining world-class investments capability and leading construction and support services to deliver large, nationally critical complex infrastructure through to local and regional projects right at the heart of local communities.

- They finance
- They design and project manage
- They develop and construct
- They operate and maintain assets

Their main geographies are the UK, US and Hong Kong with 26,000 employees worldwide. Their customers are government departments and agencies, regulated utilities and private sector organisations.

With over 110 years of experience in delivering highly complex infrastructure schemes through to projects at the heart of local communities, Balfour Beatty operate with the highest levels of quality, safety and technical expertise, integrate with customers and local supply chains and support local communities.

Balfour Beatty's Sustainability Strategy ensures they leave a positive legacy for the people they work with, the communities they work in, and the world in which they operate. Balfour Beatty want to enhance their impact on the environment, working with their supply chain partners, customers and communities to ensure their choices are sustainable. Making the right choices is embedded through Balfour Beatty operations and supported with a robust governance framework.

www.balfourbeatty.com

ABOUT SCAPE SOCIAL VALUE



About Scape

The LFRMP has been procured on the Scape Civil Engineering Framework. Scape is a public sector organisation, in its ownership and its ethos. It has a clear public purpose: the creation of an efficient and effective route to market for all built environment services.

Through a consistent and industry recognised performance management approach, setting appropriate strategic objectives and embedding relevant measures of performance, Scape ensures that all delivery partners in our supply chains and partnerships prioritise social value outcomes as an essential element in publicly procured projects and commissions.



Social Value in Lowestoft

The LFRMP will measure the social value the project generates using the National TOMs Framework. The National TOMs Framework aims to provide a minimum reporting standard for measuring social value.

Our social value work in Lowestoft will focus on creating apprenticeships, reducing carbon emissions, hiring NEETs, saving car miles and initiatives to support older, vulnerable, and disabled people. We will also engage local students, community groups and charities with the project through our community engagement work.

If you'd like to hear more, contact lizzie.forbes@balfourbeatty.com

Social Value Impact

£515 
raised for Breast Cancer Now by one of our site team running 100km in March

1500
students


engaged through East Suffolk Council work and Balfour Beatty work at conferences and virtual events

10 
work experience placements hosted virtually with more planned for summer **2021**

£511,899.00
spent with local SMEs – Tidal Walls

258 weeks
of apprenticeships on the project – local young people 

Volunteering
in Lowestoft food bank in December 2020


2 NEETs
are to be hired in April 2021 

£5,300
contributed to community resilience training through charity Groundwork

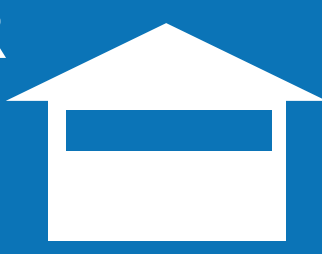
Savings in Co2 planned through eco cabins, electric vehicle charging points and electric vans


Bike scheme installed in the compound saving approx. of car travel and local traffic each day



30
miles

£353,420
spent with local SMEs – Velda Close/PLR



32 job
opportunities
created so far on the scheme 

Car miles saved so far on the project through working at home and hosting virtual meetings:
122,206

COMMUNITY ENGAGEMENT



A vital part of the Project is working with and consulting local communities, businesses and organisations. Your views are important. At various points in the Project there have been public consultations, providing everyone with a chance to have their say. We will also be meeting with communities and businesses throughout the process.

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Working with Young People

Flipside Festival were commissioned by the LFRMP to work with the community to produce a lasting legacy for the flood walls that will help to protect Lowestoft from flooding from the sea.

The Watertight Words project was established by Flipside Festival and has seen over 1000 primary and secondary school children engaged, as well as many other community groups in Lowestoft, with the involvement in the work to understand and reduce flood risk in Lowestoft. The Watertight

Words workshops used audio and visual materials to explore, through language and poetry, people's reactions to the sea, its history of flooding and what the building of the new flood wall will mean. These words have been brought together by the poet Dean Parkin and the art installation is by Gary Breeze.

These installations can be seen in various locations around the town and will be permanently engraved on to the glass sections of the sea wall. If you visit Lowestoft you will see many others filling boardings and other spaces in Lowestoft.



LOWESTOFT
FLOOD RISK MANAGEMENT PROJECT

Issue 4
July 2021

Newsletter



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Community engagement 4

Your involvement 4

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Welcome

Over the past few months we have made vital progress with the Lowestoft Flood Risk Management Project. As you may be aware, in July 2020 the project was awarded £43m from the Government's Green Recovery Fund, which added to funding from the New Anglia Local Enterprise Partnership, Flood Defence Grant in Aid, Local Levy contributions, funding from the Department of Education and contributions from Suffolk County Council and East Suffolk Council means that the project can progress.

Since then, the project has progressed at a pace, with construction of the tidal floodwalls officially beginning in May. Progress has also been made on the design phase of the tidal barrier, with marine ground investigations taking place in February and the completion of the navigation simulation in April.

In May we opened our virtual visitor centre – a place where you can find out about the project, ask any questions you have and leave feedback via a survey. We will be updating the centre throughout the project as we progress. Visit the centre here:

www.lowestoftfrmp.org.uk/consultations

We hope that the information is helpful to you, but if you have any queries at all, please do get in touch.

Best wishes

David Ritchie

Chair, Lowestoft Flood Risk Management Board



Virtual Visitor Centre

In May we launched our virtual visitor centre providing information about development and construction of the tidal flood walls and tidal barrier.

The virtual centre provides information about the history of the project, how it has progressed and the ways in which the project is providing opportunities for Lowestoft.

Information boards feature visualisations of how the flood defences will look and images of work that has already been completed. Visitors can ask questions using a chat facility, which will be collated and answered by the project team. Visitors can also share their views and concerns via a survey.

Visit the centre here:

www.lowestoftfrmp.org.uk/consultations



Flooding from the Sea

Tidal Floodwalls

In May 2021 ground was officially broken on package one of the tidal floodwalls. We welcomed representatives from our partners to a small, socially distanced ceremony on Hamilton Road. We were pleased to share the ceremony via a livestream to over 150 people. The full ceremony can now be viewed on our website here:

<https://www.lowestoftfrmp.org.uk/construction>

Full details of where the tidal floodwalls are being built can be found at our virtual visitor centre.



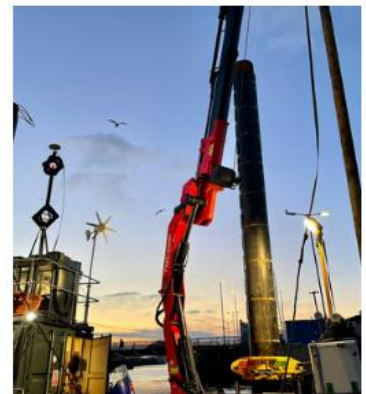
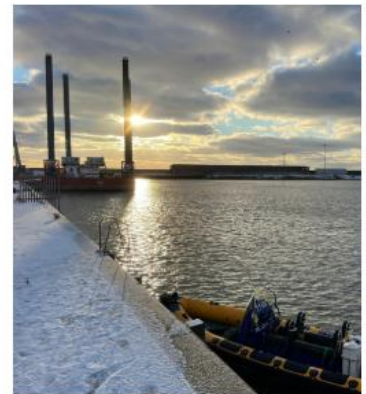
Photos: Warren Page

Tidal Barrier

Progress has been made towards the outline design for the tidal barrier.

Marine Ground Investigations

In February 2021 marine ground investigations were completed. These involved the drilling of test holes in the seabed ranging from 10 to 40 metres deep, from a jack-up barge. Material samples were taken for testing to assess the geotechnical properties of the ground, the results of which will inform the foundation design of the tidal barrier. The analysis will also be used to develop the design of temporary jetties that will be installed for the construction phase of the tidal barrier.



Photos: James Hamnett (Jacobs)

Flooding from Rivers and Extreme Rainfall

Suffolk County Council has responsibility for managing flood risk from surface water and small watercourses. This role includes the identification of locations at particular risk from these sources and, where possible, developing projects to reduce the risk of future flooding. The Council has welcomed the opportunity to partner with East Suffolk Council via Coastal Partnership East to be part of the wider project which has resulted in the flood risk being reduced for over 150 properties across the town.

Construction of a new floodwall and pumping station is nearly complete, which will significantly reduce the risk of flooding of Velda Close occurring in the future.

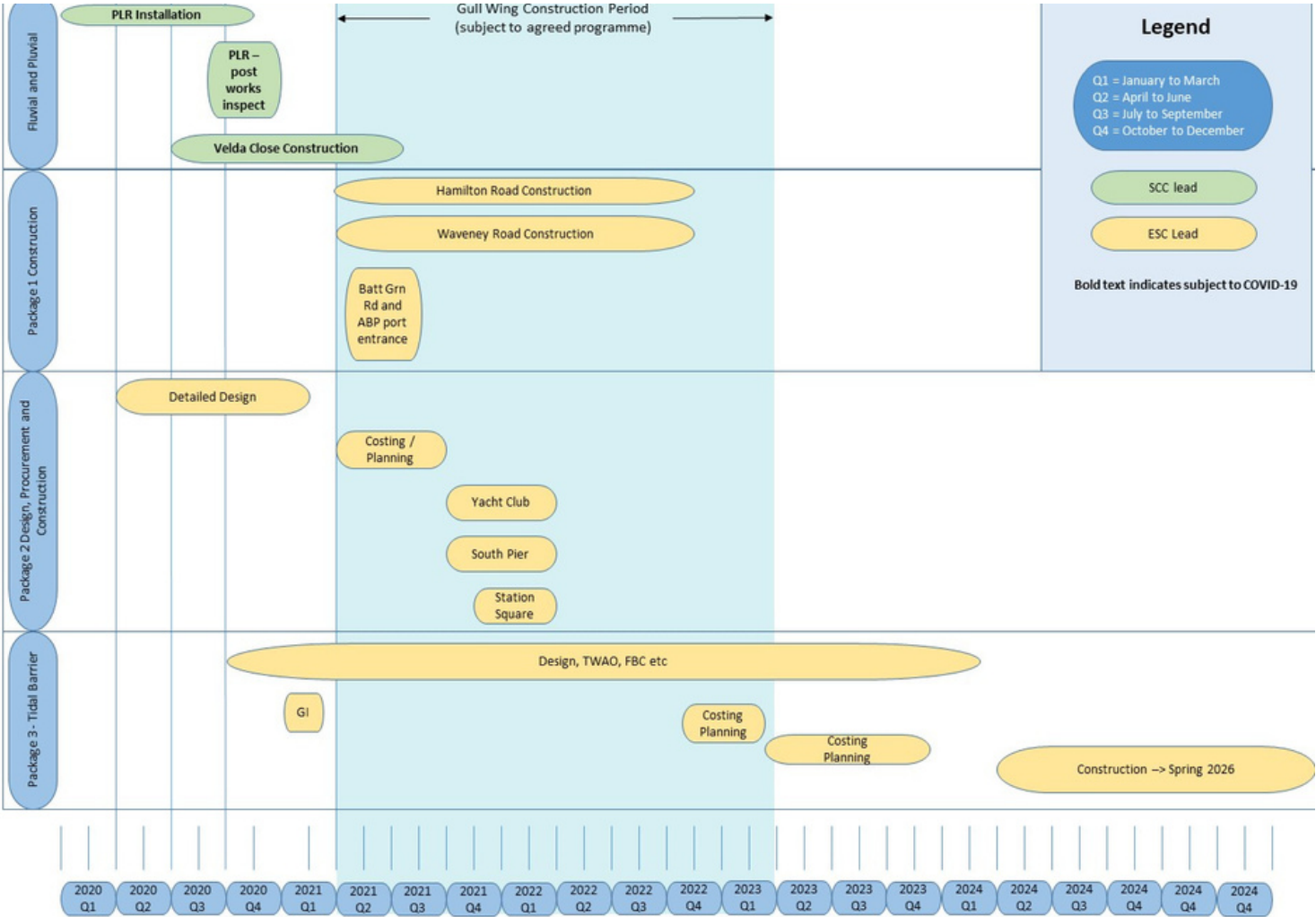
Where properties were identified as being at risk from surface water flooding, but could not be protected by a community defence, they have been offered Property Level Resilience measures. These include flood doors, non-return valves in external pipe work and self-sealing air blocks. Installation of these measures into 123 homes is now nearing completion.

For full details of protection from rivers and rainfall visit our virtual visitor centre here:



www.lowestoftfrmp.org.uk/consultations

Project Timeline



Community Engagement

Our project was procured through the Scape framework, giving us an opportunity to generate social value at each stage of the project. Our social value work in Lowestoft will focus on creating apprenticeships, reducing carbon emissions, hiring NEETs, saving car miles and initiatives to support older, vulnerable, and disabled people. We will also engage local students, community groups and charities with the project through our community engagement work. So far this year this has included:

- In February we provided four virtual work experience placements for students interested in the industry.
- In June our apprentices gave presentations to over 100 students at East Coast College. We employed a local videographer to film the presentations so that we can share them across our website and social media.
- In July we attended Constructarium's Women in Construction event at CITB headquarters in Bircham Newton. We met bright and talented people interested in joining the industry, who we hope to welcome to our site for work experience in the future.
- We have engaged local social enterprise Access Community Trust to provide our onsite catering for our meetings and training days.
- We are installing electric charging points around our site compound and hiring electric vans.
- We have procured bikes from a local company to use around site, saving up to 30 car/ van miles per day.



Your Involvement

This year we have begun engaging with the public to understand your views and concerns about the project as we progress. We have re-established our Strategic Steering Group and Key Stakeholder Group, which meet at regular intervals to provide the project team with input about our activity.

In May we hosted a series of Virtual Public Meetings, inviting members of the public to join us on a Zoom call to hear about the project and ask any questions. If you missed these, we will be hosting some bite size update sessions soon.

Stay in touch

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Our Partners



Our Delivery Partners





LOWESTOFT
FLOOD RISK MANAGEMENT PROJECT

Newsletter

Issue 5
December 2021



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Welcome

Since our July newsletter great progress has been made on the Lowestoft Flood Risk Management Project.

The construction on the tidal floodwalls has progressed well, with the first of the brick cladding on the wall on Waveney Road being installed, smartening the area while also providing vital protection against flooding.

The tidal barrier structure will now take the form of a 40m mitre gate, the first to be built without diverting the navigation channel and the second largest in the UK. This decision was taken following navigation simulations of the original 28m design which showed a necessity to maintain the current width of the navigation channels for larger vessels using the inner harbour. This will allow Lowestoft to continue developing as a hub for offshore wind energy.

The project has also been working closely with schools and young people to offer opportunities of work experience, training and employment.

Our Virtual Visitor Centre where you can find out more about the project, ask any questions you have and leave feedback via a survey is open now and will remain so for the duration of the project. Visit the centre here:

www.lowestoftfrmp.org.uk/consultations

We hope that the information is helpful to you, but if you have any queries at all, please do get in touch.



Best wishes

David Ritchie
Chair, Lowestoft Flood Risk Management Board

Flooding from the Sea

Tidal Barrier

A 40m mitre flood gate, the second largest in the UK, will be built in the entrance to Lake Lothing. The ambitious project will see the mitre flood gate be the first of such structure in the UK to be built without diverting the navigation channel. The gate will form the tidal barrier element of the project and be built over a number of winter seasons to maintain access to the inner harbour.

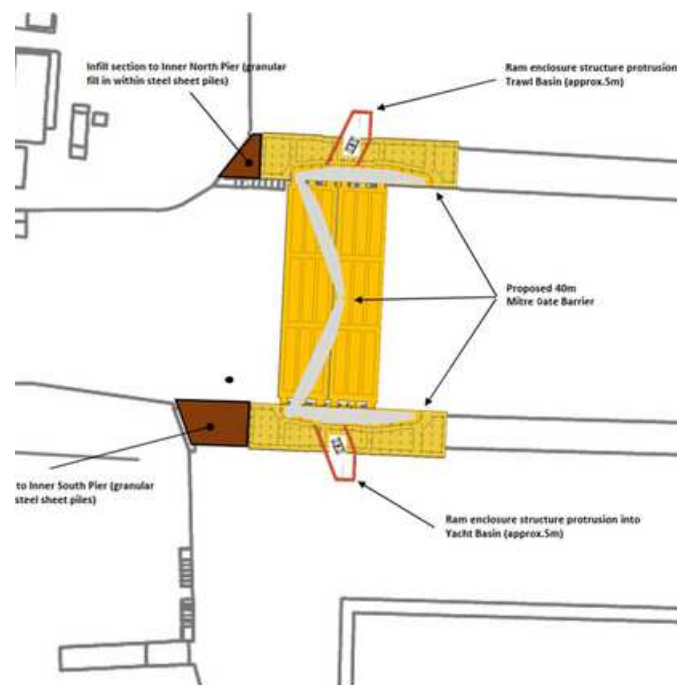


Image: Colne Barrier

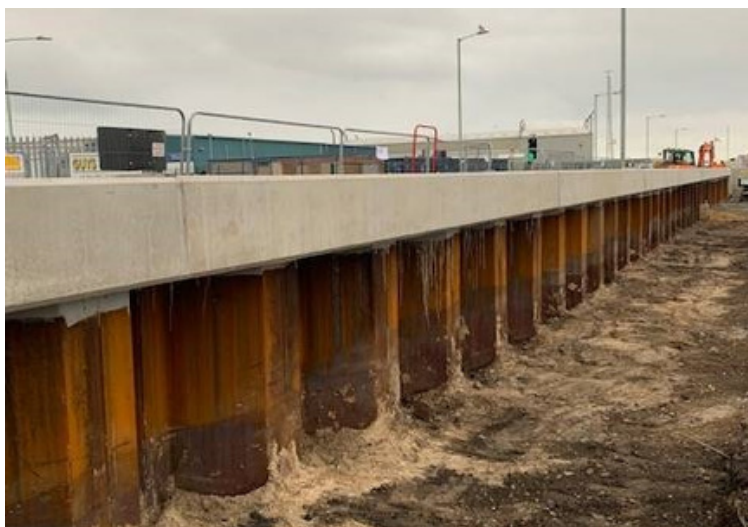
Members of the project team recently visited two other tidal barriers in the region: the Colne barrier and the Ipswich barrier.

Learning will be taken from both these projects to inform the Lowestoft tidal barrier.

Tidal Floodwalls

Construction on package one of the tidal floodwalls officially began in May 2021, with works continuing at a pace along Hamilton Road and Waveney Road. The tidal floodwalls are starting to take shape on

Waveney Road, with brickwork and coping stones already installed. Elsewhere on Hamilton Road, we are making great progress with painting of sheet piling underway.



The construction on package two of the tidal floodwalls around the Royal Norfolk and Suffolk Yacht Club and South Pier is expected to start in early 2022 and will be split over two winter seasons,

with work stopping in March 2022 and recommencing in October 2022. Work can only take place over the winter months due to the impact construction would have on tourism in the summer.

Flooding from Rivers and Extreme Rainfall

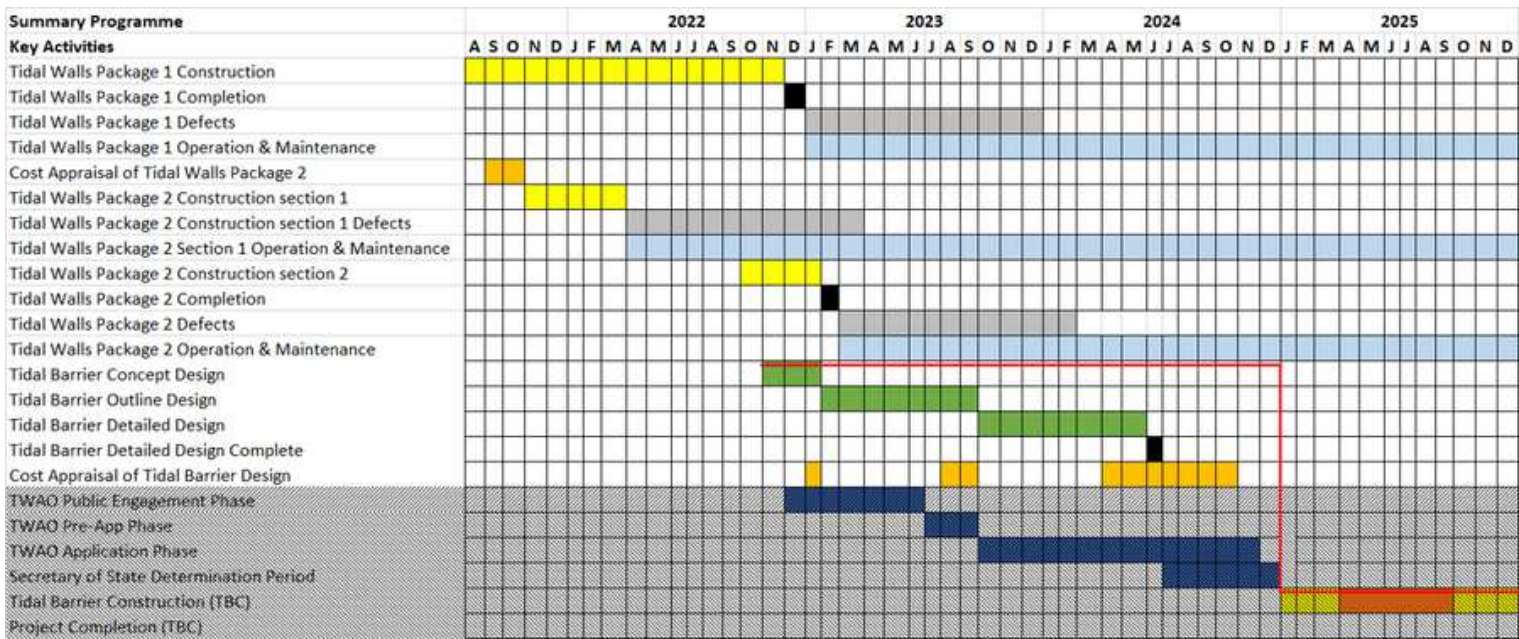
The fluvial and pluvial works have been led by Suffolk County Council and involve the installation of new flood walls and a pumping station at Velda Close. These works were completed in summer 2021.

Property Level Resilience (PLR) measures have also been installed in 123 households. Following final checks, this element of the project was completed November 2021.



Project Timeline

The change in design of the barrier gate has had an impact on the project timeline. The detailed design phase for the mitre gate will begin next year and provide a firm completion date. As a result of this the programme below indicates the current programme, with the greyed out section representing the elements of the project subject to change until the detailed design has been completed.



Your Involvement

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Working with young people

Over the past few months we have been working widely within the community, particularly around working with schools and young people.



Virtual Careers Fair

At the Norfolk and Suffolk Coast Forum we launched a Virtual Careers Fair for young people offering an unrivalled opportunity to explore routes into civil engineering, from higher education to apprenticeships, and find out about opportunities local to the region.

Using gaming technology, visitors can independently navigate the fair, with stands from leading employers and organisations including the Environment Agency, Institute of Civil Engineering and East Suffolk Council.

The Virtual Careers Fair has been made possible thanks to generous support from sponsors, including Aecom.

Visit the Virtual Careers Fair at <https://nscec.exhibition.app>

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Work Experience

With the start of construction on the tidal floodwalls we have been delighted to welcome a number of young people on work experience placements on the project.

In June our contractor Balfour Beatty attended the Constructionarium Women in Construction event where we met Irena who completed a work experience placement in September.



We have also been working closely with East Coast College to offer opportunities to their construction students. During the October half term we welcomed Zak, who we have subsequently been able to offer a long-term work placement and joins our team each Friday.



In November we worked with the Prince's Trust to offer a two-week work placement to Sean as part of their Team Programme in Lowestoft. During his placement Sean also gained an Industrial Cadets Silver Certificate.



Our Partners



Our Delivery Partners



2022/23

Consultation

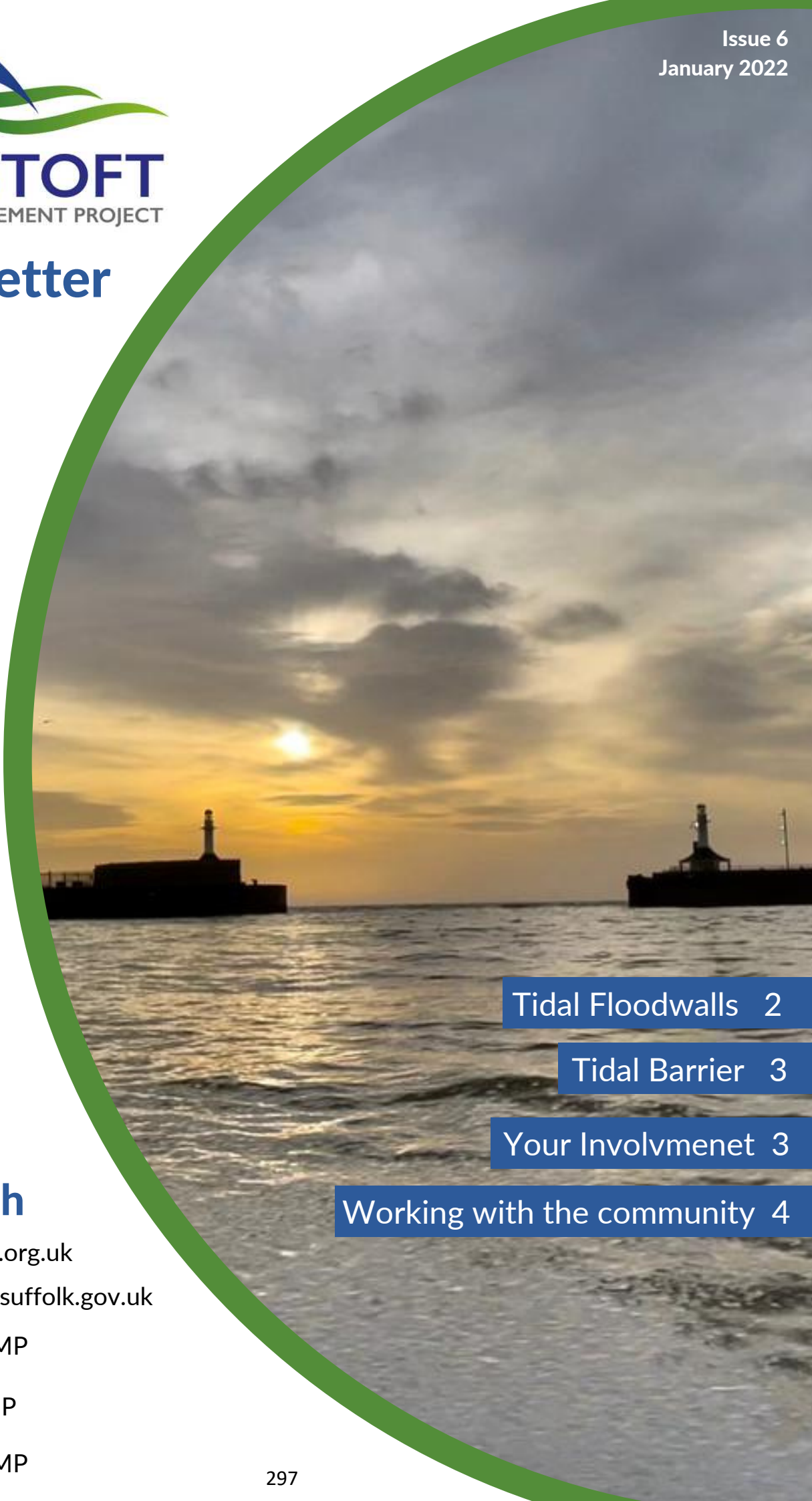
Materials



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Welcome

We have begun the new year with the start on construction of the next phase of the tidal floodwalls. This will see glass floodwalls around the Royal Norfolk and Suffolk Yacht Club and South Pier, which will maintain site lines across the harbour and marina. I am delighted to confirm we have also recently completed the first stretches of the floodwalls in the Fisherman's Quay area on Hamilton Road and a stretch of wall on Waveney Road, look through the newsletter for photos of this fantastic work.

Over the past month we have continued to work closely with community groups to ensure our project is bringing maximum value to Lowestoft. Take a look through this newsletter to see how we are upcycling our pallets, working with the Prince's Trust and helping Lowestoft based charity Re-Utilise.

The design phase of the tidal barrier continues. As we develop this we will be asking to hear your views and concerns about the design and construction. We will be holding a consultation in the coming months, please keep an eye on our social media channels and this newsletter for details of how to be involved. In the meantime our Virtual Visitor Centre remains open with all the latest information about the project. Visit the centre here:

www.lowestoftfrmp.org.uk/consultations

Best wishes

David Ritchie
Chair, Lowestoft Flood Risk Management Board



Flooding from the Sea

Tidal Floodwalls

We began work to divert utilities along the South Pier on 17th January 2022. Construction will continue until March, when work will break over the summer. This break is to prevent disruption to the area during the busy tourist season.

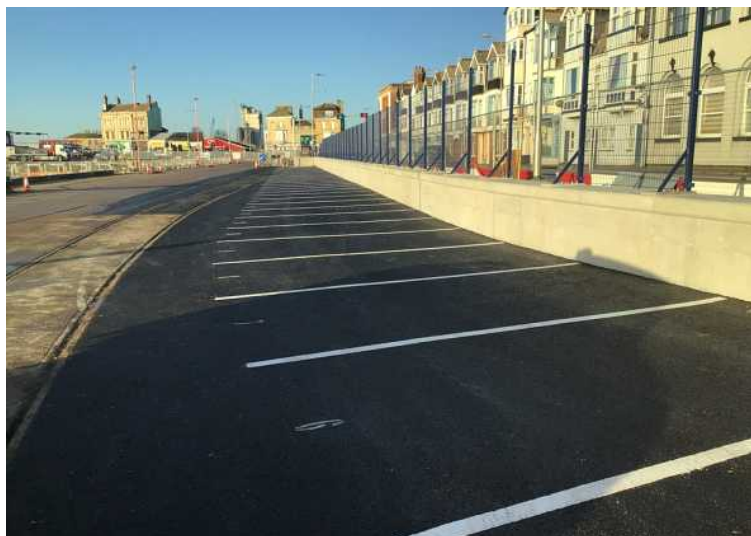
Works at the Royal Norfolk and Suffolk Yacht Club and remaining works along the South Pier will commence in October 2022 and are planned for completion in 2023.

The floodwalls on South Pier will be a brick clad wall with concrete coping topped with glass panels and the floodwalls around the RNSYC will be a one metre high glass floodwall. These will provide flood defence while maintaining an unobstructed view to the marina and outer harbour.



Tidal Floodwalls (Continued)

Construction on the tidal floodwalls along Waveney Road and Hamilton Road is continuing well, with sections around the Fisherman's compound on Hamilton Road and a stretch on Waveney Road now complete. The photo (bottom, left) shows a trial deployment of the demountable defences along Hamilton Road.



Tidal Barrier

The concept design of the 40m mitre flood gate structure was completed before Christmas. A Navigation Simulation for the design will take place in January, an update on this will be available in our February newsletter.

Your Involvement

The tidal barrier requires a Transport Works Act Order (TWAO). This is granted by the Secretary of State and is needed when construction can change or affect navigation. To complete this work and to enable us to go ahead with the project we will of course need to work closely with local communities, businesses and organisations. As the detailed design of the barrier is developed we will be holding a series of public consultations next year to better understand your concerns. We will share details of these consultations across all our platforms including this newsletter.

Working with the community

Last month we helped a number of projects in the community as part of our work.

Upcycling Pallets

We donated pallets leftover from our construction work to the foundation and progression courses at East Coast College, where they will be upcycled. In December 2021 they created some Christmas decorations, and this year plan to make animal boxes for birds and hedgehogs and some compost bins.

We hope to continue donating our pallets as the project progresses.



Racking Donation to Re-utilise

We recently donated some racking to Re-Utilise in Lowestoft, a social enterprise set up to divert waste from landfill, provide craft workshops and a Community RePaint scheme. Here are Bradley and Matt from Balfour Beatty with the racking. While there they also put up some other shelves and fitted some kitchen cabinets!



Prince's Trust Mock Interviews

Our contractor Balfour Beatty supported participants on the Prince's Trust TEAMS programme with Inspire Suffolk. This was a valuable occasion for participants to spend time with a local employer and get interview practice.

Support of Food Delivery Vans

We and our contractor Balfour Beatty have come together to support food delivery vans, providing meals and support to vulnerable people and families.

The Access Community Trust set up PINK Orange at the start of the pandemic to support struggling families with a vital food provision, in the form of easy-to-follow ingredient kits. Their aim was to not only provide essential food support but also encourage children and the young people of the household to learn how to cook in a simple way, through simple recipe cards and YouTube videos.



Considerate Constructors

We are proud to have been awarded a certificate of excellence from the Considerate Constructors scheme. We have maintained our high score - including 9/9 for Respect the Community, Care about Appearance and Care about Safety!

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Welcome

The first few months of 2022 have seen great progress to both the construction of the tidal flood walls and the ongoing design phase of the tidal barrier.

Stretches of tidal flood wall are now complete on Hamilton Road and Waveney Road, with construction moving into new areas including the South Pier and in the Port entrance. Read on to see photos of these works.

In January navigation simulations took place for the new design for the tidal barrier, a 40m mitre flood gate. Below you will find images of the simulations kindly provided by HR Wallingford.

We have also continued working with the community, including providing Easter

Eggs to Lowestoft FISH (Food in School Holidays), welcoming STEM students for a site visit and continuing to offer work experience placements.

Our Virtual Visitor Centre remains open and offers an useful overview of the project so far and offers the opportunity to get in touch with the project team and ask any questions you may have.

Visit the centre here:

www.lowestoftfrmp.org.uk/consultations

Best wishes

David Ritchie
Chair, Lowestoft Flood
Risk Management Board



Flooding from the Sea

Tidal Flood walls

In April we moved onto the next stage of the tidal flood walls, beginning construction on a section of Waveney Road from the bus stop around to the Port control office.

This required a short night closure on Waveney Road to install a barrier on the footpath. A diversion to the footpath is clearly signed.



Tidal Floodwalls (Continued)

Construction on the tidal flood walls on Waveney Road and Hamilton Road continues. Work on the South Pier has paused over the summer months to prevent any impact on tourism the construction might bring, work will recommence in the autumn. Below are a selection of images which show our progress.



Concrete pour on the South Pier.



Temporary access to the South Pier.



Coping stones near the Port entrance on Waveney Road.



Crane assisting sheet piling works on Hamilton Road.



Completed tidal wall and fence on Hamilton Road.



Completed tidal wall on Hamilton Road.

Tidal Barrier

We are currently in the Outline Design Phase of the tidal barrier, which will take the form of a 40m mitre flood gate.

At the end of January a Navigation Simulation was successfully completed on the design for the 40m mitre flood gate. This took place at HR Wallingford UK Ship Simulation Centre. Fully functioning bridge simulators were used, where the bridge was surrounded by a 360-degree simulation of a ship coming into Lowestoft. The simulations included a variety of weather conditions both in day and night time.



Image: HR Wallingford



Image: HR Wallingford

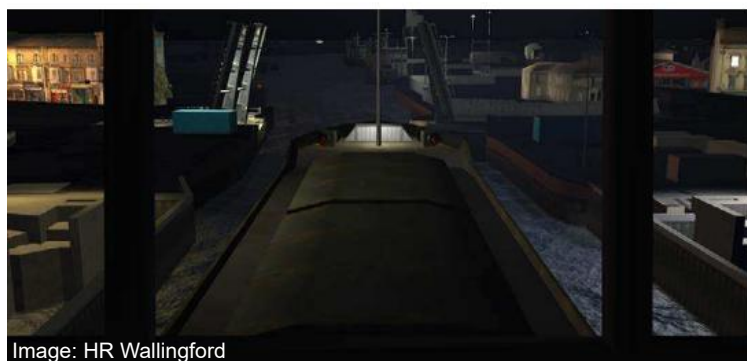


Image: HR Wallingford



Image: HR Wallingford

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Virtual Visitor Centre

Our Virtual Visitor Centre is open now and is a fantastic place to find out more about the project and ask any questions you may have.

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Working with the community

We have continued provide opportunities for young people and work with community groups in Lowestoft.

Easter Eggs

We have donated 200 Easter Eggs to Lowestoft FISH (Food in School Holidays). Run by Lowestoft Community Church, FISH supports many families in the town.



Site Visit

In March we welcomed engineering, science and maths students from University Technical College Norfolk to our site for a tour of Waveney Road, Hamilton Road and the South Pier. Students were able to see our construction operations happening in real time and get a feel for where we are building flood defences in Lowestoft, from the safety of their minibus.

Following the site tour, students were given a presentation on apprenticeship opportunities, effective networking and communication skills as part of their programme with charity Career Ready.



Work Experience



We have been working with The Prince's Trust and their latest cohort of TEAMS programme participants. As part of this we have supported three work experience placements, including Ryan who was really engaged with the project, asked loads of questions and enjoyed his time on our site.

We also ran some mock interviews for the students, enabling them to get some practice with employers before their programme ends.



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FLOOD RISK MANAGEMENT PROJECT

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Welcome

In this edition of the Lowestoft Flood Risk Management Project newsletter, you can see the progress being made in the construction of the tidal flood walls, including the installation of flood gates into the entrance to the port and further progress to the defences on Hamilton Road.

We are delighted to be partnering with Lowestoft Heritage Open Days, with an exhibition taking place at the Parcels Office on Tuesday 13 September where there will be information about project. We will also be hosting some sessions with schools on Wednesday 14 September. Read on to find out more.

We have also included a dashboard of our social value work. Produced by our contractor Balfour Beatty, the dashboard includes detail of how much money the

project has spent with local small and medium sized enterprises, as well as details of social value activities including volunteering activities and work experience placements.

Our Virtual Visitor Centre remains open and offers an useful overview of the project so far and offers the opportunity to get in touch with the project team and ask any questions you may have.

Visit the centre here:
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Best wishes

David Ritchie
Chair, Lowestoft Flood
Risk Management Board



Tidal Flood Walls

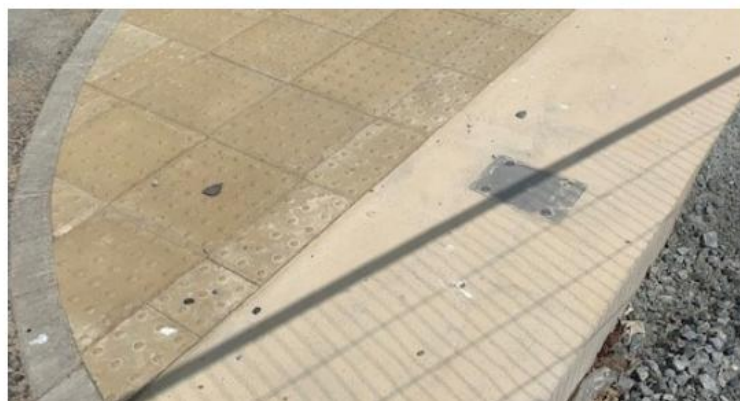
Construction on the tidal flood walls is continuing well. The works on Hamilton Road continue at pace, with much of the work now completed. We have continued to make progress on the works to the port entrance with flood gates now installed.



Flood gates installed in the port entrance.



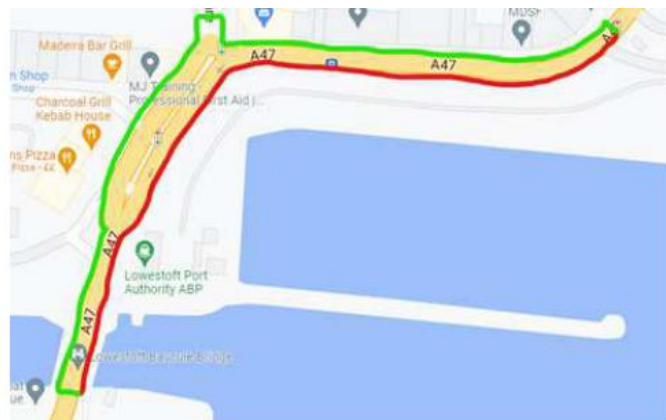
Waveney Road works area
and traffic management.



Newly installed tactile paving
and curb on Hamilton Road.

Tidal Flood Walls (Continued)

Work on Waveney Road has progressed into the Station Square area. As part of this work the footpath on the port side of Waveney Road will be closed until spring 2023 from the port entrance to the end of the bascule bridge as shown by the red line on the map.



A diversion has been signed from the port entrance to the end of the closure, allowing pedestrians to cross the A47 safely. This is outlined in green on the map. We are grateful for your cooperation as construction takes place on these vital defences and apologise for any inconvenience caused by this closure.

Tidal Barrier

We are continuing with the outline design phase of the 40m mitre flood gate. This month we have commenced the Environmental Impact Assessment for the barrier design. We will be consulting our stakeholders on this in the autumn.

Lowestoft Heritage Open Days

As part of the Lowestoft Heritage Open Days 2022, we will be holding an exhibition where you will be able to find out about the history of flooding in Lowestoft and the innovative ways our project is working to help protect the town from future flood events. This will also be an opportunity to talk to members of the team and ask any questions you have.

Exhibition times: Tuesday 13 September, 11.00am - 2.00pm
Venue: Parcels Office, Lowestoft Railway Station, Denmark Road, Lowestoft NR32 2EG

No booking required

Full details: <https://www.heritageopendays.org.uk/visiting/event/protecting-lowestoft-from-future-flooding>



We are also holding sessions for schools where as well as sharing exciting news and developments of the project, there is an opportunity for students to take part in an interactive naming competition and be part of Lowestoft's future heritage.

These sessions will last approximately 50 minutes and are aimed at Key Stage 4 and Key Stage 5 students.

Session times: Wednesday 14th September at 12pm, 1pm and 2pm
Venue: Parcels Office, Lowestoft NR32 2EG
Booking required, please contact charlotte.flight@eastsoffolk.gov.uk



Virtual Visitor Centre

Our Virtual Visitor Centre is open now and is a fantastic place to find out more about the project and ask any questions you may have.

www.lowestoftfrmp.org.uk/consultations

Your Involvement

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SOCIAL VALUE | APRIL 2020 - JUNE 2022

Balfour Beatty

LOWESTOFT FLOOD RISK MANAGEMENT PROJECT

Balfour Beatty work with the Social Value Portal to measure the social value add of the Lowestoft Flood Risk Management Project. This infographic shows how the decisions made by Balfour Beatty, East Suffolk Council and the supply chain are providing added social value in the community we are working in (to date).



Environmental Benefits

£35k

Social Benefits

£1m

Economic Benefits

£2.4m

Total Social Value Add: £3.5million



19 SMEs

Local small and medium sized enterprises engaged



£445,500

spent with local large organisations

£3million

spent with local small and medium sized enterprises (SMEs)



More than **8,000 days** worked on the project by local people

14 local people (FTE) employed



Working with **x2 social enterprises**

£4,226

generated through volunteering

2,000

students reached



429 tonnes

saved through decarbonisation

200,000

car miles saved on the project through car-sharing, public transport and bike scheme



six apprentices employed

£540k

of added value through local employment

Note: Local is defined as within 40 miles

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Working with the community

We have continued provide opportunities for young people and work with community groups in Lowestoft.

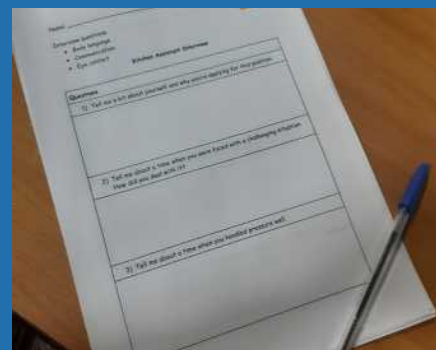
Beach Clean

In May a team of volunteers from Coastal Partnership East, Balfour Beatty, AECOM, SCAPE and Claret Civil Engineering came together to help keep Lowestoft's beaches clean.



Mock Interviews

We were pleased to help Ormiston Denes Academy with mock interviews. We met with Year 10 students and provided them with a mock interview experience. We were really impressed with the student's enthusiasm, giving some really engaging answers.



Upcycling

Earlier this year we supplied East Coast College with some pallets for their students to use in upcycling projects, including the construction of these planters.



Work Experience

We have continued to welcome students onto our site for work experience, including Katerina, from University Technical College Norfolk, who sought out work experience following a site visit in March.



**Key Stakeholder Extended Consultation –
hosted by the Lowestoft Flood Risk Management Key Stakeholder Group
Friday 21st October 2022**

Agenda

Timings	Item	Responsible
9:00am	Coffee, arrival and networking	
9:30am	Welcome and aims of the day	Phil Aves, Chair LFRMP Key Stakeholder Group
9:45am	Project update, barrier construction, next steps and findings of Navigation Impact Assessment followed by questions and answers session	Tamzen Pope, Project Director, LFRMP Tom Farley, Balfour Beatty Charles Schelpe, Jacobs PLC
11:00am	Tea/coffee break	
11:15am	Introduction to the Environmental Impact Assessment	Emma Adam Jacobs Plc
11:30 am	Introduction to the workshop	Sharon Bleese, Coastal Partnership East
11:35 am	Workshop exploring: Impacts of EIA, barrier construction and NIA on you/your business	All
12:30 pm	Lunch	
1:20 pm	Welcome back- setting the scene for the afternoon programme	Phil Aves, Chair LFRMP Key Stakeholder Group
1:30 pm	Barrier operation explanation followed by questions and answers	Tamzen Pope, Project Director, LFRMP Charles Schelpe, Jacobs PLC
2:15 pm	Introduction to the workshop	Sharon Bleese, Coastal Partnership East
2:20 pm	Workshop exploring: Operational impacts Existing protocols and policies Maintenance and impacts of annual exercise Regular operation and impacts on navigational use.	All
3:20pm	Reflections on the day from workshop participants	All – led by Phil Aves, Chair LFRMP Key Stakeholder Group
3:35 pm	Summary, next steps and close	Sharon Bleese, Coastal Partnership East
3:45 pm	Meeting close	

Questions and Answers

Session 1 – project update

Q. In terms of maintenance plan work – Great Yarmouth (GY) is out of action. Are you looking at liaison with GY to ensure Broads are accessible and not closed off?

A. Yes. Looking into the future as well with options for Yarmouth. About planning and timing.

Q. How are materials going to arrive? Impact on properties around Bascule Bridge. Plans for piling also? How long for?

A. Piling operations timing tbc. Most materials to be delivered by road to Commercial Road. From there it will be brought by barge to the construction site. Most materials will be stored in Commercial Road. Options of storing materials on platform in channel. Gates to be fabricated in Europe and come via Sea. Cill beam to be constructed in Commercial Road.

Q. Will piling operations be 24/7 or daytime?

A. At the moment plans for daytime operations only.

Q. If the piles are 40m long, are they going to be brought in?

A. Brought in 12m sections as per limits. Then welded in Commercial Road then lift onto pontoon/barge and float down to site.

Q. You mentioned 3 years, how much notice are we going to have for restrictions on navigation?

A. 12 weeks' notice – as per industry standard. Programmed dates can be shared ahead of time.

Q. Continuous concrete pouring – will this be one abutment at a time or both?

A. One at a time. One pour one day, one pour another day. Some pours will be 24 hours. 11 pours in total per side but some will be a lot smaller so shorter in duration

Q. A lot of lorries coming in via Commercial Road? Is concrete going to be mixed on Commercial Road?

A. No, ready mixed.

Q. How many lorries per pour?

A. 75 lorries per day on the big pours (only for 3 of the pours). Lorries using all available routes to site.

Q. Construction materials on top of the lorry movements for concrete?

A. Staggered but not on same day. Fewer movements for construction materials.

Q. Will concrete be poured in the middle of summer? Impact on traffic and increased visitors to the town.

A. Not sure yet – depends on when we start. We will coordinate with concrete supplier to finalise. Ideally will take place in Spring due to temperature.

Q. Has aggregate coming in via Barge been considered?

A. Not viable to mix on site, space and money implications.

Q. Will the new bridge be open? Worries about gridlock

A. Current programme suggests so.

Q. Who has responsibility for initiating a closure of the barrier? Mention of fish gates further up channel which have failed.

A. ESC – with input from other organisations. Similar to temporary defences.

Q. Have you got a projection of length of time the navigation will be stopped?

A. Still working on. Another level of design coming in New Year. Current thinking for concrete pours, keep the bascule bridge shut during pour. When cill beam is installed, there will be a need for dredging, 5 or 6 days forecast at this time for that. Cross channel sheet piling approx. 3 or 4 days. Same for cofferdam. 5 days for testing. These will all be planned in advance to mitigate impact. Need to understand further from stakeholders.

Q. With navigation closures, is there any facility for boats coming back to Yacht Club from abroad, will there be more moorings there for them?

A. This will be built into conversations with RNSYC and ABP.

Q. What about fuelling for boats? Fuelling facility is well known to boaters up and down the coast.

A. Started discussion with RNSYC that fuelling point will be located during construction phase. Not sure on exact location but this will be probably located nearby so this can still be accessed by boaters during this time.

Q. Possibility of the yacht basin being unsuitable for large vessels for refuelling so this will need to be considered?

A. This will be part of ongoing conversations with RNSYC etc.

Session 2 – environment

Q. The access to the RNSYC – as not a highway the surface not suitable for heavy plant and traffic?

A. It has been considered. Negotiations with RNSYC for repairs required for access. Temporary works will be required for cranes coming in and lorry movements. Upgrades will be needed. Also realigning the gate to RNSYC, widened as part of Tidal Walls project. Protection measures will be put in place where required. Discussions will be required with highways authority.

Q. Proposed environmental platform to be built to southeast of harbour entrance. Is that going to be constructed at the same time?

A. All being well construction of that will begin later this year, so no disruption forecast to the barrier construction. The purpose of the platform is habitat creation for Kittiwake nesting. No further detail able to be shared.

Q. Are you going to do precondition surveys on nearby buildings?

A. Yes. These will be carried out as standard. We have done the same for Tidal Walls. Ongoing monitoring such as noise and vibration will be installed. Alerts sent to team.

Q. As well as dredging sides of barrier, will there be further dredging further up the channel?

A. Yes, at Commercial Road there is potentially going to be some dredging. If compound to be relocated or elsewhere there will be dredging as required. There may be other elements required due to refuelling relocation etc.

Q. The BB compound at the top of the harbour end, is there going to be works up there or just storage compound? Need to consider parishioners affected by potential noisy works.

A. There will be works, the cill beam will be constructed in the compound as well as piles welded. Community engagement will be required for the housing estate opposite railway before works.

Q. What about eels? We have looked at eel ladders around Mutford Lock, to allow eels to come through Lake Lothing. If there will be restrictions on navigation and closure of barriers there will be some impact?

A. Team will take this away and consider. Recognition that the barrier will have an impact on fish and eel populations.

Session 3 – operation & maintenance

Q. In terms of operation, would you need a specific or bespoke flood warning

A. Multi agency warnings already in place for other barriers so partners are aware of what is expected and the notification process for warnings. Currently flood warnings in place for temporary defences is sufficient in EA's view so this is likely to stay the same.

Q. flood warnings – currently there is a bespoke warning system in place for south side of bridge, does this need to remain or combine as a dual warning

A. Use as dual warning. Currently 5-day warning from EA so can fit with 3-day mobilisation turnaround. Flood alert can be issued to everyone who is in the area covered by the barrier.

Q. Who is responsible for opening and closing the flood gates around the town?

A. ESC with support of our contractors as the tidal barrier will be. Demountable defences will be deployed first with support from different organisations and teams. Deployment plan for section of tidal walls is updated to ensure everyone knows who is responsible in the event of a flood.

Workshop Notes

Table One: Sharon Bleese (facilitator), Tamzen Pope (technical support), Lizzie Forbes (scribe), Chris Merren (RNSYC), Daniel Turner (Natural England), Jon Southgate (Suffolk Lowland Search and Rescue), Louise Thomas (ESC), Henry Carter (RNLI), Richard Perkins (Suffolk Chamber of Commerce), Nik Dockree (ESC), Richard Bennett (Balfour Beatty)

Table Two: Charles Schelpe (facilitator), Jon Stockwin (technical support), Sharon Richardson (scribe), Andrea Armstrong (National Highways), Chris Trindall (Elizabeth Holdings), John Kitching (Jet Adventures), Kate Moran (ABP), Mark Jackson (Suffolk Police), Peter Langford (Suffolk Resilience Forum), Tom Duit (ABP)

Table Three: Emma Adam (facilitator), Tom Farley (technical support), Lucy Goodman (scribe), David Spray (MMO), Jemma Pawley (EA), Jon Butler (Eastern IFCA), Jonathan Rudd (NALEP), Steve Kingston (Sheder Marine), Steve Walbridge (CEFAS)

Table Four: Phil Aves (facilitator), Chris Finbow (technical support), Charlotte Flight (scribe), Ben Falat (Royal Yachting Association), Gail Kingston (LHMBG), Jon Hopes (Broad Authority), Karol Petryka (Excelsior Trust), Paul Gray (Lowestoft Cruising Club)

Morning workshop – Temporary Impacts During Construction

1. What significant impacts could result due to the vibration/ noise caused by the construction activities – particularly the piling?

Table One	<ul style="list-style-type: none"> • Environment protection team will be inundated with queries and people contacting them about noise and vibration concerns • We will be producing a Section 61 notice as part of the TWAO. We will build this into the construction methodology mitigations. Hammer piling will need to take place, so we will liaise with Environmental Health. • Learning from Gull Wing (GW) project. Going above and beyond in terms of community engagement – replicate where possible. Visit public personally. This has been very effective on GW project. This will need to be contractor-led. • Precondition surveys. Properties properly inspected. Potential for noise to be bigger issue than vibration. Impact on tourism during summer months. Sink holes in Yacht Club area – risk. Not stable. Anglian Water pipework. • Take learnings and experiences from Tidal Walls. Also expand areas for consultation. • Possible update to HRA required for year-round working if previously only done for winter-working only. • Each 40m pile takes approx. five hours to drive. Up to four weeks continuous piling activity. Programme being developed – unsure of when piling activity will occur (summer or winter) risks will be higher for complaints in summer. Same for concrete pours. All depends on when construction will start. • Piling on both sides at same time to mitigate length of operations. • ABP do regular channel surveys. We have carried out marine ground investigations, further investigations required. Also channel surveys on north side. • National Highways has raised concern about impact of vibration on Bascule Bridge. Potential disruption should bridge fail. Detailed inspection of bridge required before, during and after construction. More robust vibration monitoring in area. Data from Tidal Walls as reference. Also detail from test piling.
Table Two	<ul style="list-style-type: none"> • ABP – Office close by 24/7 port operators, impacts of sustained noise. Operators on radio to vessels need clear listening capacity. Bridge control kit – mitigating equipment. • Highways need to look at large projects in the area to see if there will be cross impacts from the effect of road and pedestrian restricted access in the area. • Elizabeth Holdings PLC (have marked businesses on the map) concerned re impacts on businesses renting their properties

	<p>especially the impacts of those with outside seating areas. Also concerned re effects on possible future expansion plans. Worried re impacts on Weatherspoons, if causes financial pressures landlord will not be paid. Residential properties may also vacate due to noise/vibration.</p> <ul style="list-style-type: none"> • Jet Adventures – will this drive tourist away and therefore we will have less trade. Very concerned about radio conversations they communicate regularly with ABP and others for departure permissions. • Both of the above very worried about prolonged and continued noise/vibration affecting trade. And driving people away. Would appreciate insight into how disruptive this would be. They could potentially lose a years' worth of business, can they recover? Require council to engage with them further on this issue so they can understand and mitigate. Also will compensation be available? • Jet Adventures mentioned that Lydia Eva and Mincarlow Trust (not represented today) have a Floating museum in area and will have same issues as above.
Table Three	<p>Noise</p> <p>EIAs from Third Crossing and LEEF project suggest no significant impact of noise.</p> <ul style="list-style-type: none"> • Disturbance to pets / domestic animals owned by local residents/boaters or people walking dogs near the site. • If not danger posed by noise levels, then increased stress/irritation/disturbance to people/public/boaters/local employees working close to the site or accessing the yacht basin. • MMO delegate highlighted the East Marine Plan Refresh- and to consider this carefully during licence application. There will be conditions in the marine licence associated with noise levels. Means of minimising, mitigating and noise avoidance to be demonstrated. MMO's Tourism Policy also to be considered with regards to noise. • Fish and migratory Fish (mainly eels) disturbance - concern from E.IFCA / CEFAS / MMO • If migratory fish use the Great Yarmouth route to inland water ways – has the access/egress at Great Yarmouth, the timing and cumulative impacts of projects there been considered? • Bird and breeding Bird disturbance - question raised as to whether ongoing bird surveys have been completed. • Other sensitive species (including land and marine mammals and their food sources) – the timing of the construction activities is important to consider to minimise impact. • Question raised as to whether any noise modelling had been completed. <p>Vibration</p> <ul style="list-style-type: none"> • Building shaking – causing annoyance/disturbance to local residents/business owners their customers and employees. Concern raised for any cafes/restaurants in the site vicinity and their potential temporary loss of income. • Disruption to functions/events/normal activities in the Yacht Club and potential for associated loss of revenue. • Disturbance to pets / domestic animals. • Disturbance to birds / sensitive species.

Table Four	<p>Vibration</p> <ul style="list-style-type: none"> • Old buildings don't look to be that secure – CF - monitors used to monitor vibrations continuously. Above ground and in boreholes underground (on Ipswich). Test pile to see the vibration and noise impact. Current monitors could provide a baseline. • Concrete pour – four lorries on rotation, 75 total deliveries. • CF – biggest challenge of the Ipswich pour was weather. Issues if pouring in winter or summer. Spring good. • Excelsior Trust – would like to know if it will affect the season – May and June busy times for the Excelsior. Important to have as much notice as possible. • Excelsior Trust keen to help the project, need notice if effected running from the Heritage Quay – with enough notice can plan to moor somewhere else (e.g. Ipswich) or change programme. But planning now for 2024. • Broads Authority – important to consult with boaters on the broads – Norfolk Yacht Agency and Suffolk Boating Association. Broads Authority also willing to help. <p>Noise</p> <ul style="list-style-type: none"> • Lakeland Drive Housing Estate – north of the railway/ compound – there may be some impact from a noise/ vibration perspective on them. Important to engage the estate and see if BB can put any mitigation measures in place to decrease the effects. • Piling – buildings, businesses, residents. Shift workers might be impacted during the day. Shift workers complained in Ipswich. Important to give shift workers advance notice – engage Birds Eye. • Percussion piling – will be several months of daytime activity • Concerns re. businesses/ residents on the other side of Mutford Lock – might be impacted by road. • When would be best for 6-month season to pile? Outside of season best, loads of tourists in the summer. Dark hours during the day easier on shift workers – easier to sleep.
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2. What significant impacts could result from planned construction activities effecting road and pedestrian traffic in the area?

Table One	<ul style="list-style-type: none"> • Not as many footpath diversion for Barrier as Tidal Walls. May need short-term closures and diversions. • Gull Wing open to traffic should mitigate some concerns of impact on Bascule Bridge. Envisage bigger impact on pedestrians for those travelling into town centre. • Impact on road access in front of Yacht Club. Potential of impact from Sizewell C too. Combined effects from EI assessment will take other projects into account. As the moment projected earliest start for Tidal Barrier is 2024. • Potential labour issues/material availability. • Concerns about lorry movements. This will be incorporated into traffic management plan, developed in construction sequencing. Consultation with bus operators will be required.
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	<ul style="list-style-type: none"> • Standing area for vehicles arriving to site. Deliveries planned according to construction needs. Possible opportunities for waiting area. Parking for construction team – possible ESC car parks?
Table Two	<ul style="list-style-type: none"> • Suffolk Police – concerns are traffic congestion, time bascule bridge elevated, need mapping around project start and finish and key pinch points e.g bridge elevation, lorries/transport. Key issues are if arrest during prolonged bridge elevation period would mean taking offender to a different facility according to if they have access North or South. Need to know traffic impacts for operations e.g raids, pursuits etc. • Accepting Gull wing operational if bascule bridge is not operational congestion builds in Oulton Broad and the police are often called. Impact = call rate increases, extra officers, impact on costs and response times. Also applies to Fire and Ambulance. Need advanced plans to mitigate. • Increase in accidents, more traffic filing through alternative routes, congestion, annoyed drivers associated impacts. • What does transport along Lake Lothing look like? How will longer or more frequent bascule elevation affect traffic/operations. • Site security – night clubs in the area would like details of security of compounds/machinery. Bridge rail climbers need negotiators, access restrictions would be a problem. • Very concerned about the co-ordination of 75 lorries into the town. Backed up lorries, where will these be parked? • Signage critical. • Will we remodel traffic lights, change timing etc. Andrea Armstrong, Highways will look into it. • Elizabeth Holdings suggested old QD site to be used (not sure of landowner). For list of tenants and property owners contact chris.trindall@elizabethholdings.co.uk who will be happy to provide this. • Jet Adventures – their business brings more footfall therefore pedestrian access across Royal Plain needs to be managed due to heavy vehicles traffic flow. People told to park in Royal Green and walk along South Pier to them. Does not feel fair that a single area of the car park allocate to Yacht Club when there are other businesses impacted LifeBoat shop and Pavillion not allocated space. • Risk to pedestrians from increased/disrupted traffic. Disabled access.
Table Three	<ul style="list-style-type: none"> • CEFAS Endeavour Survey vessel moored on inner harbour, has an advanced schedule of movements which will be affected by the construction activities. Crew access, provisioning of goods to the vessel will also be impacted if traffic through town is slow/diverted. • Sufficient planning time is required by CEFAS and other organisations to make appropriate alternative arrangements to get crews and stores to vessels, which may have been temporarily relocated. Notice to Mariners, Highways Agency road closures etc need to be delivered >3months in advance.
Table Four	<ul style="list-style-type: none"> • What route will they use? Four lorries on turnaround for 24 hours – would be useful the know routes.

	<ul style="list-style-type: none"> • Traffic management plan will be in place – will follow route of least resistance. There may be pauses around rush hour. • Victoria Road – bad route. Particularly at school run time. Trunk roads preferable rather than side roads. • Oulton Broad entrance from Beccles – loads to traffic, can take c. 30/40mins. • Consider pea season w/ Birds Eye – arrive on tractors 24/7 – engage local businesses to understand times to avoid. • Could arrange minimal openings of Gull Wing during this time. • If bridge is open for extended period of time a bus service could be offered to pedestrians to North/ South of river (PA – this has happened when bridge has been stuck before). • Excelsior Trust expects bridge to be closed during the day of the pour.
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3. What significant impacts on water quality could result from the planned construction activities?

Table One	<ul style="list-style-type: none"> • Two impact pathways from NE. • Physical disturbance, covered in HRA. Disturbance to harbour base from piling. • Water quality – dredging. We will be going deeper than current maintenance. Samples to be taken and mitigation will follow. • In combination for HRA – look at Sizewell C boat traffic.
Table Two	<ul style="list-style-type: none"> • No major concerns recorded. • Asked regarding air quality issues for children using fountains etc. Dust suppression. Children's corner, will this be impacted by pollution?
Table Three	<ul style="list-style-type: none"> • Water Temperature – monitoring requirement stipulated by MMO and CEFAS. • What are the acceptable limits of temporary change that could affect marine life? • Potential for local bathing water quality implications during construction. • Change in turbidity – implications for sedimentation. • Will the sedimentation from dredging activity or piling within Lake Loathing change drafts around berths (ie. CEFAS Endeavour-potential impact on their own two-year birth dredging schedule).
Table Four	<ul style="list-style-type: none"> • Risk attached to leakage of hydraulic fluid. CF – will specify use of biodegradable oil. • Broads Authority - dredging will affect the water. • Sediment mitigation plan will be in place for construction. • Nature reserve – impact on the Ham – in the EIA. • Re. water quality – presumably Lowestoft won't apply for Blue Flag status during construction – water quality is why the town stopped bidding • With gate operated every two weeks, will this have caused prolonged impact on Blue Flag status?

	<ul style="list-style-type: none"> This could go into the post project monitoring plan – 5-10 year monitoring, might need to alter regime once known.
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4. What significant impacts on the local ecology could result from the planned construction activities?

Table One	<ul style="list-style-type: none"> Demolishing sections of pier structure, contamination risk. Quay side not being excavated. Tests ongoing. Ground investigation works. Demolition of tug arms. Air quality – EIA process. Potential negative impact to be considered.
Table Two	<ul style="list-style-type: none"> No concerns recorded other than Kitiwake displacement.
Table Three	<ul style="list-style-type: none"> Effect on Goby and Eel breeding/ behaviour /habitat value. Increased stress for porpoises, seals, otters and Kittiwakes. From 3rd Crossing and LEEF project EIA results, no further monitoring of local impacts deemed necessary – but delegates questioned whether it is reasonable to apply the same EIA assumptions to this project taking place at the port entrance, and thereby impacting all marine access and egress to Lake Loathing. Consider delays to Boston Barrier project due to issues with Smelt. (European eel, smelt and sprat are UK Biodiversity Action Plan species. Eel Regulations, 2009, require the management of the river basin to allow escapement to sea of 40% biomass of eels that would have emigrated prior to human influence. Eels are listed on the IUCN Red List as ‘Critically Endangered’.)
Table Four	<ul style="list-style-type: none"> Concerned about Eels getting stuck – this would be seasonal Eel passages may be a mitigation – could be a bigger issue when the gates are closed for an event

5. What duration of planned intermittent closures of the Inner Harbour Entrance Channel/Bridge Channel to navigation to facilitate the barrier construction would result in a significant operational impact to your organisation or business?

Table One	<ul style="list-style-type: none"> Closures to channel. For some businesses this cannot be longer than 24 hours. RNLI will have access at all times. RNLI may need to have boat in Lake Lothing to mitigate potential impact during construction on access. Potential locations to be discussed, this needs to be progressed now. Beyond 24 hours, some businesses will need to relocate to fulfil contractual obligations if channel shut. Discussions on this have already started with TP, ESC team and ABP. Linked to LEEF. Mutford Lock is currently only access to Broads. Need to liaise with Broads Authority. Ensure both sides of the Broads are not closed at the same time. New river crossing at South Denes planned to open in Spring. Haven Bridge repairs are planned by NCC Highways.
Table Two	<ul style="list-style-type: none"> Jet Adventures – can manage harbour impacts if know when. More concerned with getting out to sea.

	<ul style="list-style-type: none"> • Will there be any affect on the lifeboat? • If bridge down for period of time how does this affect people? Harbour tours go under the bridge but only 5-10% of business • Fisherman access, how will they be impacted? Check with South Pier Trust (contact Danny Ward).
Table Three	<ul style="list-style-type: none"> • Are fisherman to be consulted/represented on any impacts it will cause them i.e. Temporary loss of manoeuvring, fuelling or storage space - they felt they'd lost space due to construction of the flood wall. • Commercial fishers shouldn't be affected but recreational anglers may be impacted. • Amenity/pleasure vessels will need to be evacuated at certain times during the construction ie for concrete pours. This may effect small local businesses such as sail training/powerboat schools. • MMO reiterated that Marine Plans must be consulted as there are policies pertaining to: <ul style="list-style-type: none"> ○ Temporary closures and change of access ○ Fish policies (ie. development can't access fishers access to fish grounds). ○ Port and Shipping policies. ○ Tourism policies. ○ Social/recreational policies – personal/small vessel access and mitigation hierarchies. • Advance notice of channel closure timing and duration could be given, perhaps as a range of dates initially, and then narrowed down, but should mirror road closure procedure and be issued well in advance (12 weeks minimum), with a monthly update and flow of information.
Table Four	<ul style="list-style-type: none"> • Lowestoft Cruising Club – If 7-day closure – people may get stuck. Access problems with the Broads at the moment (problems with bridge in Great Yarmouth). Moorings on both sides of the barrier needed. People might want to moor in outer harbour. • Concerns over space – less capacity in the RNSYC • Important to have a plan and inform people what it is. • Excelsior Trust – make note in Reeds Almanac – provides all information in this area of the North Sea to mariners – plan roughly when it is going to happen and make note, directing mariners to contact to find out if any restriction. Big lead time. Include info re. 7-day closures. Mariners will get in contact for specific information. • Work with Excelsior/ Cruising Club to get the phrasing right. Include information re. refuelling changes. • Also: Notice to mariners. Broads Authority comms can help. • Excelsior Trust – Diesel berth – Only two places. Need place to go in outer harbour for the Excelsior to refuel. • Places to take on water also needs consideration.

6. What other significant environmental impacts could result from the construction activities?

Table One	<ul style="list-style-type: none"> • Lorry movements. How will community react to increased traffic and construction traffic? Risk of protest. • Social media. Crisis management. • Kittiwake impact and assessment. Things to consider re public image. More risk for marine impacts? Nests on tug arms. Bird nesting seasons. No nets! • Early on, share environmental credentials. Gates arriving by sea. Ecological impact likely to be point of concern. • High profile environmental groups and action across UK. Consider potential of this. Link to Sizewell C. • RSPB. Follow advice from Adam Rolands. Marine data re transit and migration. Eels.
Table Two	
Table Three	<ul style="list-style-type: none"> • Where is the area of dredged material disposal to be? Will it be screened before being dumped? Impacts to fishers from nets caught on bikes/trolleys etc. • Benthic fauna impacts- will surveys/grab samples be done? • Sediment analysis to ascertain heavy metal presence (level 1 or 2) • Marine Archaeological finds <ul style="list-style-type: none"> ○ a watching brief exists around the south pier and yacht club. ○ the area of tug arm installation needs consideration ○ MMO suggest Heritage Policy must be consulted/considered. • Impacts of sedimentation to benthic fauna- being buried • Impacts of sedimentation and sill installation on water depth and vessel draft (TF notes the sill is lower than existing bed level). • Increased potential for marine pollution incidents <ul style="list-style-type: none"> ○ E.g. fuel spills from additional transport movement and deliveries to site by lorry or vessel ○ from coffer dam activities ○ ABP pollution management plan to be consulted and prevention/mitigation measures sought. • Temporary rise in air pollution/lowering of air quality e.g during construction when 75 lorries/day are arriving with concrete premix. • Dust creation and issues for people/public/local employees with respiratory issues - potential for dust forecasting and mitigation – i.e. dust creating activities to be timed with suitable weather conditions. • Impact of finding UXO – surveys completed?
Table Four	

Afternoon workshop – Impacts During Operation and Maintenance

1. What significant impacts on water quality could result from the planned O&M activities?

Table One	
Table Two	
Table Three	<ul style="list-style-type: none"> • Pollution caused by hydraulic leakage during test operation. • E.IFCA – discharge into water of any pollutant e.g. oils/ fuel. • Submerged jets on the barrier to dislodge sediment build up and remove barnacle/macro-algae.

	<ul style="list-style-type: none"> ○ will the dislodged material affect bathing water quality ○ sedimentation changes ie will there be a need for additional dredging of vessel berths in Lake Loathing? Is there an impact on Benthic faunal community? • Is there an OPPORTUNITY for creation of macroalgal habitat via ecological engineering i.e., to encourage molluscs, crustaceans etc to colonise textured concrete. This would then increase the habitat value of the area, provide food chain essentials and encourage mammals (back) to the area after construction.
Table Four	<ul style="list-style-type: none"> • Re. jet flush – will it have knock-on effect on dredging further up Lake Loathing? Something to monitor.

2. What significant impacts on the local ecology could result from the planned O&M activities?

Table One	<ul style="list-style-type: none"> • Routine maintenance likely to take place in daytime or at weekends to ensure team availability – silt cleaning • Construction period likely to be more ecologically sensitive. Natural England have no ecological concerns with regular maintenance – refer to HRA. • Barrier operation plan will incorporate stages of maintenance. • Species are going to be used to a certain level of disturbance in the area already.
Table Two	<ul style="list-style-type: none"> • Jet Adventures, Concern: will silt move in East side of yacht basin to a position that could cause difficulty for small vessels? • Peter Langford - Can the barrier be closed unplanned for an oil spill inside the port?
Table Three	<ul style="list-style-type: none"> • Impacts e.g., ground compaction or damage to habitats, from access and use of large tonnage mobile or marine based cranes and/or heavy plant on site. • Impacts of the cathodic protection for antifouling of the in-water asset elements –electrical charges disturb sensitive species e.g eels and elasmobranchs. • Consider the likelihood of having to disturb Kittiwakes nesting on the mitre gates and other sub-aerial asset elements (despite the spiked design and two weekly maintenance ops). • Biodiversity net gain – how is this to be incorporated in to the project? (i.e. by ecological engineering). More consideration of opportunities to improve local ecology should be designed in to compensate for the cumulative impacts of successive O&M impacts on wildlife. • Delegates desired more information about the Kittiwake breeding platform installation (currently under NDA) as compensation for disturbance by LEEF project – are these tried and tested?
Table Four	<ul style="list-style-type: none"> • Concern raised re. Carlton Ham. • Dredging and pluvial and fluvial work should have solved the Carlton issues.

	<ul style="list-style-type: none"> • Could be part of the monitoring to keep an eye on. Jet is not routinely done, not normally sending sediment into Lake Lothing. Will happen approx. once a year.
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3. What duration of planned intermittent closures of the Inner Harbour Entrance Channel/Bridge Channel to navigation to facilitate the barrier operation and maintenance would result in a significant operational impact to your organisation or business?

Table One	
Table Two	<ul style="list-style-type: none"> • Q: What impact will shopping trolleys and other dumped material have in terms of barrier getting stuck or them being retrieved? • If we close this channel it is important that GY is open or we effectively cut off the broads. • Need to make sure onsite people available for planned maintenance/exercises • Jet Adventures -Tide height that would invoke a closure? Advised 2.6m above ordnance = minus 1.5 to get chart data figure (needs to be confirmed with relevant stakeholders please). • There would be a number of Boat based businesses within harbour impacted with closures. Feel it would be difficult to get a straight answer from the businesses as to an agreed least impact times due to the different nature of business and times of departure. • Possible problems with docking when maintenance in place/closures. Manageable if known.
Table Three	<ul style="list-style-type: none"> • With third crossing hopefully finished before start of construction the impacts on channel/bridge closure should be minimised. More important than the duration of closure is the prior notice of closure to enable businesses and services to plan for inconvenience well in advance. • The annual schedule of routine maintenance and barrier operations should be published well in advance – with caveat about having to change O&M plans due to weather constraints. This schedule of annual and biweekly ops should be made publicly available. • Night closures of the channels/roads may be preferable for businesses and local commercial operations but would not be suitable for the project. • In the case of any prolonged (multiday) closures of the inner harbour, active working vessels will need a temporary berth in the outer harbour- this needs to be planned and organised well in advance. Space for any vessels needing an emergency berth should still be available. • Yacht club/public/pedestrian access to the barrier needs to be controlled during O&M. Usual access will be closed during ops- how will this be managed.
Table Four	<ul style="list-style-type: none"> • Broads Authority – only long one once a year for exercise – fine as long as well communicated and planned. • In Great Yarmouth there is one point of contact – four pinch points in Lowestoft (barrier, bascule bridge, Gull Wing and railway bridge) –

	would be useful for operating procedure to have one point of call for passage through.
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4. What prior notice period a channel closure for routine operational and maintenance activities would best mitigate any significant operational impact to your organisation or business?

Table One	<ul style="list-style-type: none"> • Regular inspections from divers (1 or 2 days, once per year). Longer period of channel closure during this time. Could be timed/planned to coincide with other planned maintenance to minimise disruption. • Major maintenance – 25, 50 year planned maintenance activities will have major impact • Closure impacts. 24 hours is business critical – channel will not be closed for maintenance for longer than this so effects will be minimised. Planned closures will be organised with liaison with businesses and stakeholders and likely use local / social media. • Routine closure – 1 weeks' notice. In anger – 5 days out flood warning. Liaise with landowners 36 hours, 24 hours until flood event. • Annual schedule of routine closures visible for landowners and stakeholders. Possibly annual diving activity planned in. • Annual training exercise. September – can be planned a year in advance.
Table Two	<ul style="list-style-type: none"> • If routine maintenance cancelled no problem if it changes needs to be communicated. • Bascule bridge maintenance contacts could be utilised, liaise with Highways.
Table Three	<ul style="list-style-type: none"> • 12 weeks or 3 months would be a minimum time for prior notice of closures, including any for any emergency O&M on the barrier (TF suggests the lead in time for getting heavy plant and materials on site is 3months anyway). • E.IFCA – prior notice 1 month before closure via LNTM and local Fisherman Association
Table Four	<ul style="list-style-type: none"> • Broads Authority – will need notice to mariners every time • In Ipswich this is planned out every six months • Does the timing move around? • The high tides that work best are picked. If regularity works better (e.g. every other Thursday) that is something to consider whether it be day or night. • Website should show planned closures, social media etc. Broads Authority do this. • Bridge closures – all pre-planned – barrier closure can plan around them. Information board for road bridge & barrier? There should be more information – historically not been very good at sharing what we know.

5. What other significant environmental impacts could result from the O&M activities?

Table One	<ul style="list-style-type: none"> • Gate lift – future maintenance • EIA looking into potential impact on the Broads. • Evacuation procedure. Business continuity for port businesses. • Gates to be last to close. • RAMS, business continuity plans for port area. Offer to test and review these plans and assessments.
Table Two	<ul style="list-style-type: none"> • Hydraulic oil in marine environment impacts queried. Response = Have to use vegetable based oil now. • Noise? Siren (and flashing lights) will sound when closing starting 5 mins prior, this will be at any hour. Mentioned but nobody concerned. Could be lit with colours when closed. • Chris said can we put a Christmas tree on it!
Table Three	<ul style="list-style-type: none"> • Passage of fish into inner harbour – temporary disturbance to wildlife behaviour /routes/ food availability. • E.I.FCA – impact on fish and marine mammals. • Public interest in watching the barrier in action could result in people stopping on the Bascule bridge to watch the O&M procedure- H&S implications. <ul style="list-style-type: none"> - suggestion of a specially designated public viewing point at Heritage Quay, for people to observe the barrier in action. • OPPORTUNITY for public engagement with the engineering project – suggestion for interpretation/information boards to be put up around the site- at locations where public <i>can</i> access during O&M procedures. Information signs to facilitate learning about the engineering of the barrier, it's operation and maintenance, funding, and about the flood risk in Lowestoft etc.
Table Four	<ul style="list-style-type: none"> • Walkways – danger to the public? • Site security will be looked at – how to secure off areas but keep them open for operatives. Barrier will not be left unmanned when closed.

6. Impacts during an event on current policies plans and procedures

Table One	
Table Two	<ul style="list-style-type: none"> • If there is a problem. Everything will have been planned say 3 days out then there is a sudden failure to close and change of plan. • Assuming compromised gates mean revert to full traditional flood level procedures e.g ESC run control room communicating to multi agencies? • From a police perspective they door knock vulnerable flood zone areas. Assumption would be not needed if we have a barrier so resources would have been placed elsewhere that's a problem if emergency. • Jet Adventures. Re gaps for demountables. Competing businesses, every business has a reason to be closed last. Problems with vehicle and pedestrian access.
Table Three	
Table Four	

ENVIRONMENTAL IMPACT ASSESSMENT



Introduction

The Lowestoft tidal barrier scheme aims to reduce the risk of flooding to Lowestoft. An environmental impact assessment is required to help protect the environment by ensuring that any significant impacts the scheme may cause are identified and taken into account in decision making. Both construction and operation of the tidal barrier are considered.

We have considered impacts from the tidal barrier in relation to the following:

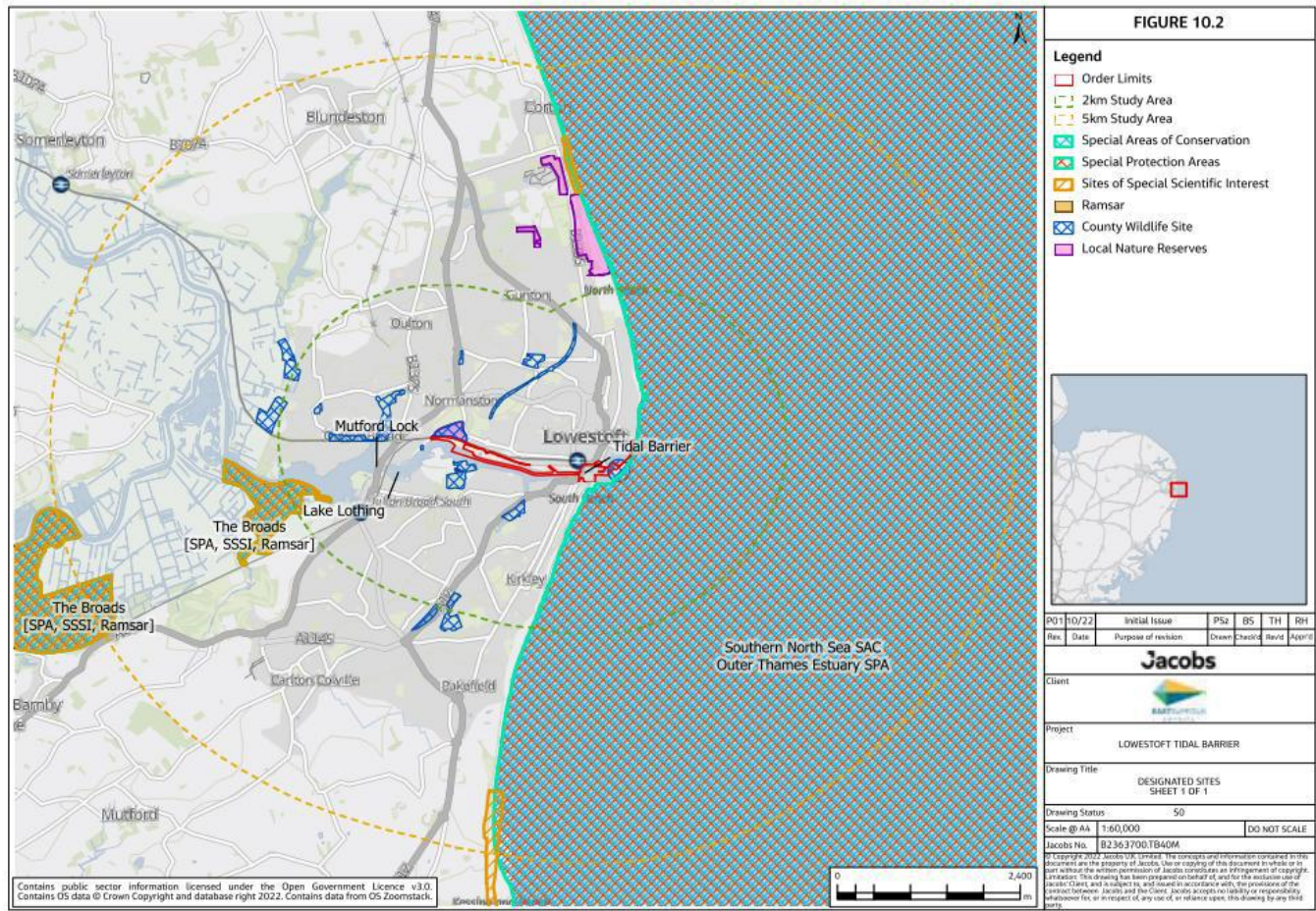
Ecology

Key designated ecological sites near the scheme include The Southern North Sea Special Area of Conservation (SAC), Outer Thames Estuary Special Protection Area (SPA), The Broads Ramsar, SPA, SAC & Site of Special Scientific Interest (SSSI), Sprat's Water & Marshes & Carlton Colville SSSI, Leathes Ham Local Nature Reserve, Harbour Kittiwake Colony County Wildlife Site. These sites support a number of habitats and/ or protected species, including harbour porpoise, fish species and various bird species.



During construction there could be impacts on the local ecology as a result of:

- Disturbance and loss of potential Kittiwake habitat
- Disturbance to fish and other marine species as a result of underwater noise from activities such as piling
- Potential for the introduction or spread of invasive species



During operation the barrier, when closed would also be a barrier to the passage of fish from the Broads out into the North Sea.

Water Environment & Ground conditions

The river Waveney discharges into the North Sea at Lowestoft and to the south of the scheme is South beach, which is used for sea bathing.

During construction there could be impacts on the water environment, resulting from:

- Potential changes in tidal flow due to channel narrowing from cofferdams used for construction
- Disturbance to the seabed resulting in increased suspended sediment
- Potential for pollution incidents from works taking place next to the water, resulting from accidental spillages or surface water run-off

During operation of the barrier there could be potential changes in the tidal flow regime resulting from barrier closure. There could also be changes in sediment deposition and concentrations. There would be a major benefit in terms of the reduction in flood risk.

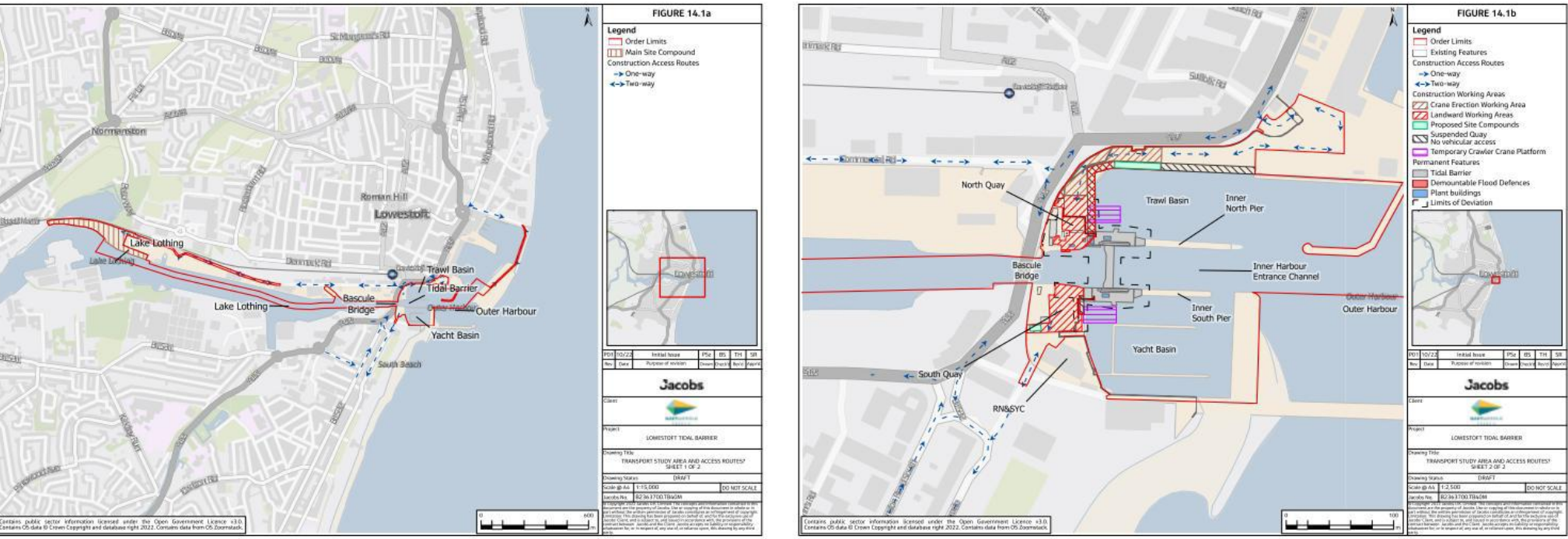
Transport

Local roads suffer from congestion at peak times, particularly around openings of the Bascule Bridge.

Construction traffic associated with the scheme could have potential impacts on local businesses and residents, particularly during peak construction periods for example during concrete pours. Construction activity would also impact on parking due to the displacement

of vehicles which would normally park within ABP and Royal Norfolk and Suffolk Yacht Club, particularly during the summer months when the town experiences high demand for tourist parking.

During operation there would be minimal effects on traffic. There could be some peaks when major maintenance is needed but this would be infrequent and of short duration.



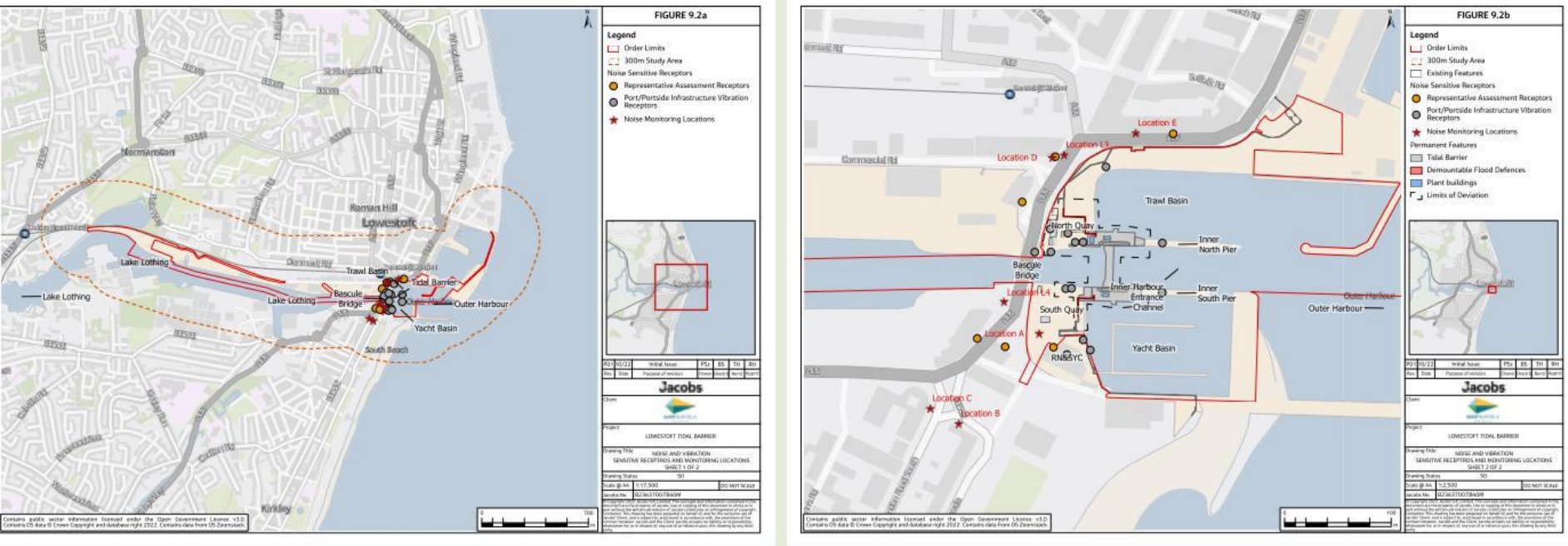
Noise & Vibration

There are residential properties to the north and south of the scheme, the closest being on Waveney Road, Station Square and Pier Terrace. The Royal Norfolk and Suffolk Yacht Club is also considered to be sensitive to noise and vibration and some Port structures could be sensitive to vibration. Background noise in the area comes from traffic on the A47 and also seabirds.

Construction activities are by their very nature noisy. Construction of the barrier is planned to last for approximately 2 years, during which there would be numerous noisy activities, as follows:

- Daytime noise for receptors along Waveney Road, Commercial Road and Station square during piling
- Night-time noise for receptors along Waveney Road, Commercial Road, Station Square, Pier Terrace, The Harbour public house and the Royal Norfolk and Suffolk Yacht Club during concrete pours or if piling activity over-runs
- Vibration during piling for some Port structures within 20m of the piling activity.

During operation the barrier would create minimal noise. Noise effects during operation have not been considered.



Other environmental topics

The barrier would have impacts on a range of other environmental topics, including:

- Impacts on tourism and recreation through disturbance and loss of amenity, including some restrictions to access during construction
- Socio-economic impacts during construction as a result of disruption and in relation to navigational impacts
- Impacts on the character of the area as a result of large machinery, which would be visible for the duration of the works
- Impacts on setting for listed buildings, including the Royal Norfolk and Suffolk Yacht Club, Grade II* Listed building and the potential for impact on previously unknown marine archaeology during excavations and demolition of existing structures
- Beneficial impacts on health and wellbeing as a result of the reduction in flood risk during operation of the barrier

Next Steps

As a project we are currently looking at potential mitigation options, working in conjunction stakeholders and interested parties to reduce the impacts of the scheme as far as is reasonably practicable.



BARRIER OPERATION & MAINTENANCE



Barrier Operation for Tidal Flood Event

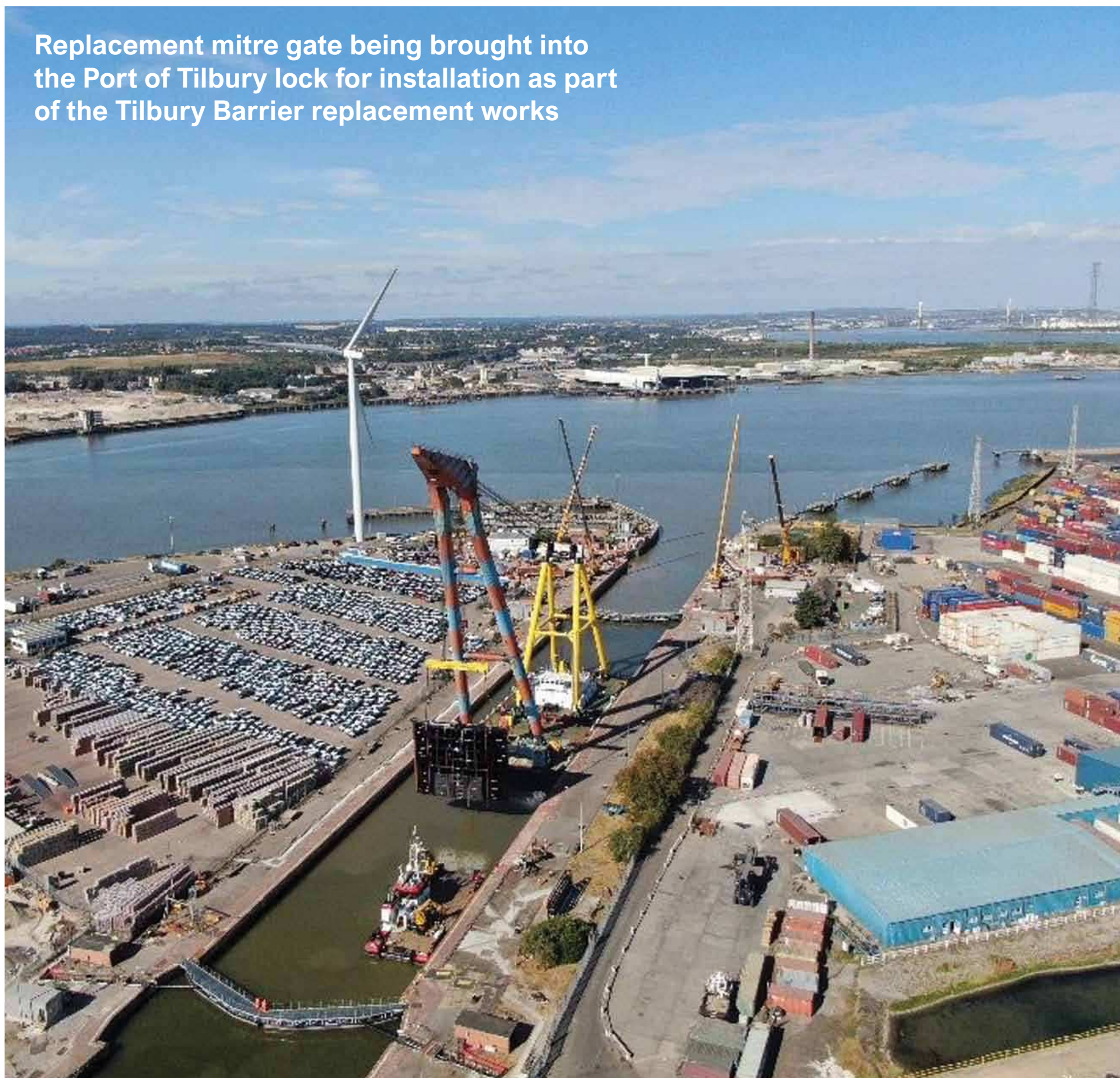
- Closure for flood event on forecast +2.6m AOD (+4.1m CD) peak level
- Closure on preceding low tide/slack water
- Estimated closure frequency for tidal flood events
 - present - once every 2 years
 - 2120 – two to three times a year
- Reopening on falling tide when Lake Lothing and Outer Harbour water levels the same
- Likely closure duration 8 to 12 hours
- Timelines for gate operation to allow for deployment of redundancy measures in case

Barrier Operation for Routine Maintenance

- Barrier operated regularly
 - to exercise the gate and its associated plant and equipment
 - to agitate/manage silt accretion within the operating arc of the gate and its recesses
- Closure and reopening of mitre gates over circa 30 minute period every 2 weeks at high tide
- Every month this closure period is increased to circa 50 minutes to include the closure/reopening of the associated secondary radial gates
- Full test closure once a year in September/October – same procedure as for a flood event
- These will generally be planned operations timed with a slack tide, and when the bascule bridge is down



Replacement mitre gate being brought into the Port of Tilbury lock for installation as part of the Tilbury Barrier replacement works



Barrier Maintenance

Unless an emergency, maintenance works will be planned in advance that will seek to minimise the impacts.

- Maintenance dredging
 - Timed with ABP twice yearly maintenance dredging of channel
 - Will involve channel closures
 - Methodology likely to change to water injection dredging adjacent to barrier structure
- Major maintenance
 - Working area can be similar to that for the barrier construction
 - Will involve channel closures (gate refurbishment, diver inspections, etc)
 - Frequency related to asset life and reliability of components
 - Frequency expected to increase over time as assets age

Closure Deployment Notification

- Notification timeline for barrier closure for a flood event will be similar to the existing protocol for the temporary flood defence deployment
- Navigation notification and control procedures
 - Co-ordinated by Port Control/Harbour Master
 - Comply with port procedures & protocols
 - Notification by Notice to Mariners
 - Notification to Broads Authority at Mutford Lock
 - Seek to notify wider commercial and recreational navigation interests in Lake Lothing, and Oulton Broad who are potentially affected

Next Steps

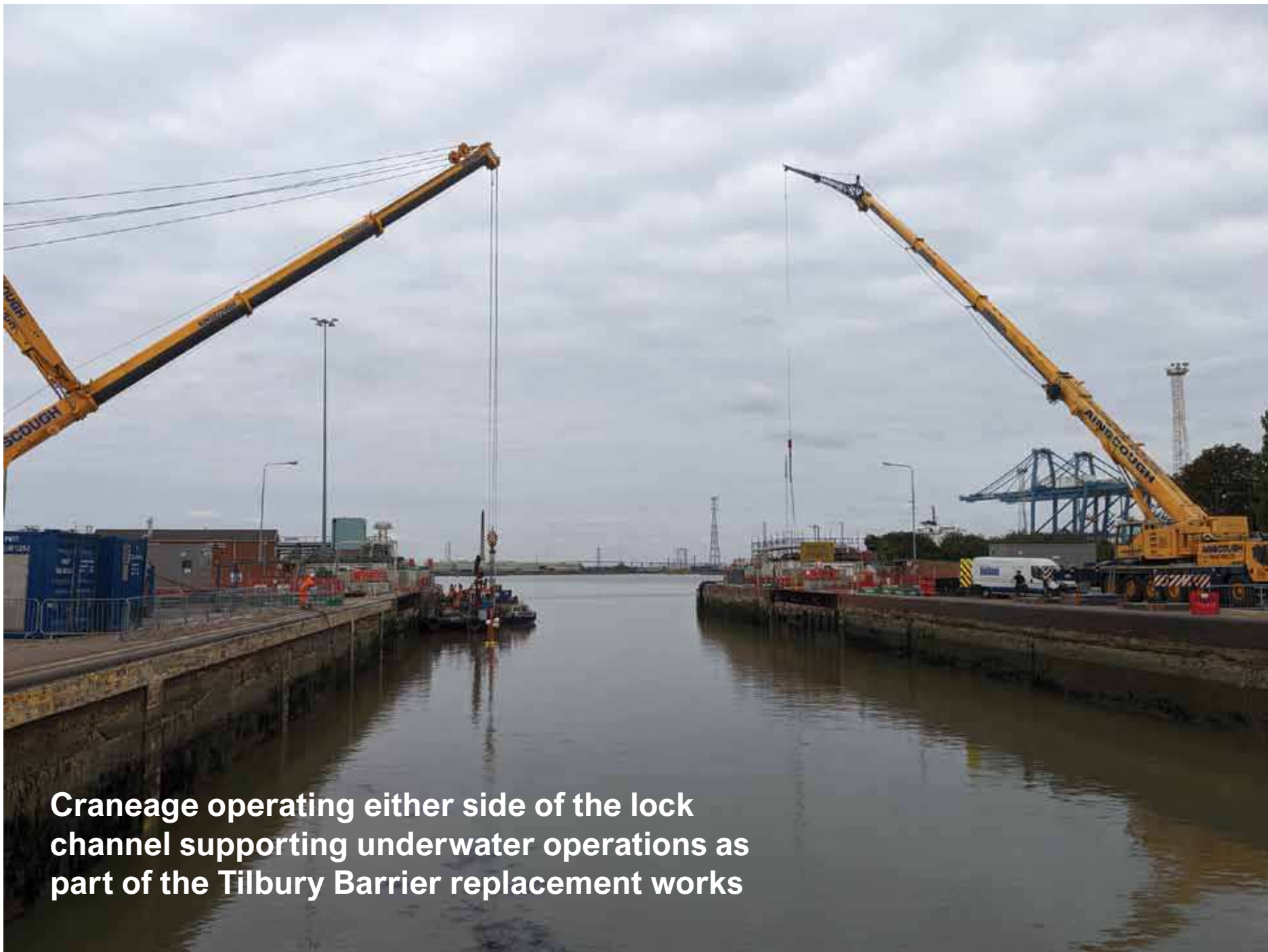
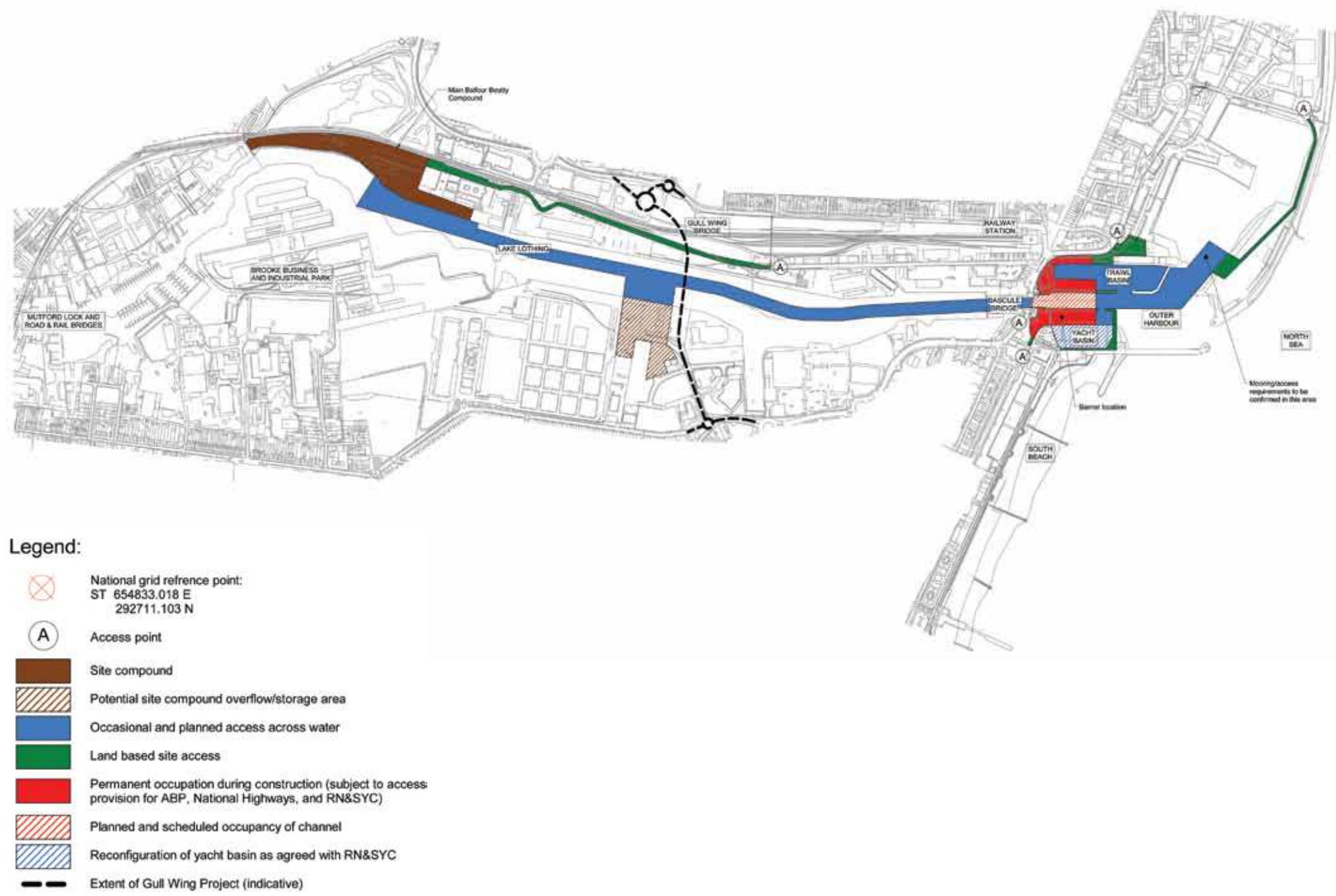
As a project we are further developing our barrier operation and maintenance plans working with stakeholders, blue light responders and interested parties.

NAVIGATION IMPACT ASSESSMENT



A key element of the Lowestoft tidal barrier scheme is the barrier itself and its gate that operates across the entrance channel between Lake Lothing and the Outer Harbour. The construction, operation and maintenance of this barrier will therefore potentially interfere with, and have an impact on the following areas:

- Outer Harbour
- Inner Harbour Entrance (Bridge) Channel
- Trawl Basin
- Yacht Basin
- Inner Harbour/Lake Lothing
- Oulton Broad



Craneage operating either side of the lock channel supporting underwater operations as part of the Tilbury Barrier replacement works

Navigation Impact during Construction

- Temporary time constraints to access through Inner Harbour Entrance Channel
- Delay to normal navigation activities – short and longer duration channel closures
- Safety risks of construction fixed plant (cranes, etc) clashing with navigation
- Safety risks of vessels striking the cofferdam (day and night)
- Safety risks of water based plant (barges, etc) interfering with navigation
- Additional/longer duration raising of Bascule Bridge to facilitate key in-channel works



Maintenance Impacts

- All planned interventions except in an emergency
- Routine maintenance
 - Closure and reopening of mitre gates over circa 30 minutes period every two weeks at high tide
 - As above plus deployment of secondary gates over circa 45 minute period every month at high tide
 - Full test closure once a year in September/October – as per flood event
- Maintenance dredging
 - Timed with ABP twice yearly maintenance dredging of channel
- Major maintenance
 - Will involve channel closures (gate refurbishment, diver inspections, etc)

We have considered impacts from the tidal barrier in relation to the following:

Navigation Interfaces with Construction

- Inner Harbour Entrance Channel
 - Channel width reduced for cofferdam/temporary works
 - Working alongside channel within cofferdams and on completed abutments
 - Working within channel – during normal windows when Bascule Bridge down
 - Working within channel – channel closures
- Outer Harbour - use of quayside to prepare gates for installation
- Trawl Basin & Yacht Basin – reduction in operational space and facilities within the basins
- Inner Harbour/Lake Lothing - Loading and offloading materials from site compound quaysides and transporting to and from barrier works site by barge
- Outer Harbour - use of quayside to prepare gates for installation
- Oulton Broad - access to Outer Harbour & North Sea constrained

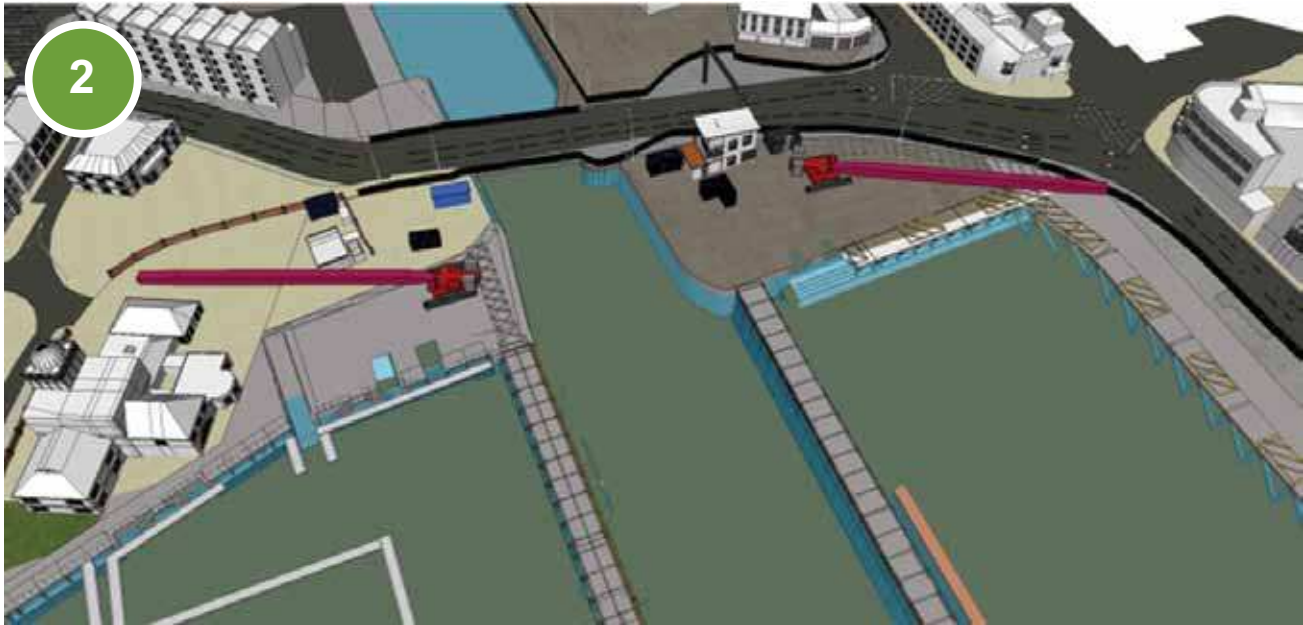


Placement of concrete sill structure for the Nieuwpoort Barrier in Belgium – photo courtesy of Departement MOW Vlaanderen

CONSTRUCTION METHODOLOGY



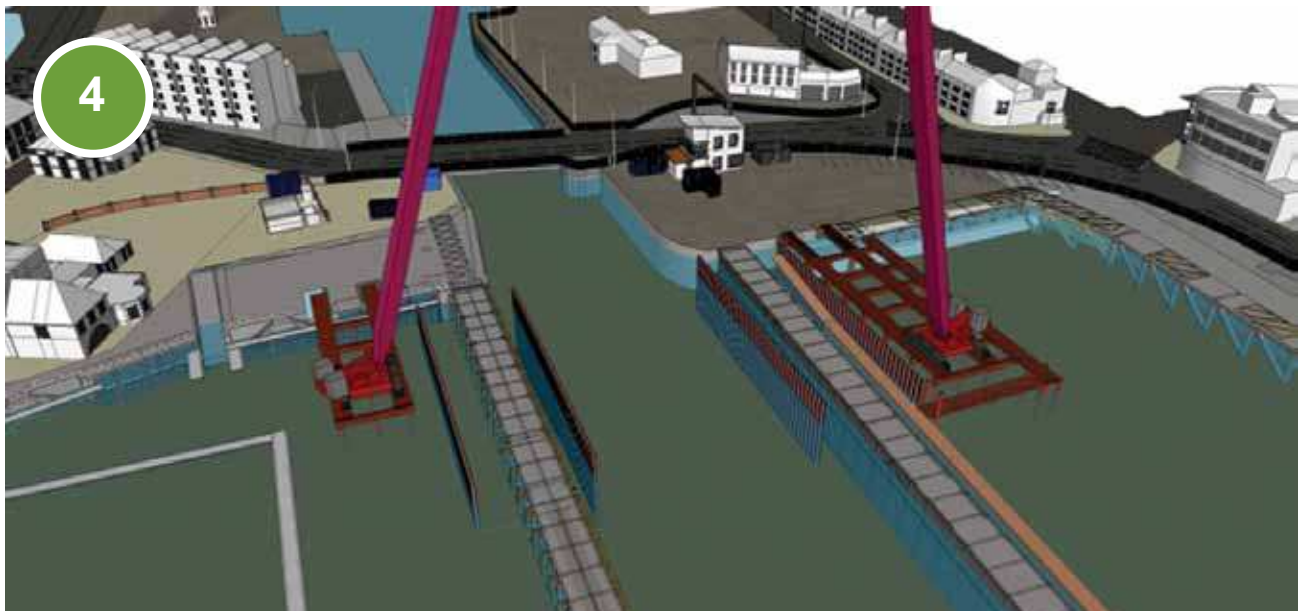
The construction methodology for the 40m mitre gate at Lowestoft Lake Lothing entrance. Works are anticipated to work all year round and will include possessions (not limited to) for the installation of the piles, cill beam, ram pits and gates.



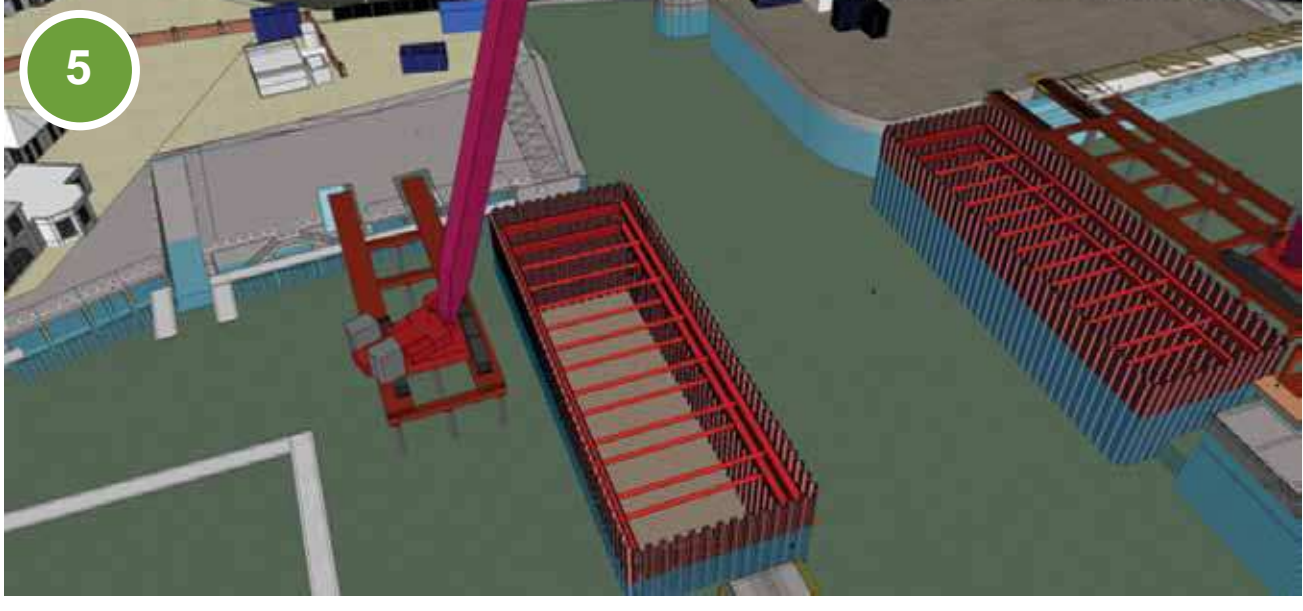
Erect 600t crawler cranes within the Yacht Club and APB port area - these will be used to facilitate the construction.



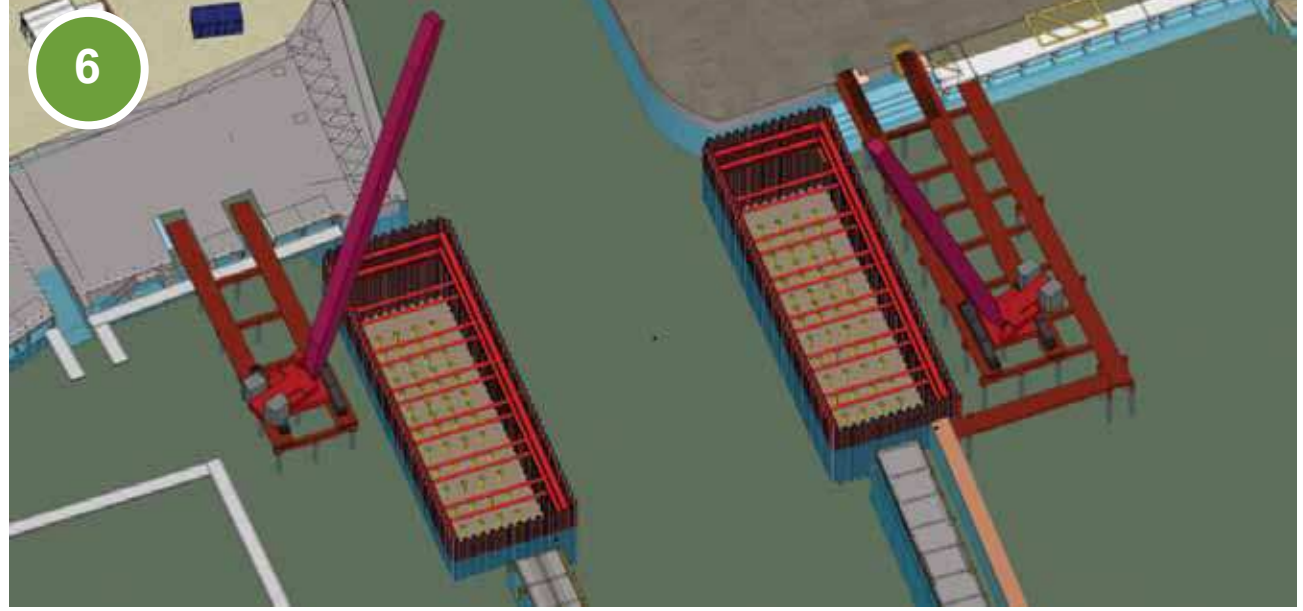
The 600t crawler cranes will work on platforms in the Yacht Club and APB port area.



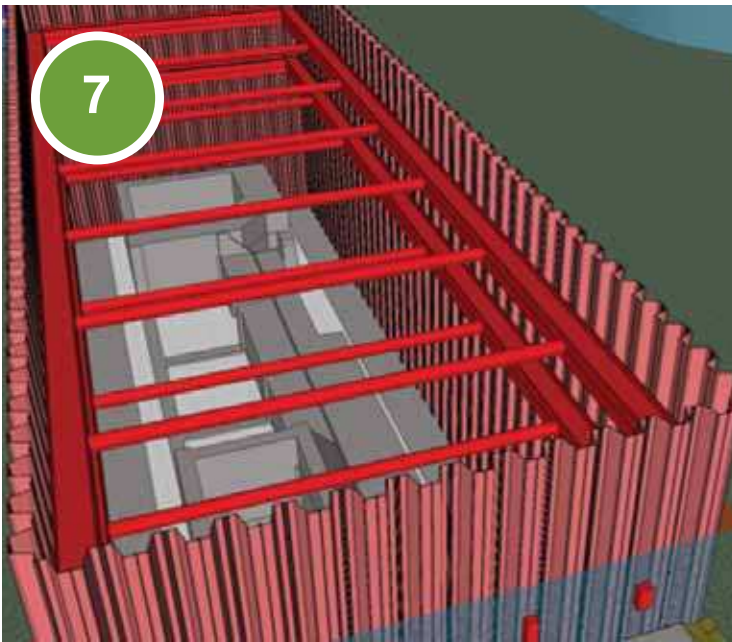
Once the abutment is constructed, the supporting frames and cofferdams will be removed and the sheet piles installed to join the abutment back to the tug arms.



Debris screens will be installed in the channel and Yacht Club and APB basins to prevent demolition material entering the channel.



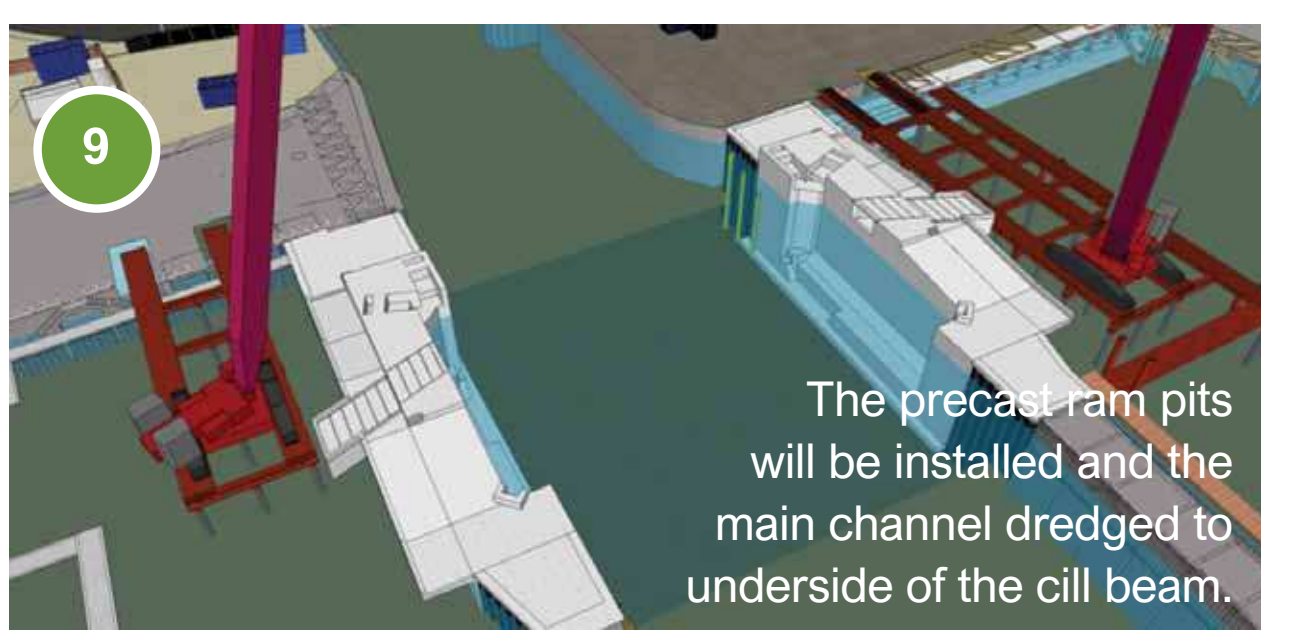
Tubular piles will be installed using the 600t crawler cranes. These piles will be delivered to the compound and brought to the work location by barge.



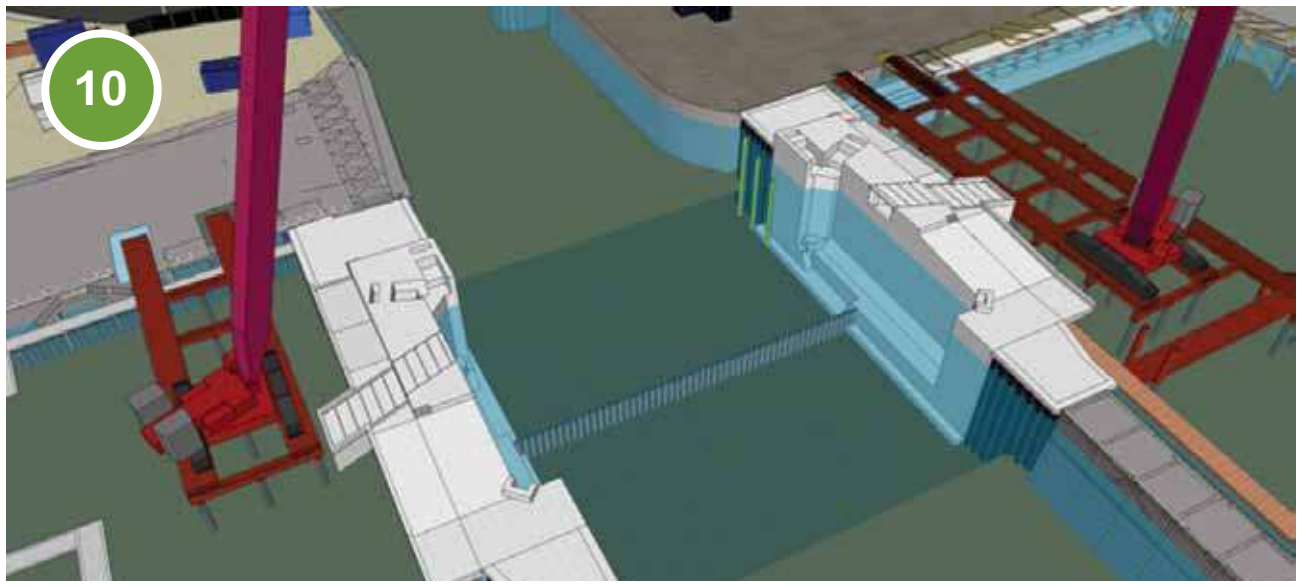
The insitu base and walls to the barrier abutments will be formed using reinforcement and concrete. Some concrete pours are 600 to 800m³ and will require 24 hours to pour of this size, the remainder will be around 300m³.



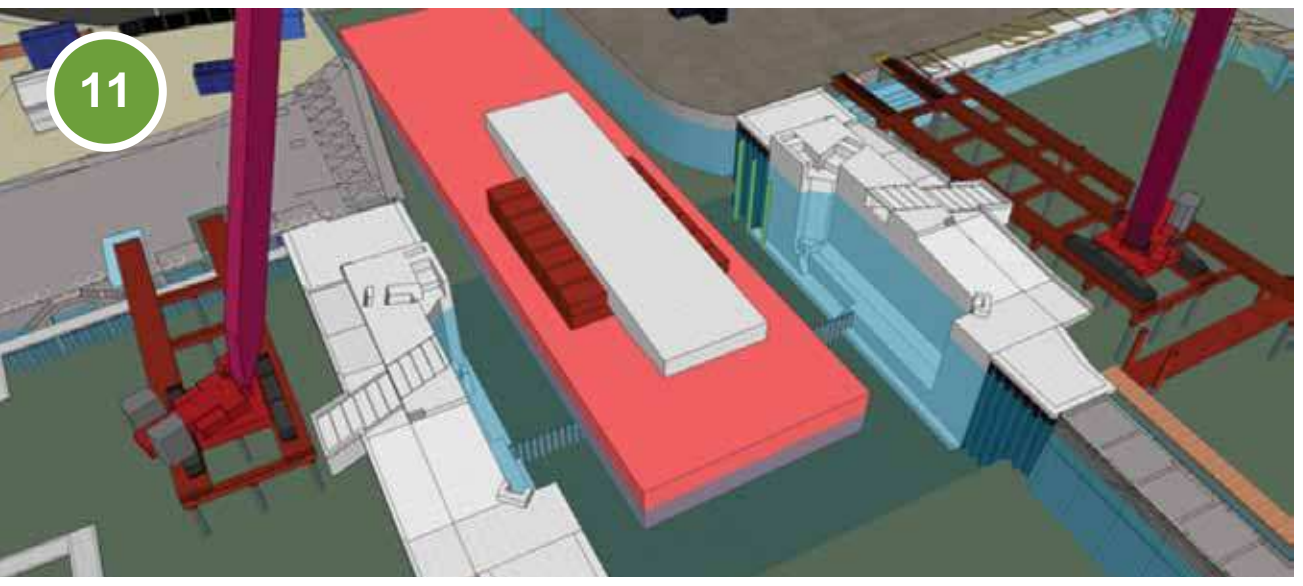
Once the abutment is constructed, the supporting frames and cofferdams will be removed and the sheet piles installed to join the abutment back to the tug arms.



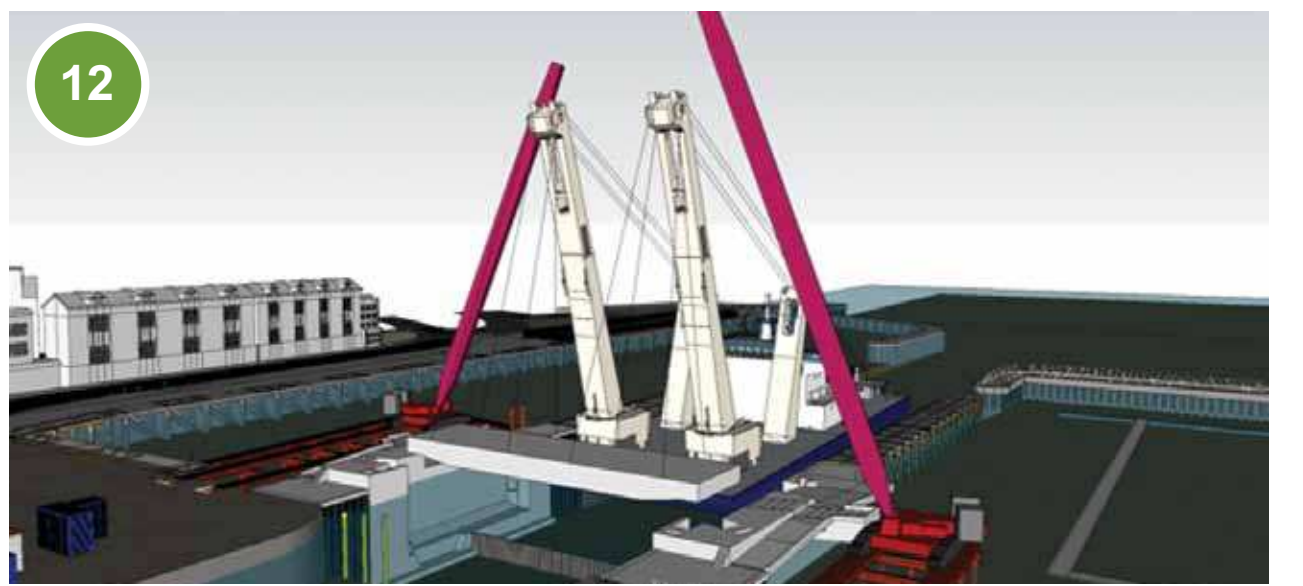
The precast ram pits will be installed and the main channel dredged to underside of the cill beam.



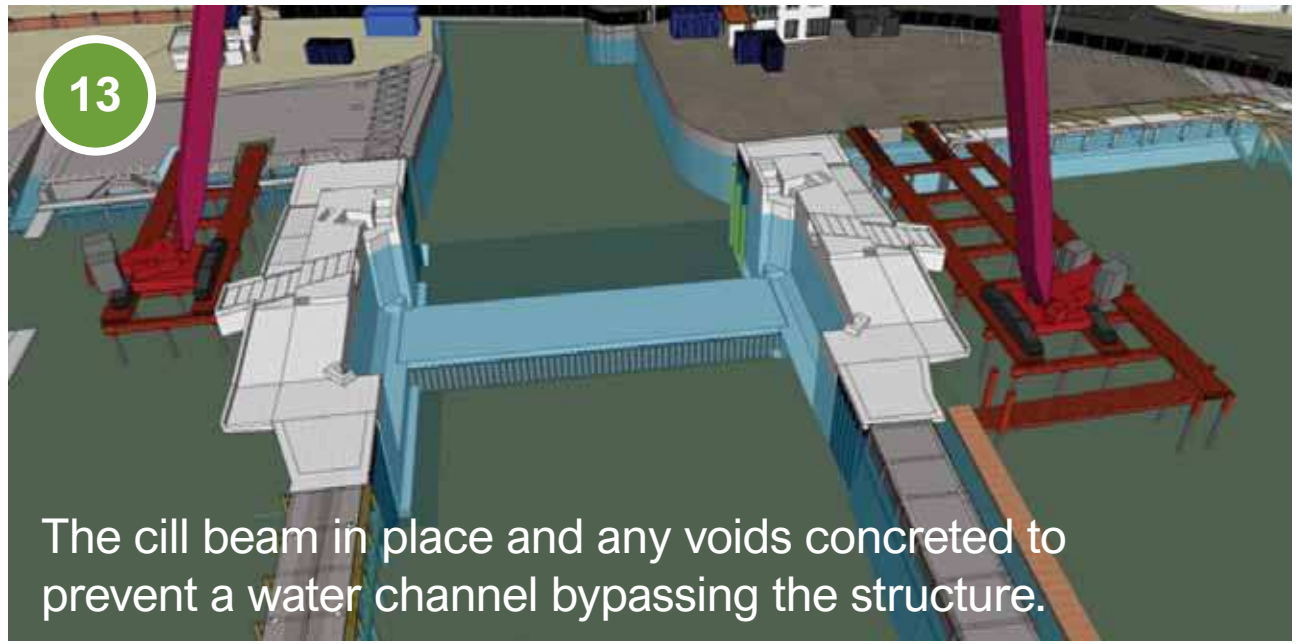
The sheet pile cut off wall will be installed using the 600t cranes. The sheet piles will be delivered to the compound and transported to site by barge.



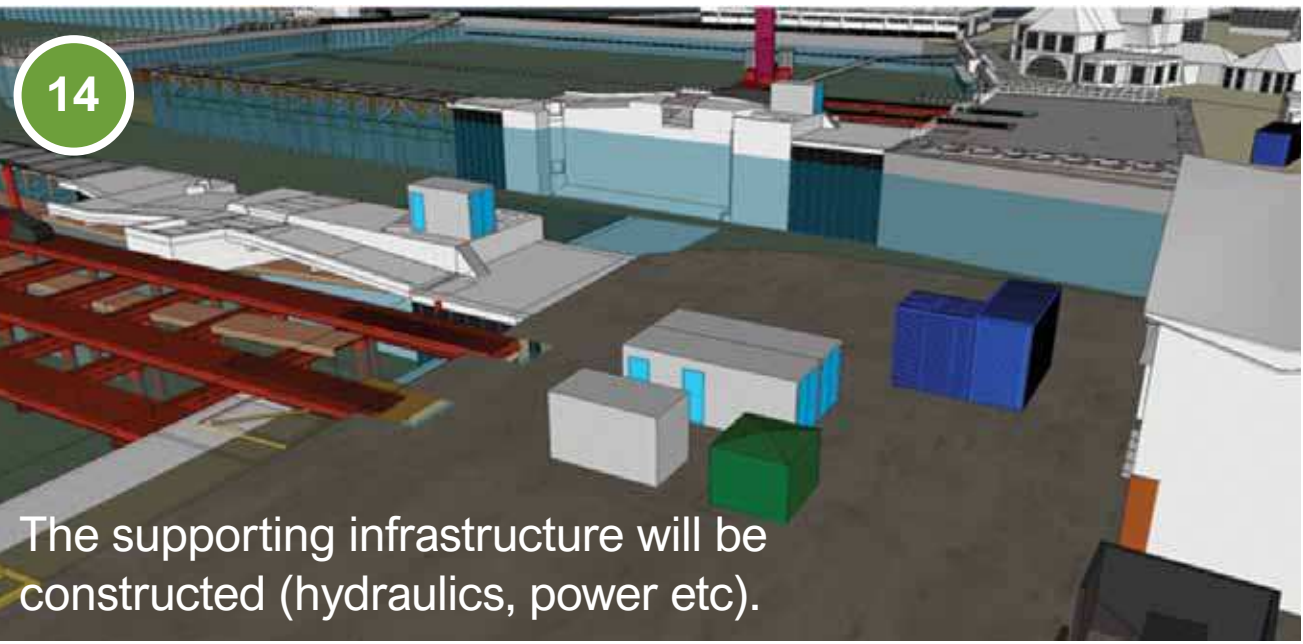
The insitu concrete cill, approx 1000t which has been cast in the compound will be transported to site by barge and delivered in the shear leg crane ready for installation.



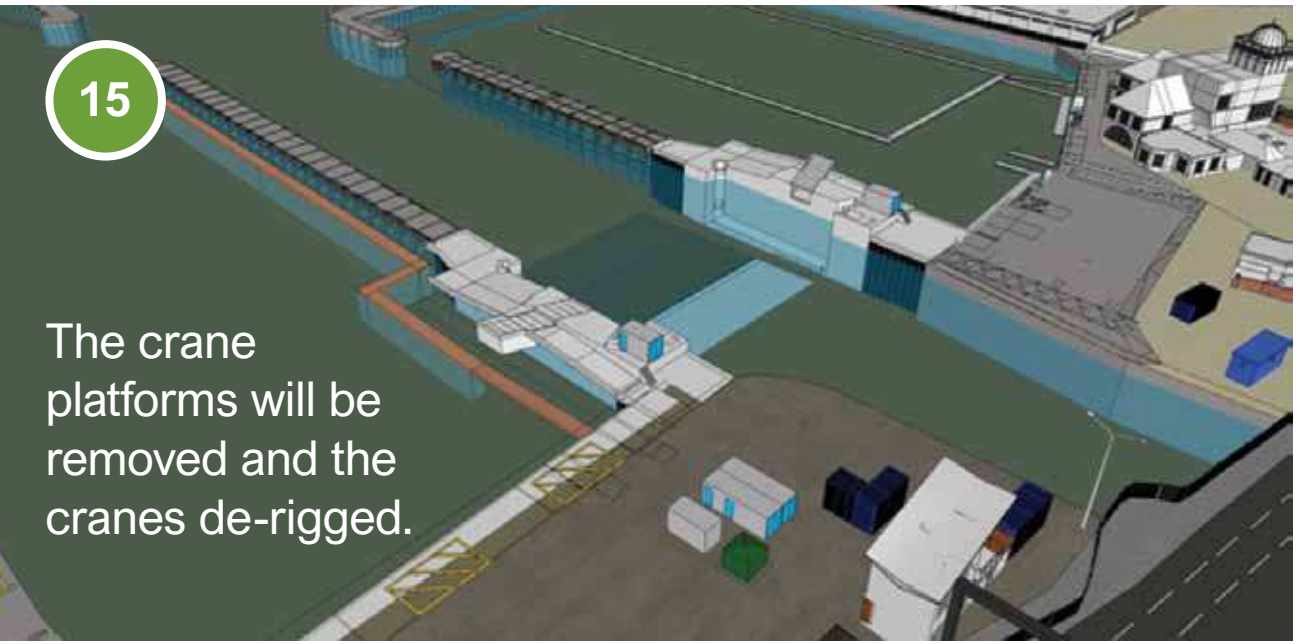
The shear leg crane will lift the cill beam and transport in into place.



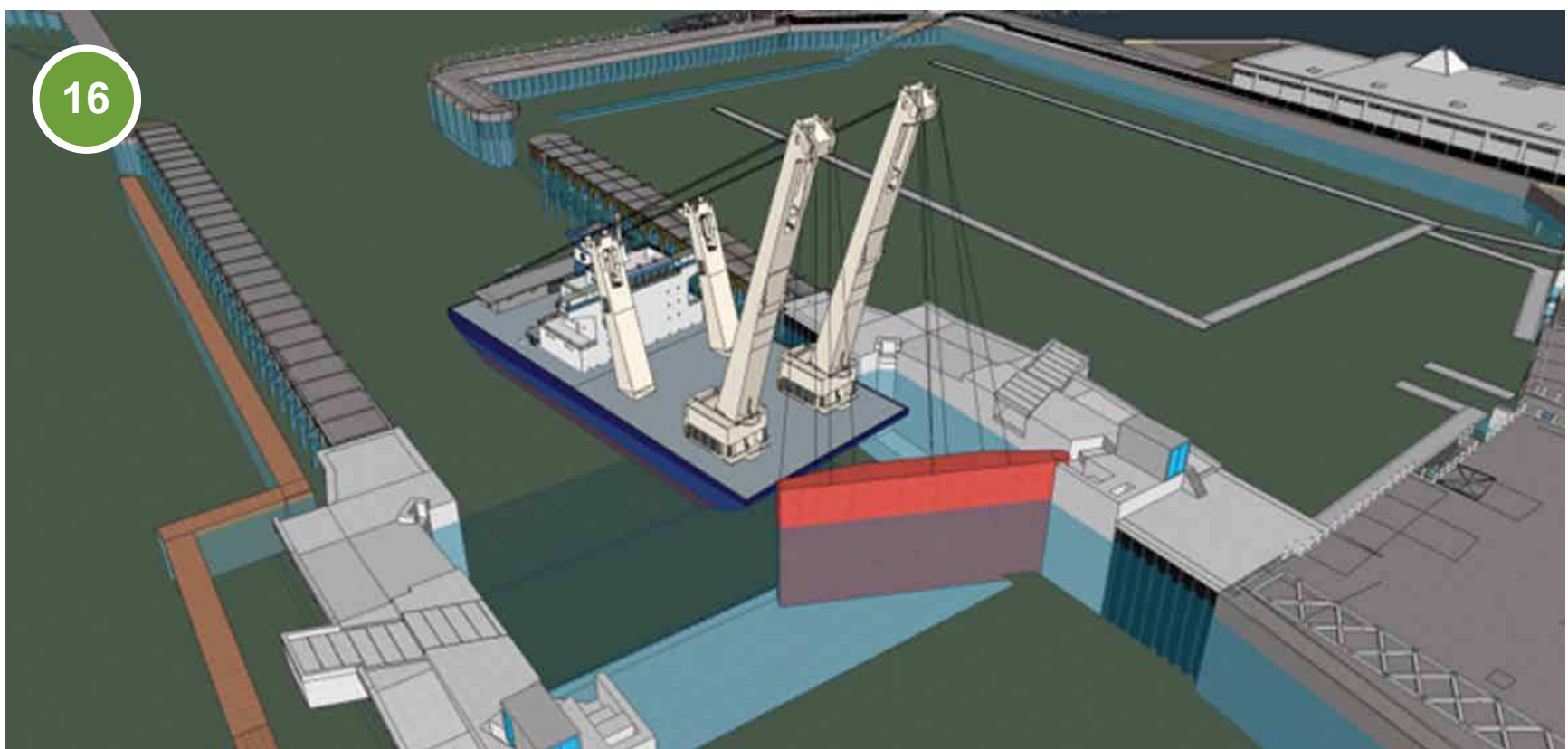
The cill beam in place and any voids concreted to prevent a water channel bypassing the structure.



The supporting infrastructure will be constructed (hydraulics, power etc).



The crane platforms will be removed and the cranes de-rigged.



The gates will be transported from the fabricator (Europe) and the shear leg will lift the gates into place.



VISUALISATION OF THE COMPLETED GATE

TRANSPORT WORKS ACT ORDER



The tidal barrier requires a Transport Works Act Order (TWAO). This is granted by the Secretary of State and is needed when construction can change or affect navigation. A TWAO can take up to two years to be approved but we are working with our partners and stakeholders to make sure that we address concerns as early as possible.

What is a Transport Works Act Order?

The TWAO is a statutory instrument “made” by the relevant Secretary of State, in this case the Secretary for the Environment, Food and Rural Affairs.

The TWAO grants “statutory authority” to construct, operate and maintain works, including powers to acquire land and interests in land.

TWAOs are routinely employed for rail and urban transit schemes but are also used in relation to a number of recent flood defence schemes. A TWAO applies when you are permanently altering navigation.

What powers are included in the TWAO?

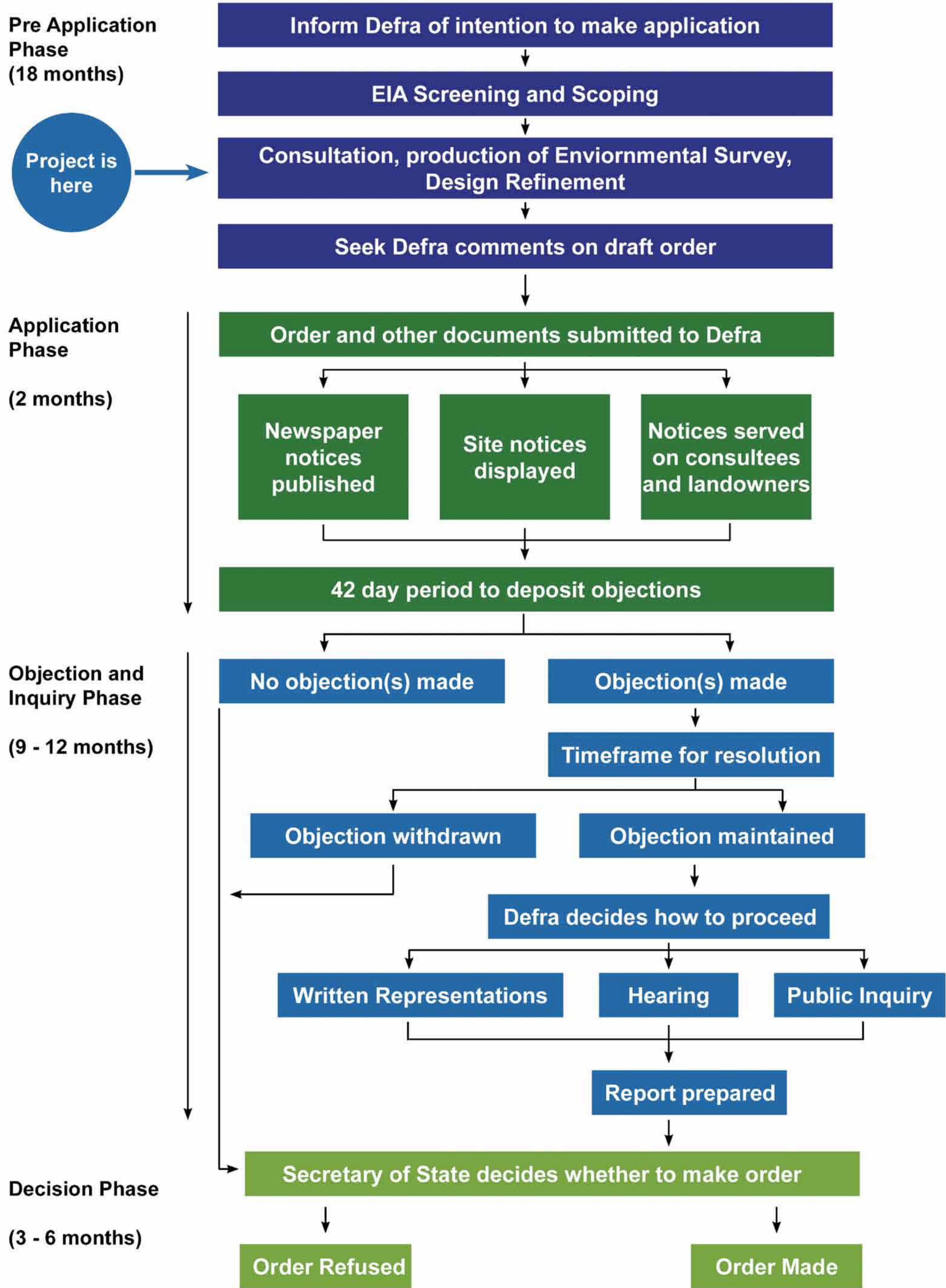
- Construction of works
- Compulsory purchase of land – acquisition of rights permanent or temporary
- Temporary use of land
- Interference with highways
- Interference with navigation – protection of those who use the water
- Powers of operation
- Protective provisions
- Repeals and disapplications

How does a TWAO compare to the planning process?

- Scope of TWAO is far wider (e.g. CPO and operational powers)
- All applications are determined by the Secretary of State
- Financial circumstances of applicant or likelihood of funding are a key consideration
- Usually 5 years to implement (rather than 3 years)
- Applicant proposes ‘conditions’ to be imposed
- Scope of consent is usually more flexible



What is the TWAO process?





LOWESTOFT

FLOOD RISK MANAGEMENT PROJECT

Tidal Barrier Public Consultation

Monday 21 November - Thursday 12 January 2023

Information is available
to view at:

- Lowestoft Library
- Riverside
- Online virtual visitor centre
by following the QR code



Find out about:

- Construction
- Environmental impacts
- Navigational impacts
- Barrier operation and maintenance

Stay in touch

www.lowestoftfrmp.org.uk



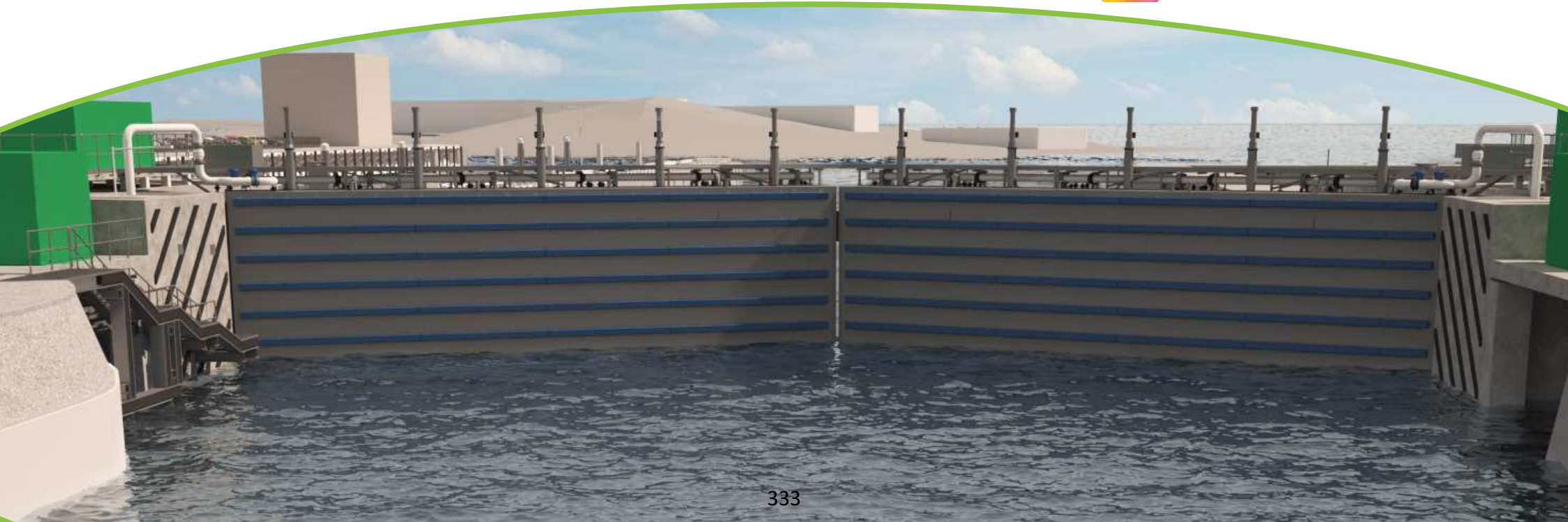
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@Lowestoft_FRMP





**Appendix 5. Consultation with bodies named in Schedule 5
(being those to be served with application documents pursuant to rule 13(3) and Schedule 5 to the
Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006)**

APPENDIX 5

CONSULTATION WITH SCHEDULE 5 PARTIES

(being those to be served with application documents pursuant to rule 13(3) and Schedule 5 to the Transport and Works
(Applications and Objections Procedure) (England and Wales) Rules 2006)

(1) <i>Authority sought for</i>	(2) <i>Documents to be deposited with</i>	(3) <i>Proposed recipient(s)</i>	(4) <i>Prior general consultation</i>	(5) <i>Draft Application consultation</i>
1. Works affecting the foreshore below mean high water spring tides, or tidal waters, or the bed of, or the subsoil beneath, tidal waters.	1. The Crown Estate Commissioners; the Trinity House; the Environment Agency; the Secretary of State for Environment, Food and Rural Affairs, the Secretary of State for Transport (marked "for the attention of the Maritime and Coastguard Agency");	The Crown Estate Commissioners		
		The Trinity House		
		Environment Agency	EIA and stakeholder engagement: see main report. Workshop attended in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022. Member of project Strategic Steering Group.	
		Secretary of State for Environment Food and Rural Affairs	Prior engagement as sponsoring Department	

		Secretary of State for Transport (F.A.O Marine and Coastguard Agency)	Prior engagement of TWA Orders Unit.	
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(1) Authority sought for	(2) Documents to be deposited with	(3) Proposed recipient(s)	(4) Prior general consultation	(5) Draft Application consultation
2. Works affecting the banks or the bed of, or the subsoil beneath, a river.	2. The Environment Agency and any relevant operator.	The Environment Agency	See category 1	
		A.B. Ports (referred to within the main body of this report as ABP)	EIA consultation and stakeholder engagement: see main report. Meetings since March 2015. Member of project Strategic Steering Group. Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	
3. Works affecting the banks or the bed of, or the subsoil beneath, an inland waterway comprised in the undertaking of the British Waterways Board or any of the reservoirs, feeders, sluices, locks, lifts, drains and other works comprised in or serving the undertaking.	3. The British Waterways Board, the Inland Waterways Amenity Advisory Council, the Inland Waterways Association, the National Association of Boat Owners and the Environment Agency.	Not applicable.	-	-
4. Works affecting the banks or the bed of, or the subsoil beneath, a canal or inland navigation not comprised in the	4. Any relevant operator, the Environment Agency, the Inland Waterways Association and the National Association of Boat Owners.	A.B Ports	See category 2	
		The Environment Agency	See category 1	
		The Inland Waterways Association	EIA and stakeholder engagement: see main report. Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	

(1) Authority sought for	(2) Documents to be deposited with	(3) Proposed recipient(s)	(4) Prior general consultation	(5) Draft Application consultation
undertaking of the British Waterways Board or any of the reservoirs, feeders, sluices, locks, lifts, drains and other works comprised in or serving such canal or inland navigation.				
		The National Association of Boat Owners	-	
5. Works causing or likely to cause an obstruction to the passage of fish in a river.	5. The Environment Agency and the Secretary of State for Environment, Food and Rural Affairs.	The Environment Agency	See category 1	
		Secretary of State for Environment, Food and Rural Affairs	See category 1	
6. Works involving tunnelling or excavation deeper than 3 metres below the surface of the land, other than for piling or making soil tests.	6. The Environment Agency.	The Environment Agency	See category 1	
7. Works affecting an area under the control of a harbour authority as defined in section 57(1) of the Harbours Act 1964.	7. The relevant harbour authority and the relevant navigation authority (if different).	A.B. Ports	See category 2	
		The Environment Agency	See category 1	

(1) <i>Authority sought for</i>	(2) <i>Documents to be deposited with</i>	(3) <i>Proposed recipient(s)</i>	(4) <i>Prior general consultation</i>	(5) <i>Draft Application consultation</i>
8. Works affecting a site protected under the Protection of Wrecks Act 1973.	8. Secretary of State for Culture, Media and Sport	Not applicable.	-	-
9. Works affecting, or involving the stopping-up or diversion of, a street, or affecting a proposed highway.	9. The relevant highway authority or, where the street is not a highway maintainable at the public expense, the street managers.	Suffolk County Council	EIA consultation and stakeholder engagement: see main report Invite sent to attend workshop in October 2022.	
		National Highways	EIA consultation and stakeholder engagement: see main report Invite sent to attend workshop in October 2022.	
10. The stopping-up or diversion of a footpath, a bridleway, a byway or a cycle track.	10. Every parish or community council in whose area the relevant way or track is, or is proposed to be, situated, the Auto-Cycle Union, the British Horse Society, the Byways and Bridleways Trust, the Open Spaces Society, the Ramblers' Association, the British Driving Society and the Cyclists' Touring Club;	No parishes or community councils in the area concerned	-	-
		Auto-Cycle Union	Stakeholder engagement: Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	
		British Horse Society	Stakeholder engagement: Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	
		Byways and Bridleways Trust	Stakeholder engagement: Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	

		Open Spaces Society	Stakeholder engagement: Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	
		Ramblers Association	Stakeholder engagement: Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	
		British Driving Society	Stakeholder engagement: Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	
		Cyclists Touring Club	Stakeholder engagement: Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	

(1) <i>Authority sought for</i>	(2) <i>Documents to be deposited with</i>	(3) <i>Proposed recipient(s)</i>	(4) <i>Prior general consultation</i>	(5) <i>Draft Application consultation</i>
11. The construction of a transport system involving the placing of equipment in or over a street.	11. The relevant street authority and, where the works are to be carried out in Greater London, Transport for London.	Not applicable.	-	-
12. Works affecting land in, on or over which is installed the apparatus, equipment or street furniture of a statutory undertaker.	12. The relevant statutory undertaker.	British Telecommunications plc	Stakeholder engagement: Meetings held since March 2019. Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	
		National Grid plc	Stakeholder engagement: Meetings held since March 2019. Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	
		Anglian Water Services Ltd	Stakeholder engagement: Meetings held since March 2019. Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	

(1) <i>Authority sought for</i>	(2) <i>Documents to be deposited with</i>	(3) <i>Proposed recipient(s)</i>	(4) <i>Prior general consultation</i>	(5) <i>Draft Application consultation</i>
		EDF Energy Networks Ltd	EIA consultation and stakeholder engagement: see main report. Meetings held since August 2008 regarding the proposed works and 132kVA cable diversion.	
13. Works in an area of coal working notified to the local planning authority by the British Coal Corporation or the Coal Authority.	13. The Coal Authority.	Not applicable.	-	-
14. Works affecting: (i) a building listed under Part 1 of the Planning (Listed Buildings and Conservation Areas) Act 1990 (ii) an ancient monument scheduled under the Ancient Monuments and Archaeological Areas	14. (i), (ii) and (iii). For works in or adjacent to England, the Historic Buildings and Monuments Commission for England.	Not applicable.	-	-

(1) <i>Authority sought for</i>	(2) <i>Documents to be deposited with</i>	(3) <i>Proposed recipient(s)</i>	(4) <i>Prior general consultation</i>	(5) <i>Draft Application consultation</i>
Act 1979; or (iii) any archaeological site.				
15. Works affecting: (i) a conservation area designated under Part 2 of the Planning (Listed Buildings and Conservation Areas) Act 1990; or (ii) an area of archaeological importance designated under section 33 of the Ancient Monuments and Archaeological Areas Act 1979.	15. (i) and (ii). For works in England, the Historic Buildings and Monuments Commission for England.	English Heritage	EIA consultation and stakeholder engagement: see main report Stakeholder engagement: Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	
16. Works affecting a garden or other land of historic interest registered pursuant to section 8C of the Historic Buildings and Ancient Monuments	16. For works in England, the Historic Buildings and Monuments Commission for England.	Not applicable.	-	-

(1) <i>Authority sought for</i>	(2) <i>Documents to be deposited with</i>	(3) <i>Proposed recipient(s)</i>	(4) <i>Prior general consultation</i>	(5) <i>Draft Application consultation</i>
Act 1953.				
<p>17. Works affecting:</p> <p>(i) a site of special scientific interest of which notification has been given or has effect as if given under section 28(1) of the Wildlife and Countryside Act 1981;</p> <p>(ii) an area within 2 kilometres of such a site of special scientific interest and of which notification has been given to the local planning authority; or</p> <p>(iii) land declared to be a national nature reserve under section 35 of the Wildlife and Countryside Act 1981; or a marine nature reserve designated under section 36 of</p>	<p>17. (i), (ii) and (iii). For works in or adjacent to England, English Nature.</p>	<p>Natural England (ii)</p>	<p>EIA consultation and stakeholder engagement: see main report</p> <p>Stakeholder engagement: Attended workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022. Member of project Strategic Steering Group.</p>	

(1) Authority sought for	(2) Documents to be deposited with	(3) Proposed recipient(s)	(4) Prior general consultation	(5) Draft Application consultation
that Act.				
18. Works affecting a National Park or an Area of Outstanding Natural Beauty.	18. For works in England, the Countryside Agency	Not applicable.	-	-
19. Works which are either: (i) within 3 kilometres of Windsor Castle, Windsor Great Park or Windsor Home Park; or (ii) within 800 metres of any other royal palace or royal park and which are likely to affect the amenity or security of that palace or park.	19. The Secretary of State for Culture, Media and Sport.	Not applicable.	-	-
20. Works which are within 250 metres of land which:	20. The Environment Agency.	The Environment Agency	See category 1	

(1) Authority sought for	(2) Documents to be deposited with	(3) Proposed recipient(s)	(4) Prior general consultation	(5) Draft Application consultation
<p>(i) is, or has been within 30 years immediately prior to the date of the application, used for the deposit of refuse or waste ; or</p> <p>(ii) has been notified to the local planning authority by the waste regulation or disposal authority for the relevant area.</p>				
21. The carrying-out of an operation requiring hazardous substances consent under the Planning (Hazardous Substances) Act 1990.	21. The hazardous substances authority as defined in that Act and the Health and Safety Executive.	Not applicable.	-	-
22. Works not in accordance with a development plan and which either—	22. (i) and (ii). For works in England, the Secretary of State for Environment, Food and Rural Affairs.	Not applicable.	-	-

(1) Authority sought for	(2) Documents to be deposited with	(3) Proposed recipient(s)	(4) Prior general consultation	(5) Draft Application consultation
<p>(i) involve the loss of not less than 20 hectares of agricultural land of grades 1, 2 and 3a (in aggregate); or</p> <p>(ii) taken with the other associated works cumulatively involve the loss of not less than 20 hectares of such land.</p>				
<p>23.</p> <p>(i) Works which would affect the operation of any existing railway passenger or tramway services provided under statutory powers; or</p> <p>(ii) the construction of a new railway for the provision of public passenger transport, or of a new tramway.</p>	<p>23. The Rail Passengers' Council or the London Transport Users' Committee as the case may require.</p>	<p>Not applicable.</p>	<p>-</p>	<p>-</p>

(1) Authority sought for	(2) Documents to be deposited with	(3) Proposed recipient(s)	(4) Prior general consultation	(5) Draft Application consultation
24. Works to construct, alter or demolish a transport system or to carry out works ancillary to its operation or works consequential upon its abandonment or demolition.	24. Her Majesty's Railway Inspectorate.	Her Majesty's Railway Inspectorate	-	
25. Works to construct new railways to which any regulatory provisions in the Railways Act 1993 would apply or provisions to amend existing powers in relation to railways subject to such regulation.	25. The Office of Rail Regulation.	The Office of the Rail Regulator	-	
26. The right for a person providing transport services to use a transport system belonging to another.	26. The operator of the relevant transport system.	Network Rail	Stakeholder engagement: Invite sent to attend workshop in October 2022. Invite to attend consultation drop in event sent November 2022. Consultation information and survey sent December 2022.	

(1) <i>Authority sought for</i>	(2) <i>Documents to be deposited with</i>	(3) <i>Proposed recipient(s)</i>	(4) <i>Prior general consultation</i>	(5) <i>Draft Application consultation</i>
27. Works affecting land in which there is a Crown interest.	27. The appropriate authority for the land, within the meaning of section 25(3).	Not applicable.	-	-
28. Works to be carried out in Greater London.	28. The Mayor of London.	Not applicable.	-	-



**Appendix 6. Consultation with bodies names in Schedule 6
(being those to be served with application documents pursuant to rule 14(4) and Schedule 6 to the
Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006)**

APPENDIX 6

CONSULTATION WITH SCHEDULE 6 PARTIES

(being those to be served with application documents pursuant to rule 14(4) and Schedule 6 to the Transport and Works
(Applications and Objections Procedure) (England and Wales) Rules 2006)

<i>(1)</i> <i>Authority sought for</i>	<i>(2)</i> <i>Documents to be deposited with</i>	<i>(3)</i> <i>Proposed recipient(s)</i>	<i>(4)</i> <i>Prior general consultation</i>	<i>(5)</i> <i>Draft Application consultation</i>
1. Works affecting the foreshore below mean high water spring tides, tidal waters or the bed of, or subsoil beneath, tidal waters (except where the land affected by the works falls within category 17 of Schedule 5 to these Rules).	1. For works in or adjacent to England, English Nature.	Not applicable.	See Appendix 5, category 17	
2. Works affecting the banks or the bed of, or the subsoil beneath, a river.	2. The Crown Estate Commissioners; and (except where the land affected falls within category 17 of Schedule 5 to these Rules) for works in England, English Nature.	Crown Estate Commissioners	See Appendix 5, category 2	
3. Works affecting the banks or the bed of, or the subsoil beneath,	3. Any organisation (other than the Inland Waterways Association and the National Association of Boat	Not applicable.	-	-

(1) <i>Authority sought for</i>	(2) <i>Documents to be deposited with</i>	(3) <i>Proposed recipient(s)</i>	(4) <i>Prior general consultation</i>	(5) <i>Draft Application consultation</i>
an inland waterway, a canal or inland navigation, or any of the reservoirs, feeders, sluices, locks, lifts, drains and other works comprised in or serving that inland waterway, canal or inland navigation.	Owners) upon which the Secretary of State has required the applicant to serve notice, as appearing to the Secretary of State to represent a substantial number of persons using the inland waterway, canal or inland navigation in question; and (except where the land affected falls within category 17 of Schedule 5 to these Rules) for works in England, English Nature.			
4. Works affecting an area under the control of a harbour authority as defined in section 57(1) of the Harbours Act 1964.	4. The navigation authority for any adjoining waterway (if different from the navigation authority for the harbour area) and the conservancy authority for any adjoining waterway.	A.B. Ports	See Appendix 5, category 4	
5. Works which would, or would apart from the making of an order, require a consent to the discharge of matter into waters or onto land under Chapter 2 of Part 3 of the Water Resources Act 1991.	5. The Environment Agency.	Environment Agency	See Appendix 5, category 1	

(1) Authority sought for	(2) Documents to be deposited with	(3) Proposed recipient(s)	(4) Prior general consultation	(5) Draft Application consultation
6. Works likely to affect the volume or character of traffic entering or leaving— (i) a special road or trunk road; (ii) any other classified road.	6. (i) For works in England, the Secretary of State for Transport (marked "for the attention of the Highways Agency"); (ii) The relevant highway authority.	Suffolk County Council (ii)	See Appendix 5, category 9	
7. The construction of a transport system involving the placing of equipment in or over a street (except a level crossing).	7. Owners and occupiers of all buildings which have a frontage on, or a private means of access which first meets the highway at, the part of the street in or over which equipment is to be placed, other than those on whom a notice has been served pursuant to rule 15(1).	Not applicable.	-	-
8. Works affecting any land on which there is a theatre as defined in section 5 of the Theatres Trust Act 1976.	8. The Theatres Trust.	Not applicable.	-	-
9. The modification, exclusion,	9. The person upon whom such protection or benefit is conferred, or	Not applicable.	-	-

(1) Authority sought for	(2) Documents to be deposited with	(3) Proposed recipient(s)	(4) Prior general consultation	(5) Draft Application consultation
amendment, repeal or revocation of a provision of an Act of Parliament or statutory instrument conferring protection or benefit upon any person (whether in his capacity as the owner of designated land or otherwise) specifically named therein.	the person currently entitled to that protection or benefit.			
10. The compulsory purchase of ecclesiastical property (as defined in section 12(3) of the Acquisition of Land Act 1981.	10. The Church Commissioners.	Not applicable.	-	-
11. Works in Greater London or a metropolitan county.	11. The relevant Fire and Rescue Authority within the meaning of Part 1 of the Fire and Rescue Services Act 2004 and the relevant Police Authority within the meaning of Part 1 of the Police Act 1996.	Not applicable.	-	-
12. The right to monitor, survey or investigate land	12. Every owner and occupier of the land, other than an owner or occupier named in the book of	Not applicable.	-	-

(1) Authority sought for	(2) Documents to be deposited with	(3) Proposed recipient(s)	(4) Prior general consultation	(5) Draft Application consultation
(including any right to make trial holes in land).	reference as having an interest or right in or over that land.			
13. Works or traffic management measures that would affect services provided by a universal service provider in connection with the provision of a universal postal service and relating to the delivery or collection of letters.	13. Every universal service provider affected.	Royal Mail	-	
14. Works in an area of coal working notified to the local planning authority by the British Coal Corporation or the Coal Authority.	14. The holder of the current licence under section 36(ii) of the Coal Industry Nationalisation Act 1946 or under Part 2 of the Coal Industry Act 1994.	Not applicable.	-	-
15. Works for which an environmental impact assessment is required.	15. For works in England, the Commission for Architecture and the Built Environment.	The Commission for Architecture and the Built Environment	-	
16. The compulsory	16. Any person, other than a person	None identified as likely to	-	-

(1) <i>Authority sought for</i>	(2) <i>Documents to be deposited with</i>	(3) <i>Proposed recipient(s)</i>	(4) <i>Prior general consultation</i>	(5) <i>Draft Application consultation</i>
acquisition of land, or the right to use land, or the carrying out of protective works to buildings.	who is named in the book of reference described in rule 12(8), whom the applicant thinks is likely to be entitled to make a claim for compensation under section 10 of the Compulsory Purchase Act 1965 if the order is made and the powers in question are exercised, so far as he is known to the applicant after making diligent inquiry.	be entitled.		

Risk Register				Strategic Risk Register		
Last Reviewed:	06.03.23					
Ref	Category	Project Phase	Risk Name	Risk Description	Potential Impact / Consequences	Opportunities
45	Funding	Barrier	Barrier costs too high.	Barrier costs exceed the project budget after detailed design stage.	Cost, Programme and Quality impacted.	None
46	Stakeholders	Barrier	TWAO Objections	TWAO objections received leading to public enquiry.	Delay to project and increased costs.	Early consultation with stakeholders.
17	Legislative or Regulatory	All	Delay to delivery	Brexit legacy delays procurement of materials and increases costs.	Impact on procurement of resources, resourcing and cost of project.	None
18	Strategic / operational	Barrier	Stakeholder management	Upset ABP (key stakeholder) impacting their future plans for Lowestoft	ABP leave Lowestoft Loss of good will to project Loss of Renewable energy industry impacting future economic and business growth ABP are a statutory stakeholder for the TWAO process ABP decide not to proceed with their Masterplan for port development Most heavily impacted landowner with limited benefits from the scheme - their inner harbour assets will be protected but not the outer harbour	Further develop good, mutually beneficial, relationship with ABP Continue to get ABP to support us (or do more) with other stakeholders / tenants Explore opportunities to support landowners / tenants (esp. SLP) in the future
19	Strategic / operational	All	Project Failure	Failure to deliver the Business / Local Plan	Loss of capital, increased costs to rectify issues	None
23	Environmental	All	Health & Safety	Works being delayed resulting in more construction ongoing during winter season increasing likelihood of extreme events	Loss of life, injury, delay to project, increase of cost.	None
24	Environmental	All	Health & Safety	Increased storminess due to climate change	Loss of life, injury, delay to project, increase of cost.	None
29	Economic & Financial including Insurance	All	Increased costs due to ineffective cost reporting.	Funding gap due to increased project costs.	Additional funding required or project scope reduced.	Value Engineering.
31	Change Management	All	Design Development	Design development during construction.	Cost, Programme and Quality impacted	None
20	Resources (incl. HR, IT, Finance)	All	Resourcing	Continued demand on Coastal Management and Legal teams to reach agreement Delays to Balfour Beatty - loss of committed resource and additional costs due to programme delays / scheme cancellation. Additional legal costs (BDB Pitman, Carter Jonas and 3rd party legal teams)	Delays and impact on quality	None
36	Environmental	All	Weather	>1:10 year event and/or extreme weather variants.	Cost and Programme impacted	None
37	External	ALL	Utilities	Impact of project works on existing utilities. New utilities required for project take longer than expected to be delivered. Unknown utilities found during works.	Cost, Programme and Quality impacted	None
38	Strategic / operational	All	Statutory bodies	Stats approvals take longer than anticipated and cost more.	Cost and Programme impacted	None
21	Legal	All	Land ownership	Land agreements for works not able to progress.	Setting an undesirable precedent Utilising Statutory Powers - significant project	None
30	Change Management	All	Scope change of project deliverables.	Change requests from stakeholders or due to site conditions.	Cost, Programme and Quality impacted	None

Ref	Category	Project Phase	Risk Name	Risk Description	Potential Impact / Consequences	Opportunities
32	Environmental	All	Ground conditions	Site conditions worse than ground or marine condition survey indicated	Cost, Programme and Quality impacted	None
8	Stakeholders	All	Stakeholder management	Important stakeholders try to influence strategic direction and scope of project.	Impact on programme, cost , quality	Increased profile of the project leads to additional funding and future investment opportunities.

Owner	Manager	Current Controls	Mitigating Action	Current risk			Target actions
				Likelihood	Impact	Risk Score	
Karen Thomas	Jon Stockwin	Cost management and reporting.	Target cost agreed.	A	1	A1	Review of design. Review of cost plans Independent Cost Consultant appointed to review project costs (Capital/Revenue).
Karen Thomas	Jon Stockwin	Stakeholder and communication strategy in place on the project.	Review of risk, comms strategy and engagement plan.	A	3	A3	Review of comms plan and specific stakeholder communication and
Karen Thomas	Tamzen Pope	Cost and programme float allowed in forecasts.	Industry report reviewed.	B	3	B3	Review of risk and procurement reports from contractor.
Karen Thomas	Jon Stockwin	Regular meetings with ABP Engaged in the project via Stakeholder Group Regular meetings with 3rd Crossing and Masterplan teams (ESC, SCC & ABP) ABP involved in meetings with tenants Landtake discussions ongoing for construction and O&M including support from Carter Jonas	Early involvement during the design of the barrier including being involved in the navigation simulation Involvement in project development including consideration of constraints and input into construction details	B	3	B3	
Karen Thomas	Tamzen Pope	PID in place on project	PEP initiated for delivery phase	B	3	B3	Review of project execution plan.
Karen Thomas	Jon Stockwin	Float and risk built into programme and cost plan.	Review programme and sequencing.	B	3	B3	
Karen Thomas	Jon Stockwin	Construction phase plan, Health & Safety controls.	Review of construction methodology.	B	3	B3	
Karen Thomas	Jon Stockwin	Budget management and cost forecasting.	Cost reports provided at each project stage and continual monitoring.	A	4	A4	Cost template set up.
Karen Thomas	Jon Stockwin	Change management procedure.	Design gateway sign offs, design reviews of CDPs	B	1	B3	Regular change design meetings in place
Karen Thomas	Jon Stockwin	Project budget allows for additional resourcing	Additional resource added to the project team.	B	4	B4	
Karen Thomas	Jon Stockwin	Float and risk built into programme and cost plan.	Risk pot and programme float.	B	4	B4	Risk pot and programme to be reviewed.
Karen Thomas	Jon Stockwin	Float and risk built into programme and cost plan.	Risk pot and programme float.	B	4	B4	Risk pot and programme to be reviewed.
Karen Thomas	Jon Stockwin	Float and risk built into programme and cost plan.	Risk pot and programme float.	B	4	B4	Action tracker set up
Karen Thomas	Jon Stockwin	Legal agreement programme.		C	1	C1	
Karen Thomas	Jon Stockwin	Change management procedure.	Risk pot in place to cover change.	B	3	B3	Regular change control meetings in place

Owner	Manager	Current Controls	Mitigating Action	Likelihood	Impact	Risk Score	Target actions
Karen Thomas	Jon Stockwin	Risk pot in place to cover change.	Change management procedure.	B	3	B3	Regular change design meetings in place
Karen Thomas	Jon Stockwin	Stakeholder and communication strategy in place on the project.	Stakeholder communication plan	C	3	C3	Review of stakeholder communication plan

Target Date	Target risk			Direct- ion of Travel	Date Open	Date Closed
	Likelihood	Impact	Risk Score			
May-23	A	3	A3	▲	12/08/2021	
Apr-23	B	3	B3	▬	06.03.23	
On-going	B	4	B4	▲	26.03.21	
On-going	B	4	B4	▲	26.03.21	
On-going	B	4	B4	▲	26.03.21	
On-going	B	4	B4	▬	12/04/2021	
On-going	B	4	B4	▬	12/04/2021	
On-going	B	4	B4	▼	04/04/2021	
On-going	B	4	B4	▼	04/04/2021	
On-going	B	5	B5	▼	26.03.21	
On-going	B	5	B5	▬	12/04/2021	
On-going	B	5	B5	▬	12/04/2021	
On-going	B	5	B5	▬	12/04/2021	
On-going	C	2	C2	▲	26.03.21	
TBC	C	3	C3	▼	04/04/2021	

Date	Likelihood	Impact	Risk Score	ion of Travel	Date Open	Date Closed
TBC	C	3	C3	▼	04/04/2021	
On-going	C	4	C4	—	26.03.21	

- A A - Very High (>90%)
- B B - High (>60% - 90%)
- C C - Significant (>30% - 60%)
- D D - Low (>15% - 30%)
- E E - Very Low (>5% - 15%)
- F F - Almost Impossible (>0% - 5%)

A1	B1	C1	D1
A2	B2	C2	D2
A3	B3	C3	D3
A4	B4	C4	D4
A5	B5	C5	D5

- 1 1 - Catastrophic
- 2 2 - Critical
- 3 3 - Major
- 4 4 - Marginal
- 5 5 - Negligible

High
Medium
Low

In Progress
Closed
Not Started

E1	F1
E2	F2
E3	F3
E4	F4
E5	F5

Introduction

A statutory environmental impact assessment has been undertaken to help protect the environment by ensuring that any significant impacts the scheme may cause are identified and taken into account in decision making.

This has entailed an assessment of the likely impacts of the Scheme both during construction and operation. Mitigation measures have been identified as part of the Environmental Statement (ES) which will form part of the TWA0 application.

The ES submitted with the application will include a full assessment of the Scheme impacts both during construction and when in operation, and show how any negative impacts will be mitigated.

Environmental Impacts and Mitigation

The follow describes the main adverse impacts of the Scheme and the measures proposed to mitigate those effects.

Population and human health –

- construction of the proposed barrier is likely to require closures of the [] channel would have significant effects on boats users accessing the Inner and Outer Harbour. Discussions on mitigation, timings and extents of the closures are still ongoing; the project is working closely with affected landowners and businesses.
- There is predicted to be dust soiling impacts from demolition, earthworks, construction activities and trackout activities (ie. the movement of materials around the construction site and out on to the local road network). The adoption of good practice dust mitigation measures to manage the generation of emissions at source would therefore be required, set out in a dust management plan.
- During operation, when the barrier is closed, this would prevent boat passage from the Outer Harbour into the Inner Harbour and vice versa. Barrier closures would occur for relatively short periods and would likely be communicated in advance, such that the effects could be managed and would not be significant.

Noise and vibration –

Temporary Noise and vibration effects are anticipated due to a number of activities taking place during construction. Significant daytime noise for receptors along Waveney Road, Commercial Road and Station Square will be experienced, due to piling for barrier abutments and demountable defences. Significant evening and night-time noise will be experienced for receptors along Waveney Road, Commercial Road, Station Square, Pier Terrace, The Harbour PH and the Royal Norfolk and Suffolk Yacht Club, during concrete pours and if in-channel piling overruns from the daytime. Mitigation will include a noise management plan and Best Practice Measures to reduce noise, erection of noise barriers around static construction plant and advance notice of noisy works to nearby residents.

Significant vibration effects on some port structures will occur during piling activity, with mitigation including ongoing vibration measurement during piling and investigation into alternative piling methods.

Biodiversity, flora and fauna – Impacts include disturbance to estuarine and marine mammals (harbour porpoise and seal) caused by noise and vibration from piling activities in the water and from other construction activities and to estuarine, marine and migratory fish within the vicinity of the works and from construction activities. Significant effects will be mitigated by implementing measures including searches for mammals before commencing piling, having someone present during the piling to spot whether any mammals move into the area and a procedure for the starting up of piling which minimises noise and vibration. Standard construction best practice (eg. production of an environmental management plan and a pollution prevention plan) will also be implemented. Damage/disturbance to benthic habitats and species under the footprint of the works and from construction activities will also be mitigated by the inclusion of standard construction best practice. The potential introduction of invasive non-native species will be mitigation via standard management procedures set out by the International Maritime Organisation. Disturbance to breeding kittiwake and/or destruction of nests during

construction will also occur. To compensate for the loss of nesting habitat, ledges will be incorporated into the design as alternative locations for nesting. The operational impacts of the Scheme are limited to preventing the movement of migratory fish between the North Sea and Oulton Broad when the barrier is closed. However, as this will occur infrequently and for a short duration only, the effect is not significant.

Landscape and visual amenity - The character and quality of the South Lowestoft and Kirkley Conservation Area will be temporarily affected during the construction period with the intrusion of construction activity and plant (particularly taller machinery) which would be visible across the local landscape and to visual receptors. During operation, the barrier's influence on the local landscape character would vary depending on it being open or closed, with it being most prominent in its closed position.

Water, geomorphology and ground conditions – A number of impacts on the water environment will occur during construction. There is potential for a change in tidal flows resulting from channel narrowing due to the abutments and cofferdams that will be in place during construction. Channel deepening associated with dredging may also affect tidal flows. Seabed disturbance from the construction of cofferdams, dredging, piling activities and disposal of dredged material is likely to result in increased suspended sediment concentrations within the water column. Construction works and use of haul routes taking place in and adjacent to water have the potential to affect water quality through spills and contamination. This may occur through the mobilisation of contaminated soils or the creation of new flow pathways. Excavations and piling have the potential to impact water quality and groundwater flows within the underlying aquifers. This may disturb bed sediment and create new flow pathways or mobilise contaminated sediment. Disturbance of land contamination and physical hazards in made ground during construction has the potential to impact human health. In channel works at the barrier location next to the Bascule Bridge have the potential to reduce flow conveyance at a location where there is an existing constriction of the channel. Mitigation measures include monitoring surveys, implementation of environmental and sediment management plans, stockpile management and pollution prevention, management of dewatering discharge and completion of a piling risk assessment.

When operational, the barrier has the potential to cause a number of impacts. Closure of the barrier has the potential to alter the tidal regime during surge events and maintenance. Periodic sediment management has the potential to increase suspended sediment concentrations and create a plume of sediments which could be transported offshore or into Lake Lothing depending on the stage of the tides when the barrier is operated. Barrier operation has the potential to result in changes to sediment deposition, leading to changes in the volume of dredging required. Periodic dewatering of the abutments has the potential to increase concentrations of pollutants, if the water becomes stagnant. New flow pathways resulting from the Scheme have the potential to contaminate groundwater. Mitigation includes sediment management and use of silt screens/booms during dredging and appropriate operation of the barrier to minimise risks to the environment.

Historic environment - Temporary impacts to the setting of heritage assets (eg. Grade II* listed Royal Norfolk and Suffolk Yacht Club building) is anticipated, due to the presence of construction activity and plant. There is a possibility that the excavation of material associated with construction has the potential to impact previously unknown archaeological remains. However, previous studies reviewed, indicate these would likely be of low value.

Transport – Subject to a review of change of compound location from Commercial Road to Riverside Road. It is expected that construction traffic associated with the Scheme will be light in comparison to the existing traffic in the area when spread over the full working day and therefore have only minor effects on the identified traffic and transport receptors. Construction will impact on existing parking provision, due to the displacement of vehicles which would normally park within the ABP and Royal Norfolk and Suffolk Yacht Club grounds. This issue will need to be managed by East Suffolk Council and appropriate alternative parking arrangements made.

Navigation - During construction, a number of navigation related impacts will occur. The temporary closure of the Inner Harbour Entrance Channel will be required for [] and create a number of long term restrictions to entering or departing the Inner Harbour for all users within the port, Lake Lothing and Oulton Broad. The duration of these possessions will vary but will for up to a number of weeks in length and may occur during sensitive periods for navigation. Construction will narrow the width of the Inner Harbour Entrance Channel, impacting navigability for larger commercial vessels. Use of the Yacht Basin

and Trawl Basin and associated infrastructure will be significantly disrupted for the duration of the construction period. Mitigation proposed to address these issues include navigational aids to assist vessels through the Inner Harbour Entrance Channel and alternative facilities for users of the Yacht Basin and Trawl Basin. During operation, when the barrier is closed, access is removed to and from the Inner Harbour in advance (up to six hours) of a tidal surge. Impacts to navigation will also be experienced during some periods of maintenance, as closures of the channel may be necessary during these times. As mitigation, agreed navigational aids will be in place during operation and will include lighting and fendering along the faces of the barrier gates. Prior to each barrier closure, East Suffolk Council will give notice of all temporary restrictions to navigation through the Inner Harbour Entrance Channel. Notice to Mariners will be provided by the Harbour Authority.

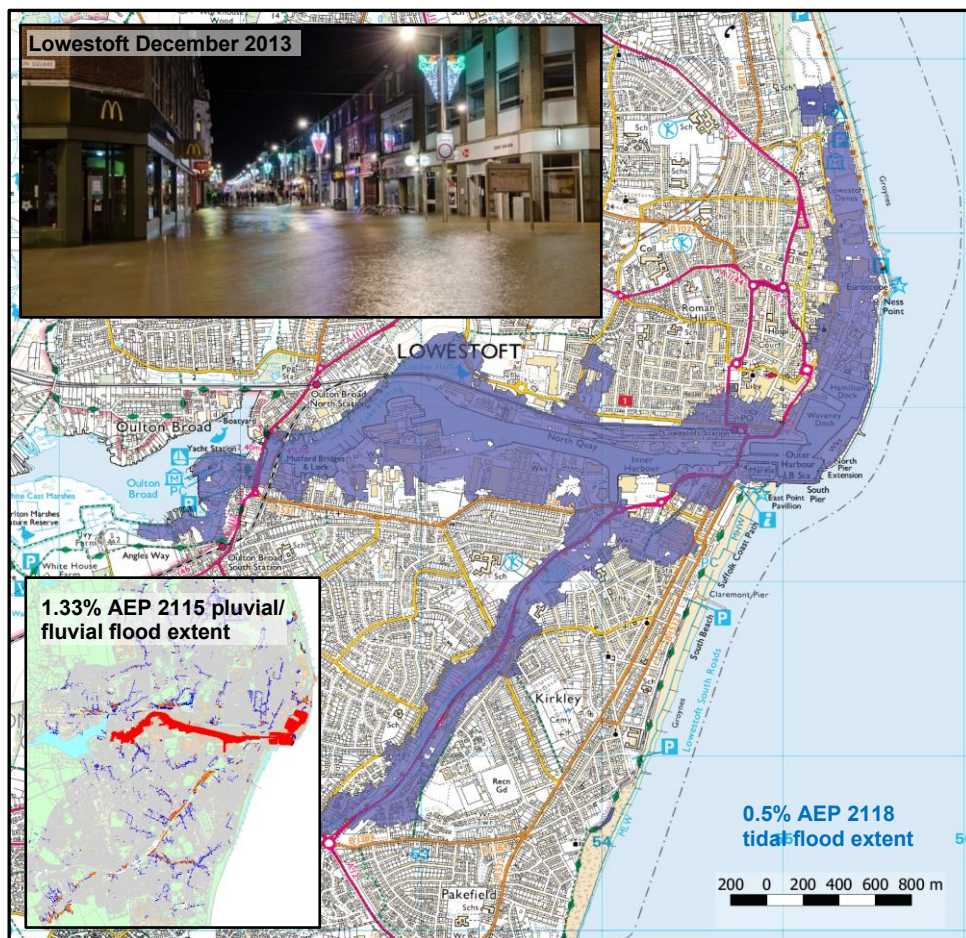
Risks to the EIA

There are currently a number of risks associated with completion of the Environmental Statement:

- Consultation is on-going with affected landowners and the port authority regarding the navigational impacts of the Scheme. If agreement on the issues to be determined is not reached, this will impede update and completion of the Navigational Impact Assessment and Navigation Management Plan, which will result in a delay to the update and completion of the navigation assessment reported in the Environmental Statement.
- Consultation with a range of statutory and non-statutory consultees is on-going. There remains a risk that this consultation can not be concluded in a timely fashion and any required updates to the Environmental Statement made prior to the TWA0 submission deadline.
- The Scheme's Flood Risk Assessment is currently being updated to reflect the latest climate change allowances (UKCP18). There is a risk that this is not completed in time for the Environmental Statement to be updated prior to the TWA0 submission deadline.
- Additional sediment and hydrodynamic modelling is currently being undertaken. There is a risk that this is not completed in time for the Environmental Statement to be updated prior to the TWA0 submission deadline.

Lowestoft Flood Risk Management Project

RMA Outline Business Case



Version No: 2.3

Date: 8-11-22

Note: Updates to the body text of this OBC since the 2018 submission are coloured in blue text

BUSINESS CASE APPROVAL SHEET

1 Review & Technical Approval				
Project title	Lowestoft Flood Risk Management Project			
Authority project reference	57302/1301/30019	EA reference	AES503E/008A/006A	
Lead authority	East Suffolk Council	Date of submission	08-11-2022	
Consultant	Jacobs	Document stage (SOC/OBC/FBC)	OBC	
Previous document	Lowestoft FRMP SOC	Previous doc ref	V1.3	
Job title	Name	Signature	Date	
'I confirm that this project meets our quality assurance requirements, environmental obligations and Defra investment appraisal conditions and that all internal approvals, including member approval, have been completed and confirm we do not wish to apply for Grant in Aid or local levy funding for the tidal works at this stage.				
Authority Project Executive	Karen Thomas			
'I have reviewed this document and confirm that it meets the current business case guidelines for local authority and Internal Drainage Board applications.'				
Business case reviewer	Tamzen Pope			
'I confirm that the project is ready for assurance and that I have consulted with the Director of Business Finance'				
Area Flood & Coastal Risk Manager	Mark Johnson			
NPAS Assurance <input type="checkbox"/> Projects £100k - £10m (Tick the appropriate box)		Large project review group <input checked="" type="checkbox"/> Projects >£10m (LPRG)		
Recommended for approval				Date
NPAS or LPRG Chair				
Stage 1* project total as approved (£k)		Version number	V2	
Stage 1* project total made up of:	Capital Grant (£k)			
	Levy (£k)			
	Other Contributions (£k)			
2 Project Financial approval				
Financial scheme of approval	Project total	Name	Signature	Date
Director of Business Finance	All >£100k			
Director of Operations	£1m -£10m			
Executive Director of Operations	>£10m			
Chief Executive	>£20m			
3 Defra approval				
Date sent to Defra (or N/A)	NA	Version number (if different)		
Date approved by Defra (or N/A)	NA			

<p>Comments</p>	<p>Due to the change in the preferred option to a 40m Tidal Barrier through the Local Choice framework since the submission of the 2018 OBC and the resultant funding gap, the project team understand LPRG cannot provide financial assurance until a complete funding package is in place. Therefore ESC are requesting technical assurance from LPRG to allow ESC to pursue further discussions with other government departments and potential funders of the project.</p> <p>High level assessment of the additional costs with the 40m tidal barrier indicates that the total capital project cost is likely to be £171M compared to the current approved budget of £66.3M. This cost is subject to further detailed design development which is programmed to conclude in August 2023. Of the total £171M there is a large risk and contingency allowance as per national Treasury guidance for all capital flood risk schemes. There is also a significant inflationary allowance due to the economic climate. As such our current scheme costs excluding risk and inflation are £101M leaving a £43-113M funding gap.</p> <p>Despite the increased cost of delivering the local choice option - the barrier costs are considered to be comparable with similar barrier projects around the country and reflect the complexity and challenge of delivering a major infrastructure scheme in the centre of a fully operational port.</p> <p>The 2022 OBC is being submitted now following discussions with Environment Agency staff at Area and National level. ESC have an opportunity to work with key stakeholders (Associated British Ports and the Royal Norfolk and Suffolk Yacht Club) to realise efficiencies in the delivery of the local choice option and technical assurance of the approach will assist in pursuing this opportunity.</p> <p>With regards to the current funding situation, specifically the availability of funding – your attention is drawn to Section 1.7 and the Financial Case.</p> <p>A significant element of environmental assessment is currently under way for the 40m tidal barrier and is currently in draft format and not at a suitable stage of development to be shared outside of the project team. Further details of these environmental assessments (including EIA and HRA) can be found in the 'Next Steps' detailed in Section 3.4 of this OBC</p>
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For FSoD Coordinator use only:

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Glossary / acronyms

Annual Exceedance Probability (AEP): The probability associated with a return period (T), e.g. event of return period 100 years has an AEP of 1/T or 0.01 or 1%.

Benefit Cost Ratio (BCR): BCRs are used to identify the relative worth of one approach over another. It is the ratio of the PV benefits to the PV costs for each option.

Business case report: A business case including a programme of works that supports a recommendation to implement a flood risk management project. The project is approved by the Environment Agency under the Financial Scheme of Delegation from Defra. The project plan is supported by technical appendices.

Do Minimum: An option where the Operating Authority takes the minimum amount of action necessary to maintain an asset. For many places, this means patch and repair works of existing defences with no replacement should the defences fail.

Do Nothing: An option used in appraisal to act as a baseline against which all other options are tested. It assumes that no action whatsoever is taken. In the case of existing works, it assumes for the purposes of appraisal that Risk Management Authorities cease all maintenance, repairs and other activities immediately. In the case of new works, it assumes that there is no intervention, and natural and other external processes are allowed to take their course.

Flood and Coastal Erosion Risk Management Appraisal Guidance (FCERM-AG): Defra guidance to Risk Management Authorities on the process for appraising flood and coastal defence projects to ensure best use of public money.

Flood & Coastal Risk Management Grant in Aid (FCRM-GiA): Government money allocated to Risk Management Authorities (Environment Agency, Local Authorities, Internal Drainage Boards) for capital works which manage and reduce flood and coastal erosion risk.

Flood Defence Asset: Any structure with the prime purpose to provide flood defence, e.g. culvert.

Fluvial: Relating to the flow in the river that originates from the upstream catchment and not the sea.

Flood Risk Management (FRM): By Risk Management Authorities to manage flood risk.

Gross Value added (GVA): Gross value added is the value of output less the value of intermediate consumption; it is a measure of the contribution to GDP made by an individual producer, industry or sector.

Incremental Benefit Cost Ratio (IBCR): Ratio of the additional benefit/cost for two options.

Lead Local Flood Authority: After flooding in 2007 the government commissioned a review, which recommended that "Local authorities should lead on the management of local flood risk, with the support of the relevant organisations" (The Pitt Review, 2008). This led to the Flood and Water Management Act (2010) and the set-up of Lead Local Flood Authorities (LLFA) who have new powers and duties for managing flooding from local sources, namely **Ordinary Watercourses**, surface water (overland runoff) and groundwater.

Maintain: Active intervention to keep defences at their current crest level.

Multi-coloured Manual (MCM): Provides techniques and data that can be used in benefit assessments.

National Government Departments': As listed in Section 2.7

New Anglia Local Enterprise Partnership (NALEP): Local Enterprise Partnership working to drive growth and enterprise in Norfolk and Suffolk.

Net Present Value (NPV): Stream of all benefits net of all costs for each year of the projects life discounted back to the present date.

National Planning Policy Framework (NPPF): Sets out the Government's planning policies for England and how they should be applied

Present Value (PV): Monetary value of ongoing or future costs, discounted to provide equivalent present-day costs.

Property Level Protection (PLP) – Measures installed at individual properties to provide resilience against flooding. Includes flood board, air brick covers and flood gates.

PV Benefits (PVb): Those positive quantifiable changes that a project will produce over its lifetime.

PV Costs (PVc): The cost for implementation of a particular scheme over its lifetime.

PV Damage Avoided: The economic damages avoided once an option has been implemented.

Scape: The National Civil Engineering and Infrastructure framework, managed by the Scape Group Ltd public partnership. An OJEU compliant framework open to any public body in the United Kingdom.

Standard of Protection (SoP): The design event standard, measured by Annual Event Probability (AEP), that an existing asset or proposed scheme provides.

Water Framework Directive (WFD): European Directive 2000/60/EC setting out approaches to river basin planning to help to protect and enhance the quality of surface freshwater (including lakes, streams and rivers), groundwaters, groundwater dependent ecosystems, estuaries and coastal waters out to one mile from low-water. Sets environmental objectives related to ecological, physico-chemical, chemical, morphological and hydrological quality.

Executive Summary

1.1. Introduction

In 2018 Waveney District Council as lead RMA partner with Suffolk County Council presented EA assurers with the Lowestoft Flood Risk Management Project (LFRMP) Outline Business Case (2018 OBC) as an integrated business case for the management of tidal, fluvial and pluvial flood risk for the town of Lowestoft.

The OBC followed the Strategic Outline Business Case (SOC) for the project that received a recommendation for approval from LPRG in May 2017 and approval from Waveney District Council's Cabinet in June 2017.

Technical assurance was sought from the Environment Agency's LPRG for the 2018 OBC which defined the preferred approach for management of tidal, fluvial and pluvial flood risk in Lowestoft. The 2018 OBC provided East Suffolk Council (ESC, previously Waveney District Council and Suffolk Coastal District Council) with this technical approval for the tidal walls work but not financial due to funding shortages at the time of the 2018 OBC. ESC have since sourced the funds to do the work however we also face the additional challenges of increasing costs and inflation associated with the pandemic and post-pandemic/Brexit/Ukraine-related supply chain and material cost increases.

As an RMA-led project, the OBC also sought to secure FCERM – GiA funding for the project. However, it was acknowledged that GiA funding would be conditional and subject to securing other regulatory consents/orders, legal and financial agreements. Financial approval was given for the fluvial and pluvial elements of the project but not granted for the tidal elements as the latter required a further, more detailed OBC. The pluvial fluvial elements of the project were completed in 2021 and therefore no further approvals are required for these elements of the project.

In support of the initial SOC, a Strategic Approach (Appendix M) was prepared to set out the strategic interactions between the different sources of flood and erosion risk to Lowestoft, establishing the approach to apportionment of benefits where they are shared between the sources of risk. This strategic approach document has been refreshed as part of the development of the 2022 OBC. The recommendations of the Strategic Approach remain substantially unchanged as a result of the review.

Technical assurance is now being sought from the Environment Agency's LPRG for this 2022 OBC which provides an update to the approach for management of tidal flood risk in Lowestoft through the identification of a local choice 40m tidal barrier option and updates to the economic assessment of options taking into account changes in appraisal guidance since the previous submission in 2018. Due to the increased material costs and inflation the preferred solution is unlikely to meet LPRG financial approval. As we have a significant funding gap of £113M as a worse case. We are undertaking additional Monte Carlo analysis to gain a more realistic risk allocation. We are also progressing an opportunity to deliver the Local choice Option on an accelerated consenting and construction programme (Option 9LCU) which will realise program savings resulting in cost savings of in the region of £10m in cash terms reducing the funding gap when compared to Option 9LCC. The cost of the 'local choice' option at £172M (Option 9LCC with AOB and 95%ile Risk allowances) is comparable with similar recent barrier projects around the UK. However, in this case there is a greater cost certainty due to the stage we are at in barrier design at this point in OBC submission. The 'local choice' option is not cost beneficial under current Treasury rules. It is, however the only workable option that will deliver flood risk reduction to complete the integrated flood scheme for Lowestoft and is the also agreed

in principle with the key landowner stakeholders, including ABP, allowing this project to progress at an accelerated rate from April 2024 for delivery in 2027.

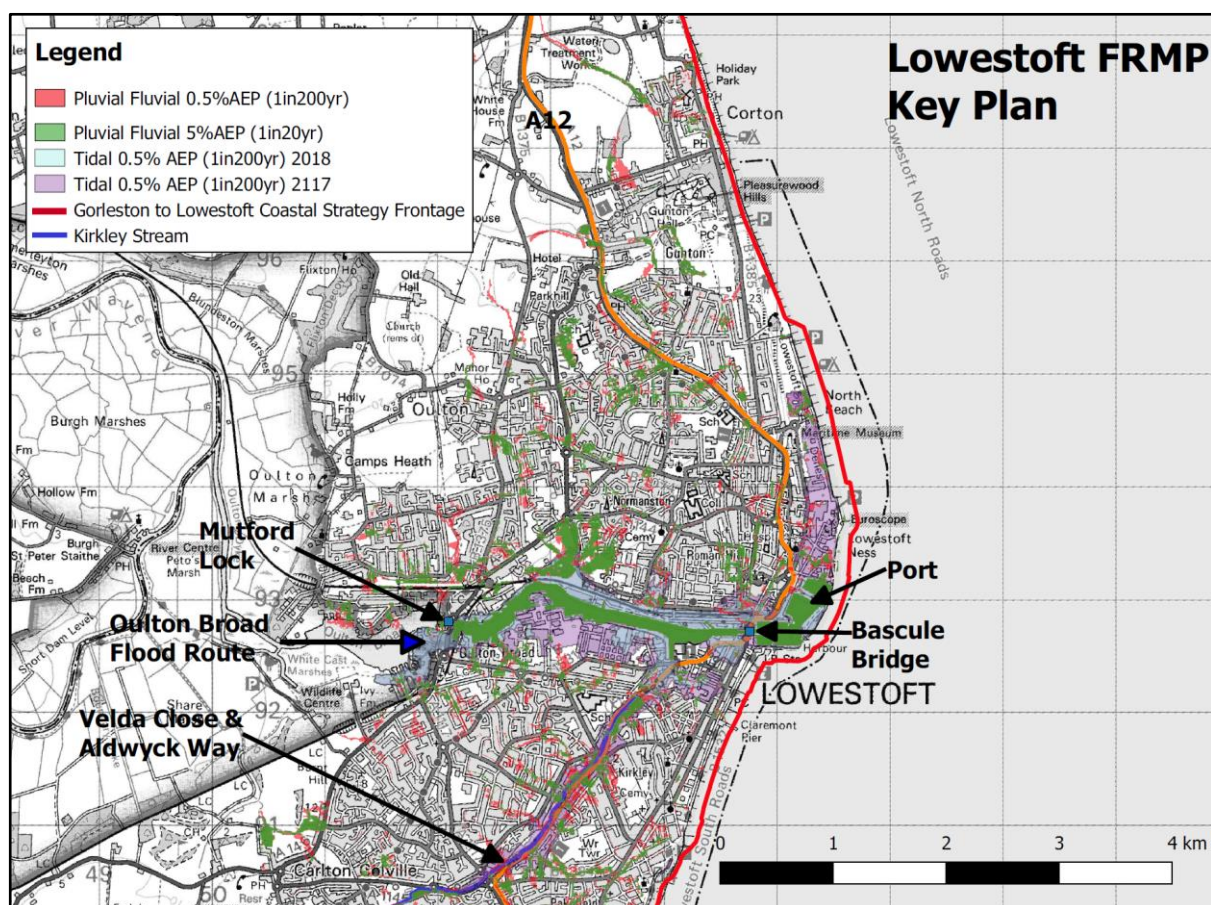
In addition to addressing the risk of all forms of flooding to vulnerable homes in a coastal town with no formal flood defences, a core outcome of the project is to support economic growth and regeneration by reducing the risk of tidal flooding to infrastructure, commercial land and businesses. An innovative approach is also required to deliver the project while minimising disruption to the Port of Lowestoft that serves the nationally important offshore and other energy sectors of national importance.

As a result, the majority of funding required for the preferred options is expected to come from partnership and other national funding sources. A comprehensive funding strategy has been further developed to secure the remaining partnership contributions required to deliver stage two.

The LFRMP is being developed by the following strategic partners:

- East Suffolk Council (ESC) – lead partner
- Suffolk County Council (SCC) – pluvial/fluvial lead
- Environment Agency (EA)
- Associated British Ports (ABP)
- New Anglia Local Enterprise Partnership (NALEP)

Key Plan



1.2. Strategic case

Strategic context

The main driver for investment is to reduce the risk of flooding (tidal, pluvial and fluvial) to residential and commercial property in Lowestoft. The December 2013 tidal surge event caused significant damage and disruption to the Lowestoft community/economy and it is considered that without intervention to manage these risks Lowestoft will not be able to develop and will probably go into decline.

Investment to manage tidal flood risk in Lowestoft is supported by the SMP2's policy of hold the line for the coastal frontage. The proposals are compatible with the recommendations of the Gorleston to Lowestoft Coastal Management Strategy.

The case for change

Lowestoft is a town of multiple deprivation that has become increasingly vulnerable to flooding from all sources for many decades.

At present Lowestoft does not have any formal tidal defences protecting the town and without intervention, it [has](#) become increasingly vulnerable to tidal flooding due to climate change. Lowestoft is currently considered to be at risk from the onset of flooding from tide levels with around a 1in5 (20%) to 1in10 (10%) Annual Exceedance Probability (AEP). A 1in200year (0.5% AEP) event (2018) would put approximately 221 residential and 373 commercial properties at risk of tidal flooding in addition to a number of locations earmarked for future development within the Lowestoft Local Plan

This situation gets significantly worse when the impacts of climate change are considered with the low standard of protection restricting the growth potential of the local economy with a 1in200 year (0.5% AEP) SoP being the standard considered by developers and the Local Planning Authorities to enable the majority of new developments.

The December 2013 storm surge event was between a 1in100 (1%) and 1in150 (0.67%) AEP event) and approximately 158 residential and 233 commercial properties were flooded in Lowestoft. The tidal flooding also resulted in the closure of key transportation links including Lowestoft railway station and the A47 through Lowestoft.

To effectively manage risk of flooding from all sources in Lowestoft, ESC have developed a integrated Lowestoft Flood Risk Management Project. In 2021 we completed the fluvial and pluvial elements of this project and we have begun work on tidal defences as set out in our 2018 OBC. However, we now need to deliver a 40m tidal barrier to complete the integrated package of works. The lack of defences are suppressing the ability of Lowestoft to develop and grow and are not allowing the deprived areas of the town to "Level Up" as per wider Government outcomes. The lack of certainty of tidal flood risk is holding Lowestoft back and allowing social deprivation to remain a key issue for the town.

Construction of tidal walls have commenced along Hamilton Road (completed 2022) and Waveney Road (still in progress) with funding that was not contingent of the financial approval of the 2018 OBC. The submission of this 2022 OBC is aimed at securing the technical approval for the revised options and refreshed appraisal. This OBC has been developed using the guidance set out in the FCERM-AG (Environment Agency 2021) and Treasury Green Book guidance (HMT 2020 with 2021 amendments). Due to the fact the scheme is already well underway making it different to a standard OBC extensive consultation has taken place between the ESC and EA at both Area and National levels to inform this OBC and the development of the overall project.

The Lowestoft Flood Risk: Economic Footprint Impact Report (Appendix F3) REF 8 assessed the potential impact of flood risk on Lowestoft's current and future economic footprint. The study concluded that for a tidal event with a 1in200yr return period (0.5% AEP which is similar to the 2013 surge event) 30% of Lowestoft's

existing Gross Value Added (GVA) is at risk of flooding and this rises to 62% with climate change if it remains undefended. This is discussed further in Section 3.7 of this OBC.

Including the notional FDGiA allocation, the project has secured commitments for £69,266,893 of funding to date. £62,176,439 is from partnership funding sources and includes;

- £10M from NALEP Growth deal
- £43,486,000 from HMG Green Recovery Fund

The GRF contribution was the largest capital allocation made nationally from the fund. Both allocations highlight the significant role the LFRMP has to play in supporting and enabling economic growth locally and nationally.

As evidenced in Appendix N1, a comprehensive funding strategy has been developed but a fully resourced plan is **no longer in place** due to the need for the 'Local Choice' barrier option and the rising inflationary cost of materials, supplies and resources that has happened globally in the last 2 years.

As the majority of the partnership funding requirement has related to the cost of delivering the tidal barrier while enabling the port to remain fully operational – the focus of our funding strategy now is to secure funds from other national sources by demonstrating the value of the scheme to at least 6 Government departments and their national outcomes.

Working with ABP's LEEF (Lowestoft Eastern Energy Facility) project team we have developed a unique programme opportunity to support their outer harbour expansion to allow greater green energy growth with wind and marine sector and meet the marine transportation needs of the national nuclear infrastructure project at Sizewell C (SzC) to remove road transport pressures and reduce carbon through that route (in line with Government national policy).

The port is therefore poised for a significant economic shift and ABP have granted us full access to the navigational channel for 2 years if we can accelerate the LFRMP barrier project to commence in April 2024. Further cost reductions will likely be made as a result of this unconstrained access to the channel to build the barrier infrastructure both through the reduced programme timing and oncosts as well as the opportunity to buy materials earlier. This opportunity is time limited as the LEEF project will progress from 2024 regardless of the LFRMP.

The fast moving nature of this opportunity to build the barrier and support the LEEF project and EDF in the delivery of SzC is therefore presenting the LFRMP project team with a unique opportunity to reduce flood risk to the town earlier and make cost savings. However we cannot commit to this accelerated programme fully without closing the funding gap of £113M and in parallel having greater national Government Departments support to maximise funding opportunities that may arise from the wider infrastructure delivery.

Objectives

The main objective of the LFRMP is to reduce the risk of tidal and pluvial fluvial flooding to residential and commercial properties in Lowestoft in a sustainable way that promotes economic growth and development.

Works to manage the risk of pluvial and fluvial flooding have been completed and therefore this objective has been partially met. Works to reduce the risk of tidal flooding are ongoing.

The project will deliver National Government outcomes for at least six Government Departments and contribute significantly to the growth of the economy.

The scheme aims to underpin the wider development of Lowestoft port as a central hub for marine and offshore industry notably supporting an accelerated delivery programme for ABP's LEEF project and as a marine transport hub for the Sizewell C nuclear power station (national infrastructure project).

1.3. Approach to economic cases

This OBC presents two separate economic cases for the tidal and pluvial fluvial flood risk elements. This approach has been taken to maintain a clear distinction between these sources of flood risk which are considered to have a low probability of combined occurrence with an insignificant overlap in the benefit areas of the respective preferred options.

This approach also enabled a two-stage approach to delivery of the project and helped safeguard the delivery of pluvial fluvial OM2's within the last 2015-2021 FCERM six-year programme.

1.4. Economic case – Tidal

Options considered

Table 1.1 summarises the tidal options appraised in this OBC, identifying the options taken forward to the short list.

Table 1.1 Tidal options considered

Option	Description	Benefits delivered /Issues involved	Reason for shortlist or rejection
1	Do Nothing	No Benefits – reduced SoP when informal defence along A47 is not serviceable, climate change impacts are considered and increased damages when no flood warning service provided. Does not promote growth.	Shortlisted as baseline economic case
2	Maintain - Do minimum	Some benefits – SoP reduces as climate change impacts, continued flood warning. Does not promote growth	Shortlisted as green book requirement.
3	Improve – flood walls only	Improves SoP to the majority of the strategy area – Mutford lock end still subject to flooding from the Broads' system in tidal surge event. Walls along inner harbour quays may restrict operational usage of some quaysides. Hydraulic modelling indicates some increase in flood risk to unprotected property at western end of Lake Lothing.	Shortlisted to test the feasibility of a non-barrier option.
4	Improve - Outer Harbour barriers and walls	Can provide the required standard of protection. Provides protection to the port area but also restrictions on the use of the port during a surge event.	Rejected due to: Significant cost of two large tidal barriers, significant improvement works to harbour arms, significant impact on ports operations during and post construction including losing its classification as a Safe Haven.
5	Improve – 28 metre Bascule Bridge barrier and walls	Improves SoP to the majority of the study area – Mutford lock end remains at risk of tidal flooding from the Broads' system. <i>Issues include: likely ship impacts (and associated costs and environmental effects of repairs) due to a narrower navigation channel compared to Option 9, as predicted by navigation simulations completed in 2021.</i>	Shortlisted. As a tidal barrier option seaward of the Bascule Bridge. Early indications from business and public consultation is that this option meets with public approval. <i>Identified in the 2018 OBC as the preferred option.</i>

Option	Description	Benefits delivered /Issues involved	Reason for shortlist or rejection
6	Improve – third bridge crossing barrier and walls	Improve SoP to the majority of the strategy area – Mutford lock end remains at risk of tidal flooding from the Broads' system. Issues include: timing of project implementation, costs and navigation impacts.	Rejected. Third crossing is already being built. The 2018 OBC concluded that even with the potential efficiencies of the combined approach, the capital expenditure associated with such a wide barrier structure far exceeded that of the Bascule Bridge barrier, and makes Option 6 unaffordable.
7	Temporary flood defences only	Improves SoP to limited areas of the strategy area. Will not enable growth nor significantly increase business confidence. Significant impact on business operations when deployed.	Rejected as a long-term solution due to: Low standard of protection (1in50 year (2% AEP) SoP in 2018) feasible, high long term operational costs, increased risk of failure or outflanking and lower levels of reliability when compared to permanent defences. Does not enable growth. Cannot readily keep up with climate change impacts and therefore cannot achieve the project objectives.
8	Property level resilience only	Limited benefits to individual properties where depth of flooding does not exceed 0.6m. Will not enable growth or significantly increase business confidence. Will not reduce the impact of flooding on transportation routes or other infrastructure.	Rejected as long-term solution due to: Depth of flooding means that for the majority of properties, this approach is not technically feasible, does not enable growth or protect infrastructure.
9	Improve – 40 metre Bascule Bridge barrier and walls	A new option with a wider barrier was introduced for the 2022 OBC to reduce risk of ship impacts (and associated costs and environmental effects of repairs) compared to the 28m barrier in Option 5. Improves SoP to the majority of the study area – Mutford lock end remains at risk of tidal flooding from the Broads' system.	Shortlisted. As a tidal barrier option seaward of the Bascule Bridge. Due to similarity with Option 5, this is considered to have similar levels of public approval. The increased barrier width also contributes to greater resilience and is less restrictive on future development of the Lake Lothing entrance channel.

Key findings

The economic appraisal was undertaken in line with the requirements of the Flood and Coastal Erosion Risk Management – Appraisal Guidance (FCRM-AG). The key findings of the economic appraisal are summarised as follows:

- The do-minimum option delivers very little benefit and does not meet LFRMP objectives and was therefore rejected as a viable option.
- Options 3a to 3d (flood walls only) do not achieve benefit cost ratios of greater than 1 and were rejected from further consideration under the decision rule.
- Options 5a to 5d (28m Bascule Bridge Barrier and walls) considered differing standards of protection from 1in75 year (1.33% AEP) to 1in500 year (0.2% AEP), all of these option permutations have Benefit Cost Ratios of 1.2.
- Option 5c (28m Bascule Bridge Barrier and walls 1in200 year (0.5% AEP) has been selected as the national economically preferred option with highest NSPV.

ESC have selected a Local choice 40m tidal barrier option (9LCC or 9LCU) as the locally preferred option. This option has been selected as it brings additional benefits that are not fully captured within the economic appraisal, including:

- Enabling economic growth and adaptive pathways for future development of the port and Lowestoft,

- Increasing the resilience and reliability of the barrier.
- Introducing a significant efficiency and acceleration of delivering the barrier.

The local choice options both have BCRs of less than 1 at 0.9 with a NSPV of £21m for option 9LCC and £15m for Option 9LCU

The main technical aspects that need further consideration as the project progresses towards delivering the tidal barrier are summarised as follows:

- Continued consultation will take place to consider the impact of the tidal defence system (construction and operational) on local businesses and navigation links. This will be fully considered as part of the TWA0 application.

The key findings of the environmental assessment presented in the LFRMP Environment Report (SOC stage) and PEIR are summarised as follows:

- The Do-nothing and Do-minimum options do not support most of the SEA objectives and result in adverse and neutral effects on the geology and landscape SEA objectives.
- Option 5 (28 m Bascule Bridge barrier and walls) is supportive of most SEA objectives and is the environmentally preferred option at this stage. Option 9 is considered to be broadly similar to Option 5 (40 m Bascule Bridge barrier and walls).in terms of potential environmental impact
- An EIA will be required for the Tidal Barrier and is currently being developed.

The Habitats regulation assessment (HRA) undertaken confirmed that the preferred option would have no likely significant effect on European sites, Natural England have been consulted and agree with these findings. Potential impacts on the works on harbour porpoise have been scoped in for further consideration in connection with noise and vibration associated with delivering the tidal works. The Water Framework Directive (WFD) assessment concluded that preferred option is compliant with the WFD.

Preferred way forward

The option appraisal identified that the nationally economically preferred option for reducing the risk of tidal flooding to Lowestoft is Option 5c – 28m Bascule bridge barrier with tidal walls with a 1 in 200 (0.5%) AEP standard of protection. However, to deliver an increased level of resilience and lessen restrictions on potential future development as mentioned in the key findings above, a Local Choice option (Option 9 – 40m Bascule bridge barrier with tidal walls with a 1 in 200 (0.5%) AEP standard of protection) has been selected as the preferred option for managing the risk of tidal flooding in Lowestoft.

1.5. Commercial case

Procurement strategy

The technical delivery of the LFRMP OBC has been procured through the SCAPE Procure framework by ESC who are acting as the lead partner in the LFRMP. This procurement route enables the continued delivery of projects arising from this OBC without the need for any further procurement of technical services by ESC.

ESC have procured a number of other technical services utilising the Scape Perfect Circle framework. These services include technical advisor, ECC project management, site supervision and cost management support.

Key contractual terms and risk allocation

The key commercial and legal agreements that need to be progressed to enable the development of the preferred options for the management of tidal and pluvial fluvial flood risk identified in this OBC are summarised as follows:

- Landowner agreements;
- Transport and Works Act Order (TWAO) application and associated agreements;
- SCAPE risk share arrangements;
- Risk share agreements with partnership funders.

During the development of the OBC work has commenced to develop and put in place a number of legal agreements with key stakeholders and landowners, these include a number of tripartite agreements where required. Legal agreements are required to following key areas:

Tidal works

- Access for construction and future operation and maintenance;
- Operation and maintenance agreements;
- Rights to site structures on privately owned land;
- Storage of demountable barrier and associated;
- Funding agreements.

A number of the legal agreements relating to the tidal walls are already in place, with others in an advances state of development.

Efficiencies and commercial arrangements

Project efficiency targets are aligned to the requirements of the partner organisations, the SCAPE framework and funding sources. An efficiency register (CERT) has been developed for the LFRMP.

1.6. Financial case

Summary of financial appraisal

Table 1.4 summarises the whole life cash cost spend profile for the tidal preferred option. The costs presented include 95% risk and adjusted optimism bias allowances. Option costs have been developed through detailed contractor costing exercises and use of the EA's whole life costing tool where appropriate. Costs are based on detailed designs for the preferred Local Choices option. It should be noted that a small element of the future O&M costs associated with completion of the tidal walls, forecast for late 2023 is not currently shown in the table.

Table 1.4 Preferred option whole life spend profile (cash)

Annualised spend profile (£k cash)	Sunk Pre 21-22	Yr 0 22 - 23	Yr 1 23 - 24	Yr 2 24 - 25	Yr 3 25 - 26	Yr 4 26 - 27	Yr 5 27 - 28	Yr 6 28 -29	Yr 7 + 29-30	Yr 8 + 30-31	Total
Stage 1 - Tidal Walls											
Authority staff costs - Stage 1	2,027	1,374									3,401
External fees - Stage 1											0
Construction costs - Stage 1 Tidal Walls		10,413									10,413
Risk contingency (95%ile) - Stage 1		458									458
Optimism Bias - Stage 1		1,882									1,882
Inflation - Stage 1		0									0

Stage 1 Subtotal	2,027	14,127	0	0	0	0	0	0	0	0	16,154
Stage 2 - Tidal Barrier											
Authority staff costs - Stage 2		1,639	397	397	397	397	397	397	397		4,419
External fees - Stage 2 (including TWAO)			1,217	1,217	977	977	977	977	977		7,316
Construction costs - Stage 2 Tidal Barrier					15,018	15,018	15,018	15,018	15,018		75,092
Risk contingency (95%ile) - Stage 2		847	847	847	10,166	10,166	10,166	10,166	10,166		53,371
Optimism Bias - Stage 2					751	751	751	751	751		3,755
Inflation - Stage 2		0	20	40	1,260	1,702	2,154	2,618	3,093		10,887
Stage 2 subtotal	0	2,486	2,481	2,501	28,570	29,011	29,463	29,927	30,402	0	154,840
Stage 1&2 sub total	2,027	16,613	2,481	2,501	28,570	29,011	29,463	29,927	30,402	0	170,995
O & M and Future Costs											
O&M and other future costs										59,951	59,951
Optimism Bias - future works										17,985	17,985
Future costs sub total	0	0	0	0	0	0	0	0	0	77,937	77,937
Total costs	2,027	16,613	2,481	2,501	28,570	29,011	29,463	29,927	30,402	77,937	248,932

Funding sources

Delivery of the LFRMP objectives requires further partnership funding contributions. The LFRMP Funding Strategy document (Appendix N1) sets out the planned approach to ensure sufficient funding is available for the project. Multiple sources have already been secured, which has enabled the progression of the project with funding secured / allocated for the project from the following organisations:

- East Suffolk Council
- Suffolk County Council
- Regional Flood and Coastal Committee (Local Levy)
- Environment Agency (administering FCERM-GiA and COVID cost impact funding)
- New Anglia Local Enterprise Partnership
- [HM Government \(Green Recovery Fund / 'Summer Economic Funding', 'Other Government Funding'\)](#).
- Department for Education

The funding strategy had secured funding to enable the delivery of the Stage 1 tidal and pluvial fluvial elements of the LFRMP and the 28m barrier option. However, the 40m 'local choice' option and the cost uplift caused by Brexit impacts, inflation, the COVID-19 pandemic and extended landowner negotiations means that further funding is required to deliver the Stage 2 element (tidal barrier). Table 1.5 presents a summary of the funding status of each stage of the LFRMP, identifying funding secured and where further partnership funding is required.

Table 1.5 Funding summary table

Annualised funding needs (£k)	Pre 21-22 (sunk)	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	Total
Stage 1 – Tidal Walls										
New Anglia Local Enterprise Partnership (LEP)	10,000	-	-	-	-	-	-	-	-	10,000
East Suffolk Council	-	-	-	-	-	-	-	-	-	-
Green Recovery Fund	-	7,795	-	-	-	-	-	-	-	7,795
OGD Funding	-	-	1,400	-	-	-	-	-	-	1,400
COVID impacts funding	-	1,198	-	-	-	-	-	-	-	1,198
Stage 1 Tidal Walls - Identified funding	10,000	8,993	1,400	-	-	-	-	-	-	20,393
Partnership Funding Required	-	-	-	-	-	-	-	-	-	-
Stage 1 Tidal Walls- Total funding	10,000	8,993	1,400	-	-	-	-	-	-	20,393
Stage 1 – Pluvial Fluvial										
FCERM-GiA	1,492	-	-	-	-	-	-	-	-	1,492
Suffolk County Council (SCC)	3,000	-	-	-	-	-	-	-	-	3,000
Local Levy via RFCC	1,751	-	-	-	-	-	-	-	-	1,751
COVID impacts funding	385	-	-	-	-	-	-	-	-	385
Stage 1 Pluvial fluvial - Identified funding	6,628	-	-	-	-	-	-	-	-	6,628
Partnership Funding Required	-	-	-	-	-	-	-	-	-	-
Stage 1 Pluvial Fluvial - Total funding	6,628	-	-	-	-	-	-	-	-	6,628
Stage 2 – Tidal Barrier										
FCERM-GiA	-	-	-	-	-	4,186	-	-	-	4,186
Local Levy via RFCC	-	-	1,589	-	-	-	-	-	-	1,589
East Suffolk Council	-	-	250	250	250	250	-	-	-	1,000
Suffolk County Council (SCC)	-	-	-	-	-	-	-	-	-	-
Department for Education	-	-	-	-	-	-	200	-	-	200
Green Recovery Fund	-	2,500	656	2,266	28,494	1,775	-	-	-	35,691
Stage 2 Tidal Barrier - Identified funding	-	2,500	2,495	2,516	28,744	6,211	200	-	-	42,666
Partnership Funding Required	-	-	-	-	-	22,974	29,437	30,101	30,577	113,089
Stage 2 Tidal Barrier - Total funding	-	2,500	2,495	2,516	28,744	29,185	29,637	30,101	30,577	155,755

The funding requirements above are correct at the time of initial submission of the OBC (October 2022). Please note that the extract from the funding strategy above includes an allowance for construction costs associated with the Hamilton Road flood wall which is excluded from economic assessment included within this OBC. The construction costs for this flood wall were funded through the New Anglia LEP to provide flood risk reduction to the PowerPark enterprise zone with benefits attributed economic growth in the LEP business case (Appendix N2). Whilst the construction of the Hamilton Road flood wall falls within the scope of the LFRMP it has been removed from the FCERM economic assessment due to a disproportionate impact of the benefit cost ratio of all options. The limited FCERM benefits associated with this flood wall are separate and distinct from the FCERM benefits associated with the remainder of the tidal walls and barrier, it was therefore considered appropriate to remove this from the economic assessment.

Overall affordability

The delivery of the LFRMP is considered to be affordable **subject the securing additional partnership contributions** to support Stage Two of the project as set out in Table 1.5. The project team continues to develop the detail of the tidal barrier and this combined with detailed consultation with key stakeholders will enable the costs to be refined with the aim of reducing the funding gap. It is generally considered that the costs presented for delivering a tidal barrier for Lowestoft are comparable with other tidal barrier projects within the UK.

The project has applied a robust risk management approach to ensure that sufficient budget is allocated / funding is secured to enable delivery of the Local Choices

preferred option. Table 1.6 summarises the expenditure profile for delivering both stages of the [tidal flood risk management elements of the LFRMP](#).

Table 1.6– Project initial capital spend profile (Cash)

Cash Cost (£k) (inc risk+inflation)	Sunk Pre 21-22	Yr 0 22 - 23	Yr 1 23 - 24	Yr 2 24 - 25	Yr 3 25 - 26	Yr 4 26 - 27	Yr 5 27 - 28	Yr 6 28 - 29	Yr 7 29 - 30	Total
Stage 1 - Tidal walls	2,027	11,787								13,814
Stage 1 - Risk	0	2,340								2,340
Stage 1 - Inflation	0	0								0
Stage 2 - tidal barrier	0	1,639	1,614	1,614	16,392	16,392	16,392	16,392	16,392	86,827
Stage 2 - Risk	0	847	847	847	10,917	10,917	10,917	10,917	10,917	57,126
Stage 2 - Inflation	0	0	20	40	1,260	1,702	2,154	2,618	3,093	10,887
Total	2,027	16,613	2,481	2,501	28,570	29,011	29,463	29,927	30,402	170,995

1.7. Management case

Project management

The development of this OBC is being led by ESC as a Maritime Authority with responsibilities under the Coast Protection Act 1949 and their permissive powers under Section 14A of the Land Drainage Act (1991) as amended by the Flood & Water Management Act (2010). Support on the fluvial pluvial elements of the project will be provided by SCC as Lead Local Flood Authority under the Flood and Water Management Act 2010. ESC are supported by a number of partners and specialist suppliers in the delivery of this project. The Project is supported by four key groups:

- Project Board
- Strategic Steering Group
- Project Delivery Group
- Key Stakeholder Group

ESC will lead on the future development of this OBC with respect to the Tidal Barrier. SCC will continue provide support and resource for the delivery of the pluvial fluvial preferred option. Table 1.6 provides an overview of key project milestones.

Table 1.6 Key project milestones for Master programme with an unconstrained delivery approach (Actuals in Bold)

Activity	Date (DD/MM/YY)	Comment
SOC recommended for approved	04/05/17	By LPRG and submitted to ESC & SCC cabinets for information
Approval to proceed to OBC & TWAO	06/06/17	By ESC Cabinet
Tidal walls planning application submitted	10/07/19	By ESC to ESC Planning department
2018 OBC recommended for technical approval (tidal)	11/01/19	By LPRG followed by ESC cabinets
Tidal walls planning application granted	06/05/20	By ESC Planning department
TWAO - Issue draft Order to DEFRA	09/05/23	By ESC to DEFRA
TWAO - Order made	07/06/24	Assumes written representations only

Activity	Date (DD/MM/YY)	Comment
Tidal works		
Tidal walls work to start on site	08/04/21	Tidal wall construction commences in advance of tidal barrier, subject to planning permission
Tidal walls work substantially completed by	11/07/23	Excluding barrier tie in works
Tidal barrier work to start on site	01/07/24	Subject to TWAO
Tidal barrier work completed	31/03/27	Assumes 40m barrier –unconstrained construction approach

Benefits realisation

Tidal flood risk benefits are planned for realisation in 2028 when the tidal barrier works are completed, this will include 226 OM2's.

Pluvial fluvial benefits were realised in 2021, with 120 of the planned 264 OM2's delivered for PLR measures due to a lower than anticipated uptake from property owners and 7 OM2's for the fluvial wall works.

Risk management

The key risks associated with delivery of the project objectives and the mitigation measures being applied to manage these risks are summarised in Table 1.7.

Table 1.7 Key project risks

	Key Risks	Risk VH/H/M /L/VL	Owner	Mitigation	Risk Post mitigation VH/H/M/L/ VL
1	TWAO application / Legal agreements – Objections to the TWAO / contents of required legal agreements may delay the tidal barrier.	H	ESC	Extensive consultation with impacted parties is being and will continue to be undertaken prior to submission of the applications and during the development of legal agreements.	M
2	Unforeseen ground conditions – Extensive GI has been completed to inform the design and construction of the tidal flood walls with initial GI undertaken for the tidal barrier.	H	ESC	Further GI at barrier location will be undertaken to confirm design assumptions, risk allowance is included for a level of risk relating to ground conditions.	M
3	Funding – high level of additional partnership funding required to progress Stage 2 of project (tidal barrier).	VH	ESC	Funding programme in place – plan in place to source additional funding and provide regular formal updates to funders and stakeholders. Staged approach to delivery, risk of not completing second stage of tidal project	H
4	Inability to agree land access with key stakeholders	M	ESC	Include requirements as part of early consultation / development of legal agreements. Progress heads of terms and continue with TWAO development.	L
5	Delays in discharging TWAO consent conditions	L	ESC	Ensure conditions are included in programme and scope of works. Early liaison with stakeholders to reduce the risk of unknown conditions.	VL
6	Inflation – current levels of inflation result in increased delivery costs.	VH	ESC	Monitor inflationary pressures – work with supply chain to deliver efficiency. Include an allowance for a reasonable level of inflation as risk. Consider recommendations of Environment Agency guidance on managing cost uncertainty.	H

Quantitative risk registers have been developed by the project team including the Early Supplier Engagement Contractor and applied with residual optimism bias allowances

to inform the risk budget for the preferred options in line with current DEFRA/EA risk management guidance.

Assurance, approval and post project evaluation

Assurance of this OBC will be undertaken through the EA's Large Project Review Group (LPRG) following review and recommendation of the Project Board to proceed with document submission. Following a recommendation by LPRG to approve the OBC it will be submitted to the ESC cabinet for information.

A further OBC submission will be made to LPRG in relation to the Stage 2 tidal barrier element of the LFRMP for further assurance once full funding has been secured.

Post project assurance will be undertaken in line with the requirements of ESC and any additional requirements associated with the project funding sources.

1.8. Recommendation

It is recommended that this 2022 update to the OBC is given technical approval as the basis for delivery of Stage Two of the tidal elements of the Lowestoft FRMP incorporating the tidal flood walls and Local Choice tidal barrier elements. As there is a funding gap its recognised that the OBC will need to be resubmitted for financial assurance when the required funding has been secured. In the interim, this means that technically no funding related to the walls or barrier can be drawn down beyond studies related to the OBC. Guidance from LPRG is requested on these matters.

It is ESC's intention to claim FCERM-GIA funding towards costs incurred in developing studies relating to this and future updates of the OBC document as detailed in the recently submitted FCERM2 form and supporting BCUR document.

A further update to this OBC will be submitted for financial approval on securing the required funding to deliver the tidal Stage Two works with the aim of securing and releasing the FCERM-GIA funding attributed to both the Stage One and Stage Two tidal works.

The total estimated sum for approval for the overall 2022 OBC is £171.9m (cash cost), which includes a risk contingency of £54.7m and £10.9m inflation allowance over the anticipated construction period. The OBC Stage Two anticipated FCERM-GiA funding is £9.5m towards the tidal works. The costs for approval are based upon the local choices option with seasonally constrained delivery, the GIA funding allocation is based upon the nationally economically preferred option.

2. The strategic case

2.1. Introduction

This document is an OBC presenting the business case for the tidal flood defence elements of an integrated pluvial, fluvial and tidal flood scheme for the town of Lowestoft. This OBC is refreshing the information presented in the LFRMP OBC 2018 notably - the tidal defence and a 28m mitre gate barrier option which had technical approval from EA LPRG in 2018 but did not have financial approval at the time due to funding uncertainty.

This OBC will highlight progress made on the pluvial and fluvial aspects of the scheme which have now been delivered in Lowestoft. The OBC will demonstrate the progress made to date on the tidal wall delivery and set out the case for a new 'local choice' 40m mitre gate tidal barrier to complete the integrated flood risk plan set out in the previous OBC by East Suffolk Council in 2018.

The completed LFRMP scheme will reduce the risk of flooding to over 1085 families and 825 businesses for generations who are currently completely exposed to flooding from the sea, rivers and rain with no formal flood defence in place. The LFRMP will also significantly reduce the risk of flooding to key infrastructure including A roads, bridges, the rail network, water treatment, IT and energy assets.

The total project will enable 10,900 jobs and £499m of GVA per year to be resilient and support the generation of 3,500 additional direct jobs locally and 8,000 indirect and induced jobs nationally plus an additional £195m of GVA in the area per year.

This OBC will set out the costs and benefits of the 40m barrier option and demonstrate the unique challenges facing delivery of this solution in Lowestoft in relation to maintaining an operational port facility. The OBC will highlight the significant work that has already been done to engage key stakeholders to support the Transport and Works Act Order process along with the opportunity to accelerate the barrier project to align with wider economic opportunities with ABP ports and EDF energy, reducing construction, programme and costs.

This OBC shows that whilst we have a technically viable and cost beneficial 28m barrier solution we have needed to pursue a wider barrier option to maintain the operational port entrance to deliver wider stakeholder needs. This decision was agreed by the local ESC Members and wider LFRMP Project Board in October 2021 and shared with EA colleagues and some LPRG assurers in December 2021.

The cost of the 'local choice' option at £171M (with OB and Risk, excluding O&M) is comparable with similar recent barrier projects around the UK. However, in this case there is a greater cost certainty due to the stage we are at in barrier design at this point in OBC submission. The 'local choice' option is not cost beneficial under current Treasury rules. It is, however the only workable option that will deliver flood risk reduction to complete the integrated flood scheme for Lowestoft and is the also agreed in principle with the key landowner stakeholders, including ABP, allowing this project to progress at an accelerated rate from April 2024 for delivery in 2027.

The economic opportunities are set against the challenges of establishing Outcome Measures that meet Treasury Guidance for FDGIA despite the project contributing to national outcomes of six different Government departments and support the national objectives of levelling up deprived places, contributing to more resilient places, and supporting the green energy economy and carbon reduction targets by enabling offshore wind and nuclear delivery programmes.

This project has the full support of the Project Board, ESC Members and the local MP. The project has been fully discussed with EA Area, LPRG and National colleagues and the approach taken to date has been progressed with their full involvement and support.

The technical solution for Lowestoft is therefore to progress a 40m mitre gate barrier option under an accelerated programme as this is the only solution available from the long and short list that meets the needs of cross-government outcomes and supports the local community and business of Lowestoft. However, the funding required for this scheme is currently not available due to inflationary pressures impacting increased cost of suppliers, material and resources.

Location

Lowestoft is a major seaside town located on the north-east coast of Suffolk at the UK's most easterly point. Lowestoft has a population of approximately 57,000 residing in some 27,000 residential properties. (Lowestoft Town Profile, ESC 2014). Lowestoft is a town of multiple deprivation. Over 35% of the population are either unskilled, in casual work or unemployed¹ and over 25% of the population is over 65².

The town has become increasingly vulnerable to flooding from all sources for decades. Heavy rainfall events led to significant fluvial and pluvial flooding in 2015 and flooded 33 homes in the Aldwyck Way and Velda Close area of the town. Tidal flooding to 400 homes occurred in the East Coast surge of 1953 and this was replicated again in 2013 tidal surge when 158 residential and 233 commercial properties flooded in Lowestoft and Oulton Broad. Key transportation links such as the railway and A12 also flooded impacting on flood response, recovery and clean up. The town currently relies on a temporary barrier system which is deployed when flood forecasting triggers a surge warning. Defences were most recently deployed in 2017 when severe flood warnings were triggered and a 2.1m surge was predicted. Thankfully the surge diminished due to changing weather patterns. The town currently relies on the temporary barrier solution until a more permanent solution can be delivered.

Table 2.1 presents a summary of the sources of flooding, flood pathways, receptors and future climate change impacts directly considered in this OBC.

Table 2.1 Summary of existing (2018) flood risk

Source	Pathway	Receptors	Climate change impacts
Tidal – North Sea	East: Outer Harbour and into Lake Lothing. Flooding occurs when tide level overtops existing quaysides / through existing drainage network. West: Mutford lock via the Broads' system from Great Yarmouth	Existing residential and commercial properties. Future development areas. Local infrastructure including: roads (A12/A47 – Bascule Bridge), telecoms, electricity distribution, gas distribution, surface and foul water drainage systems.	Sea level rise will increase the impact and frequency of tidal flooding. Increased storminess will increase tidal surge events duration and intensity. .
Pluvial fluvial	Flash flooding from intense rainfall events. Capacity of existing drainage systems resulting in flooding where surface water cannot drain away or banks of drainage channels (including the Kirkley Stream) are overtopped.	Existing residential and commercial properties. Future development areas. Local infrastructure including: roads, telecoms, electricity distribution, surface and foul water drainage systems.	Increased frequency and duration of high intensity rainfall events.

¹ Office of National Statistics (ONS) 2021 Census

² Age group breakdown estimates - Lowestoft 2016, Suffolk Observatory – ONS data.

Lowestoft is particularly susceptible to flooding from tidal surges due to the small normal tidal range compared to other locations along the east coast of England. Lowestoft has a tidal range of approximately 2m. This is low when compared to locations along the outer Thames and Humber estuaries which have tidal ranges in excess of 5m. A consequence of this low tidal range is that a significant tidal surge (<2m) at Lowestoft could cause flooding at almost any state of the tide whereas at locations with a greater tidal range where the timing of the surge event compared to high water has greater influence and reduces the likelihood and/or severity of flooding from the surge.

Lowestoft's open coastal frontage is well defended to the north and south and management of the defences is set out in the Gorleston to Lowestoft Strategy with Hold the Line policies identified in the recent Suffolk SMP Refresh (SMP7) and Catchment Flood management Plan (Appendix F10 and F24 respectively) being viable for the future management of Lowestoft and the coast. An overlap in benefits across the open coast frontage and within the central Lowestoft harbour area have been considered and outcome measures have been reasonably apportioned in line with current appraisal guidance and the approach set out in the Strategic Approach document (Appendix M).

The need

Due to historical developments around the inner harbour and fluctuations in the success of the port industry in the town over time – central Lowestoft has remained 'open' to the tide with no formal defences in place to manage tidal flood risk. Discussions with national EA colleagues and wider coastal local authority networks suggest Lowestoft is the only coastal town of its size in the UK to remain undefended to this increasing risk.

The town is uniquely placed to support the offshore wind energy sector and new businesses are moving into Lowestoft to grow operations and maintenance roles in the sector. The latest Government announcements for the new nuclear power station – Sizewell C- to be given the go-ahead means Lowestoft will also now support marine-based operations for the delivery of this new national infrastructure. New housing and businesses premises are needed to support this new 'east coast energy hub' and Homes England have also visited the town recently and want to support Government investment in the Harbour and Oulton Broad areas.

The lack of defences as detailed in the strategic approach documents (Appendix M) are evidenced as supressing the ability of Lowestoft to develop and grow and are not allowing the deprived areas of the town to 'level up' as per wider Government outcomes. The lack of certainty about tidal flood risk is holding Lowestoft back and allowing social deprivation to remain a key issue for the town. As an example - women in the Harbour & Normanston Ward area of Lowestoft will live 10 years less than other women in the same demographic in the rest of East Suffolk³.

Due to the historical prevalence of the port at the heart of Lowestoft – the lack of development of residential and business properties in the port area means low property numbers and therefore low OM2 values. The significant OM1 values are not valued in the same way under Treasury guidance and therefore a flood defence scheme has never gained traction for the town.

To deal with these issues, East Suffolk Council submitted an Outline Business Case for an integrated flood management scheme for Lowestoft in 2018. The OBC outlined a number of measures to reduce pluvial and fluvial flood risk in the Kirkley area and south of the harbour using both physical defences, new pumping regime and property level protection solutions in partnership with Suffolk County Council and

³ Source: ONS, 2015-2019 data. Accessed via localhealth.org.uk – featured in Lowestoft Community Partnership Profile - 2022 update

Anglian Water. In addition, the OBC recommended a phased tidal wall and tidal barrier project to give the town integrated flood risk resilience to 0.5% AEP.

The OBC was given technical approval and financial approval was granted for fluvial and pluvial works to progress due to the availability of partnership funding from Suffolk County Council and the Anglian Local Enterprise Partnership with Anglian Water. However, as further work on the design of a 28 m tidal barrier and adjoining tidal walls was needed the tidal works were only given technical assurance whilst funds were found.

As well as the FCERM benefits, the provision of tidal defences and improvements to the management of the pluvial and fluvial flood risk infrastructure will increase business confidence for investment in Lowestoft which is critical. An allocation of £10M NALEP funding has already been made to the LFRMP scheme and further discussions with the NALEP are in train. In addition, local businesses that would benefit from the proposed works have also made commitments to provide both benefits and funding 'in kind' towards the project. Project funding sources are discussed further in Section 5.2.

ESC through the Scape framework contracted Balfour Beatty to lead the design and build of the integrated defence scheme with Jacobs as designers. The project team successfully delivered the pluvial and fluvial elements of the project in 2021/22. We are also using the National Themes and Outcome Measures tool to ensure the project is delivering important local legacy and social value outcomes that directly benefit local people and place.

Construction of tidal wall works have commenced along Hamilton Road (completed 2022) and Waveney Road (still in progress) with funding that was not contingent on the financial approval of the 2018 OBC. The second submission of this 2022 OBC is aimed at securing the technical approval for the revised options and the refreshed appraisal.

This 2022 OBC sets out an updated business case for the investment required and reviews the strategic context of the tidal options, including a review of earlier long and short list options to ensure the barrier is solution is still the right solution. This OBC has been developed using the guidance set out in the FCERM-AG (Environment Agency 2021) and Treasury Green Book Guidance (HMT, 2020 with 2021 amendments). Due the fact that the scheme is already well underway making it different to a standard OBC, extensive consultation has taken place between the ESC and EA at both Area and National levels to inform this OBC and the development of the overall project.

Impacts on the local economy

The impact of tidal flooding on the local economy is significant. A port like Lowestoft can only exist in a coastal location arguably in a flood risk zone. The port is one of only a few east coast ports that are in a position geographically to support offshore wind energy development and contribute to our national economy and wider government outcomes for greener energy supplies and carbon neutrality. The damage and disruption that caused by flooding- like the 2013 surge -coupled with the lack of confidence for investors in the town that flood risk brings is stymying local growth. This in turn affects the local population due to reduced employment opportunities and diminishes the services available to them as taxable returns to ESC to offer such services are also limited. Whilst these impacts do not contribute to the amount of FCERM-GIA that is available to the LFRMP, it is a key measure for the NALEP business case who recognise the value of these benefits.

The lack of certainty on flood risk is preventing development opportunities at key sites in and around the Lake Lothing area of the town making land uneconomic for private development which is needed to stimulate growth and provide much needed housing for local people. Homes for England have recently visited Lowestoft and are keen to work with us on delivering improved housing offers in Lowestoft to meet local need and deliver their housing requirements nationally. This housing will also fuel the economic regeneration of large parts at the centre of the town. Whilst some of this housing will be in the floodplain it is inevitable that development in seaside towns at risk of flooding is needed if coastal seaside towns are to remain viable. This is clearly set out in the Government 'Regeneration of Seaside Towns report'⁴ which acknowledges that without resilient coastal defences we cannot have resilient places.

The UK relies on a number of key coastal towns for nationally important economic outcomes as gateways to the marine and offshore industries and arguably we cannot meet the needs of the offshore and marine industries without coastal towns – arguably all are at risk of coastal flooding due to their proximity to the coast- we therefore require them to become more resilient and the LFRMP project aims to do that for Lowestoft. Without this scheme the only alternative is to manage flood risk though the existing temporary barriers until such time they are overwhelmed. Our only other option is to not proceed with a barrier project and ESC is not prepared to effectively 'decommission' Lowestoft as a town, nor is there any precedent to do so given the size and scale of the place and the opportunities it presents to local and national outcomes.

The Lowestoft Flood Risk: Economic Footprint and Impact Report⁵ (Appendix F3) assessed the potential impact of flood risk on Lowestoft's current and future economic footprint. The study concluded that for a tidal event with a 1in200yr return period (0.5% AEP which is similar to the 2013 surge event) 30% of Lowestoft's existing Gross Value Added (GVA) is at risk of flooding and this rises to 62% with climate change if it remains undefended. This is discussed further in Section 3. Including the notional FDGiA allocation, the project has secured commitments for £69,266.893 of funding to date. £62,176,439 is from partnership funding sources and includes;

- £10M from NALEP Growth deal
- £43,486,000 from HMG Green Recovery Fund

The GRF contribution was the largest capital allocation made nationally from the fund. Both allocations highlight the significant role the LFRMP has to play in supporting and enabling economic growth locally and nationally.

As evidenced in Appendix N1, a comprehensive funding strategy has been developed but a fully resourced plan is no longer in place due to the need for the 'Local Choice' barrier option and the rising inflationary cost of materials, supplies and resources that has happened globally in the last 2 years.

As the majority of the partnership funding requirement has related to the cost of delivering the tidal barrier while enabling the port to remain fully operational – the focus of our funding strategy now is to secure funds from other national sources by demonstrating the value of the scheme to at least 6 Government departments and their national outcomes. We are still approaching local sources based on commercial development enabled by the project including contributions from infrastructure providers due to the significant reduction in risk to their assets and customers. In the last 6 months we have worked very closely with Homes England, DHLUC and BEIS

⁴ Select Committee on Regenerating Seaside Towns and Communities - The future of seaside towns: <https://publications.parliament.uk/pa/ld201719/ldselect/ldseaside/320/32002.htm>

⁵ Lowestoft Flood Risk: Economic Footprint and Impact Report, MML, May 2022.

and sought cross-government support through political discussions via our MP and EA Area team involvement with government officials. Working with ABP's LEEF (Lowestoft Eastern Energy Facility) project team we have developed a unique programme opportunity to support their outer harbour expansion to allow greater green energy growth with wind and marine sector and meet the marine transportation needs of the national nuclear infrastructure project at Sizewell C to remove road transport pressures and reduce carbon through that route (in line with Government national policy).

The port is therefore poised for a significant economic shift and ABP have granted us full access to the navigational channel for 2 years if we can accelerate the LFRMP barrier project to commence in April 2024. Further cost reductions will likely be made as a result of this unconstrained access to the channel to build the barrier infrastructure both through the reduced programme timing and oncosts as well as the opportunity to buy materials earlier. This opportunity is time limited as the LEEF project will progress from 2024 regardless of the LFRMP.

The fast moving nature of this opportunity to build the barrier and support the LEEF project and EDF in the delivery of SZC is therefore presenting the LFRMP project team with a unique opportunity to reduce flood risk to the town earlier and make cost savings however we cannot commit to this accelerated programme fully without closing the funding gap of £113M and in parallel having greater national agencies support in parallel from national Government departments to maximise funding opportunities that may arise from the wider infrastructure delivery.

ESC has already committed £1M contribution and significant resource to the project and is also under-writing circa £50M to insure the schemes delivery with Government Actuaries Department and Treasury. The ESC under-writing is because Coastal Protection Authorities are not underwritten for capital schemes in the same way as Environment Agency. It is ESC's intention to fund the operation and maintenance costs for the tidal barrier and tidal walls. In line with ESC's procedures a commitment of this level requires approval from by the Full Council. An update on expected O&M costs is being included in project briefing paper that will be presented to the Full Council on the 23rd November 2023. At an appropriate time, ESC will be taking the substantial operation and maintenance costs to Full Council to secure the required approval for the funding required for post construction expenditure.

2.2. Business strategies

In setting out the strategic approach (Lowestoft FRMP Strategic Approach, Appendix M) for the management of flood risk in Lowestoft the SOC drew on a number of existing plans and strategies to make an assessment of any overlap or conflict with the LFRMP. Where an overlap between the benefits areas was identified, a fair split of benefits has been proposed to ensure that the double counting of benefits/outcomes does not take place. A review of this assessment was undertaken as part of this OBC which concluded that this remained a valid approach.

The following plans and strategies were considered:

- Lowestoft Transport Infrastructure Prospectus (ESC, 2013)
- Broadland Rivers Catchment Flood Management Plan (CFMP, 2009)
- Anglian River Basin Flood Risk Management Plan (EA, 2015)
- Gorleston to Lowestoft Coastal Strategy (ESC/ Great Yarmouth Borough Council (GYBC), 2017)
- Kelling Hard to Lowestoft Ness Shoreline Management Plan (SMP) (adopted 2012)

- Suffolk SMP2 Sub-cell 3c (2010)
- A Flood Management High Level Review for the Broads Climate Partnership (Broads Authority, 2016)
- Lowestoft FRMP SOC (ESC, 2017)
- Lowestoft Fluvial / Pluvial Options Report
- Environment Agency's Norfolk, Suffolk and Essex Coastal Modelling Study ,2018 (Draft outputs)*

*These draft outputs were used to inform the hydraulic modelling used to inform the economic analysis. Whilst this analysis has not been updated for the 2022 OBC, a sensitivity assessment completed was completed using the latest Coastal flood Boundary data set which is further discussed in Section 3.9 and Appendix E1.

This LFRMP and the G2LS consider an area with potentially shared benefits. This overlap has been considered in the Economic Case to ensure that an appropriate split of benefits/OMs is applied to any projects that result from either strategy and that double counting of benefits is avoided. This is considered in detail and recommendations are made in the Lowestoft FRMP Strategic Approach document, Appendix M1.

SCC's proposals for a third road crossing of Lake Lothing have also been considered in terms interactions with flood risk management options and the potential for a combined bridge and flood risk management structure.

The provision of new flood risk management measures forms an integral part of the Lowestoft Infrastructure Prospectus (Appendix F4) which establishes ESC's framework of infrastructure improvements to enable economic growth in Lowestoft.

2.3. Environmental and other considerations

The development of options considered several environmental issues, regulatory requirements, legal and other obligations to be considered and addressed as options are taken forward. The key areas for consideration are as detailed below:

- Transport and Works Act Order (TWAo) – Barrier works within Harbour
- Environmental Permitting Regulations
- Marine Licence requirements
- Planning permission
- Heritage requirements
- Legal agreements – Landowners, tenants, highways and Port Authority
- Other highways agreements
- Environmental impact of options/EIA regulations
- Water Framework Directive
- Utilities diversions/wayleaves
- Habitats Regulations Assessment

Building upon the Strategic Environmental Assessment Environmental report⁶ (included in the PEIR Appendix H1) presented at SOC stage, the following environmental reports have been produced at OBC stage considering the preferred options:

⁶ Lowestoft FRMS - SEA Environmental Report Preferred options, CH2M 2017

- Preliminary Environmental Information Report ⁷
- Habitats Regulation Assessment ⁸
- Water Framework Directive Assessment⁹

The findings of the environmental assessments and associated consultation have been fully incorporated into the evaluation of options as presented in Sections 3 and 4 (tidal and pluvial fluvial economic cases respectively), with the environmental reports produced included in Appendix H1 to H5.

As development of the 40m tidal barrier option (local choice option) continues further environmental studies (EIA) are being undertaken to inform the development of this option and support the TWAO process. These studies are under development and will not be included in this OBC document. Section 3.4 of this OBC has been reviewed to take into account the current understanding of environmental impacts of both the 28m and 40m barrier options.

2.4. Investment objectives

The Lowestoft FRMP investment objectives were initially defined in the SOC and have been reviewed at OBC stage and remain broadly unchanged as presented below:

- To reduce the risk to residential and commercial properties from the combined effects of tidal and pluvial fluvial flooding.
- To reduce costs associated with developing and insuring property within areas of Lowestoft susceptible to flooding.
- Identify the most economically advantageous option in relation to the allocation of funding through FCERM-GiA.
- Provide a minimum standard of protection of 1 in 200 (0.5%) AEP against tidal flooding to residential and commercial areas of Lowestoft, to enable the release of growth funding from the NALEP and other forms of partnership funding.
- Provide businesses with the confidence to grow and invest in areas of the town which are currently not considered suitable for development (planning) due to the risk of tidal flooding.
- Target construction completion of the tidal walls in 2023 and the tidal barrier in 2031 (Local choice 40m barrier option – seasonally constrained delivery).
- The objective for implementation of the pluvial fluvial works was met in 2021.
- Clearly set out the approach to OM and benefits sharing between the sources of flooding (tidal, pluvial, and fluvial) and coastal erosion.

The NALEP business case which is included in Appendix F identified the following additional key project outputs:

- Supporting 10,900 direct jobs and supporting the generation of 3,500 additional direct jobs in the project area.
- Securing GVA for the local economy
- Supporting the future generation of additional GVA within the area.

⁷ Lowestoft FRMS – PEIR, CH2M 2018

⁸ Lowestoft FRMS – Habitat Regulations Assessment, CH2M 2018

⁹ Lowestoft FRMS – Water Framework Directive assessment, CH2M 2018

- Enabling the development of key sites through the alleviation of direct flooding and protection of essential infrastructure.

2.5. Current arrangements

Recent flood events highlighted the need for investment in flood risk management in Lowestoft. They also resulted in significant changes in the approach to managing the current level of risk from flooding (tidal, pluvial and fluvial). The following sections summarise the current situation.

Flood risk management structures

Currently Lowestoft has no completed formal tidal defences. Construction of tidal walls along Hamilton Road (which are common to all tidal options) is currently in progress and is forecast to be fully operational in 2023. An informal tidal defence is also provided in part by the foundation of a security wall along part of the port boundary with the A47. Construction of the remaining tidal walls around the perimeter of the outer harbour are forecast to be completed in 2023.

There are numerous drainage outfalls into Lake Lothing from the private and public drainage network (surface water and foul). The outfalls range in type from directly connected surface water gullies to combined sewer storm overflows. Where outfalls do not have a flap/non-return valve fitted to them, they provide a pathway for tidal flooding of infrastructure and properties. Where flap/non-return valves have been installed, they can only be considered effective if a regular inspection and maintenance regime exists to ensure they function as intended.

Whilst responsibility for these outfalls may lie with private companies and individuals, their impact on the effectiveness of the proposed tidal defence options could be significant and must be managed. Anglian Water has undertaken works (investment of approximately £2.3m) to address flood risk issues associated with their combined sewer and surface water drainage systems which contribute to the overall flood risk in Lowestoft. Further details of these works can be found in the strategic approach document in Appendix M1.

Flood warning

The EA's flood warning system provides forecasts and warnings to relevant authorities and to the general public enabling action to be taken in response to a forecast event.

Local media channels including radio, television, social media and internet news sites are also used to share flood warnings and provide advice/instruction in terms of what action should be taken.

Response to flood warning

When tidal flooding is forecast the response is managed through the multi-agency Suffolk Resilience Forum which includes representation from County and District Councils, Fire Service, Police, Highways England and the EA. The forum is provided with early indications of forecast extents to enable planning to take place prior to the higher confidence warnings issued to the general public.

For a significant tidal flood event affecting Lowestoft such as that experienced in December 2013, resources to respond to the incident need to be pre-positioned in advance of the event to ensure they are in place before transportation routes are affected¹⁰.

The Bascule Bridge (twin span lifting bridge) carries the A47 (trunk road) and is a key transportation route for Lowestoft and the wider region. The bridge remains down during a tidal surge event with any lifting operations suspended prior to the abutment

¹⁰ Lowestoft temporary defences Workshop June 2016 – general discussion point

chambers being flooded. Should the abutment chambers be flooded, the bridge would not be operable until they had been pumped out and the mechanical and electrical equipment used to operate the bridge dried, inspected and repaired as necessary. Any period when the bridge cannot operate has a direct impact on navigation between the inner and outer harbours and can have a significant impact on businesses within the inner harbour that are reliant on access to the North Sea. With regard to highway safety the A47 will remain open for as long as it is safe to do so as assessed by Highways England. However, during a tidal surge event it is more likely that the roads leading up to the Bascule Bridge would become impassable before the bridge deck itself is overwhelmed.

Temporary tidal defences

As an interim measure to reduce the risk/impact of tidal flooding the Regional Flood and Coastal Committee has funded the purchase of approximately 1.4km of temporary defences with the aim of reducing the impact of tidal flooding to key areas of Lowestoft. This investment has been funded through Local Levy with the temporary defence assets to be released to the EA for use elsewhere once a permanent solution is in place for Lowestoft. The temporary defences were purchased in late 2016.

The temporary defences were deployed in response to the forecasting of a significant tidal surge on 13 January 2017. Fortunately, the surge was not as severe as forecast and the water level did not reach the temporary defences. The water level was however very close to the toe of the temporary defences and their presence provided reassurance to project partners and the local community that active steps were being taken to manage tidal flood risk. Photographs of the January 2017 temporary defences deployment are contained within Appendix C2.

As part of the temporary tidal defence system and following the 2013 tidal surge, works have been undertaken to the surface and foul water drainage system to reduce the flood risk from the ingress of tidal water. These works undoubtedly reduced the inflow of tidal water into the drainage system and are likely to have reduced flooding via this route in January 2017.

Whilst the temporary defences provide a level of flood risk reduction they should not be considered as a long-term solution for the management of tidal flood risk in Lowestoft as they cannot provide the required standard or certainty of protection required to achieve the project objectives. Consideration is being given to how to adjust the deployment of temporary defences to account for the new tidal walls once they are complete. This is further discussed in Section 3.3 where temporary defences are considered in the long list of tidal options.

2.6. Pluvial fluvial flood risk

Pluvial Flood risk

Lowestoft is at risk of flooding from pluvial and fluvial flood sources. These risks are now managed through the work – as set out in the 2018 OBC for LFRMP- that was delivered by the project team and finalised in 2021. This has led to 127 homes being better protected against pluvial and fluvial flooding.

2.7. Main benefits

The proposed investments aim to provide the following strategic and operational benefits to Lowestoft:

- Provide a 1 in 200 (0.5%) AEP standard of protection against direct tidal flooding to residential and commercial areas of Lowestoft where economically justified by FCERM-GiA and NALP funding considerations.

- Reduce the risk from tidal, pluvial and fluvial flooding to residential properties and businesses; contributing towards the FCERM six year investment programme targets.
- Reduce the current burden on emergency services and other organisations in responding to flood events in Lowestoft.
- Provide confidence to local businesses and encourage investment and growth in the local economy.
- Allow the development of brownfield sites within the Riverside Local Enterprise Zone and the Powerpark Local Development Order zone, not currently considered suitable for redevelopment due to the risk of tidal flooding in events with a probability of occurrence of less than 1 in 200 (0.5%) AEP.
- Reduce the impact of flooding on local roads and business infrastructure including the strategic A12 / A47 (including the Bascule Bridge), a key trunk road linking Norfolk and Suffolk and telecommunications infrastructure.
- Contribute to the objectives of the Lowestoft Transport Infrastructure Plan (Appendix F4) and the NALP Strategic Economic Plan.
- Support the delivery of the LEEF project
- Support the reduction of land-based transport and subsequent pollution, carbon and disturbance levels through a marine-based transport hub the SZC development for a marine based hub in Lowestoft
- Contributes to the national outcomes of UK Government by delivering across 6 Gov departments including- Defra, BEIS, DHLUC, DfT, Homes England, Dept. Of Work and Pensions.

2.8. Main risks

A summary of key risks to achieving project objectives and mitigation measures are summarised in Table 2.2, pluvial fluvial risks have been removed from this table as these works have been completed.

Quantative risk registers for the preferred option represent the comprehensive project risk assessment for delivering the tidal works and are included in Appendix L.

Table 2.2. Summary of key risks and mitigation measures

Risk Theme	Description	Mitigation measure
Governance and communication	Differing objectives of partner organisations	Implement robust project management procedures and clearly defined responsibilities for partner organisations.
	Poor coordination of inputs from partner organisations.	
	Poor communication and consultation resulting in loss of confidence in the project.	Maintain a comprehensive communications' strategy to ensure continued engagement/ consultation with public, businesses, regulators, approvers, landowners and other stakeholders.
	Project acceleration opportunity	
Legal & Consents	Not securing Transport and Works Act Order (TWAO) and Marine Licence	Early engagement with key stakeholders, seeking to resolve any concerns in advance of TWAO and marine licence applications.
	TWAO programme - Missed opportunity to have unconstrained access to nav channel increasing project costs and lengthening programme and ongoing tidal flood risk to town	National discussions regarding the opportunity to use 'project speed' to accelerate the programme given the significant 'up front works' that have been done with stakeholders and agreements in principle with key landowners

Risk Theme	Description	Mitigation measure
	Not securing legal/access/other landowner agreements.	Early draft Head of Terms to be developed. Continued engagement with landowners and tenants.
	High costs for land purchase & compensation payments.	Develop options, construction methodologies and structure legal agreements with affected parties to minimise the impact of delivering options.
	Securing sufficient partnership funding.	Development of a comprehensive funding strategy and early, proactive, and continuous engagement with potential funders.
Funding	Insufficient risk allowance within the project costs.	Continuous assessment of risk throughout project development following robust risk management processes.
	Construction cost increases (change in scope, materials costs, ground conditions, delays).	Early engagement of specialists (contractors, consultant, barrier designers) to develop robust business case.
	Some planned elements of the project are not delivered impacting on the benefits realised	Tidal and pluvial fluvial elements are considered separately in economic terms. The approach to delivery ensures that FCERM-GiA expended delivers Outcome measures.
Design & Construction	Ground conditions along the defence alignment.	Early ground investigation undertaken to inform design development.
	Service diversions – cost and timing.	Appropriate levels of risk included in project costings. Working closely with utilities to develop options to accommodate existing services.

Strategic importance

The delivery of strategic flood risk management for Lowestoft is a high priority project for ESC and is a key element of delivering the Lowestoft Transport and Infrastructure Prospectus¹¹ which sets out the vision for enabling economic growth in the area through better infrastructure. The planned economic development of Lowestoft would be at risk if this element of infrastructure improvement was not delivered.

The risk of not delivering the preferred option outlined in this OBC needs to be considered in terms of the wider social and economic impact to Lowestoft including the LEEF project, renewables sector and areas identified as being essential to the delivery of other major energy projects of national significance. Whilst not a key driver for the FCERM-GiA funding allocation, a significant element of partnership funding (NALEP) is targeted at securing the future potential for social and economic growth. In addition not progressing the tidal flood risk management measures increases the risk to life for residents in Lowestoft.

As future predicted climate change takes hold in terms of sea level rise and increased storminess, Lowestoft will become increasingly susceptible to the impacts of tidal and pluvial fluvial flooding. As assessed in the Lowestoft Economic Footprint and Impact Report - May 22 (Appendix F3), the impact on the local economy will increase with climate change and limit the future economic growth of Lowestoft.

2.9. Constraints

A number of internally and externally driven constraints need to be considered in the further development of options; these are summarised in the sections below. This list has been refined following further detailed consultation undertaken for the OBC stage as discussed in Section 7.2 and documented in the LFRMP communication plan and engagement summary (Appendix G1). Constraints associated with funding mechanisms are discussed in detail in the Funding Programme Document (Appendix N1) with a summary included in Section 6.6 of this document. The constraints listed

¹¹ <http://www.eastsuffolk.gov.uk/business/regeneration-projects/lowestoft-transport-and-infrastructure-prospectus>

below relate to the delivery of the tidal element of the LFRMP only as the pluvial fluvial works have been completed:

- Availability of and any restrictions associated with partnership funding (NALEP, Local Levy, private sector)
- FCERM-GiA funding availability and requirements
- Environmental
- Geological
- Existing structures and infrastructure
- Port operations / future requirements
- Highways' assets (Bascule Bridge)
- RNLI and Coastguard
- Landowner/tenants' requirements
- Timing of works
- Construction impact on local businesses, community and other organisations

2.10. Dependencies

In order to deliver the project objectives, the following internal and external dependencies have been considered and are being actively managed by the project team (Tidal works only):

- Project approvals/assurance
 - ESC – internal approvals
 - EA – project assurance for FCERM-GiA allocation (LPRG)
- Funding arrangements – NALEP, Partnership, FCERM-GiA and Local Levy
- Legal agreements – Landowners, Port, Highways England, Royal Norfolk and Suffolk Yacht Club
- Licences, consents and orders
 - TWAO – Tidal Barrier
 - Marine Licences – dredging, permanent and temporary works
 - Planning permissions – Tidal flood walls
 - Environmental Permitting Regulations (EPR) consent (formally Flood Defence Consent)
 - Historic/listed building consent
 - Conservation area consent
- Existing coastal defences – considered in the G2LS

3. The tidal FRM economic case

3.1. Introduction

The tidal economic case summarises the approach taken to assess the options considered for the 2022 OBC. This has been further developed to account for:

- Feedback received on the 2018 OBC
- Better cost certainty
- The most recent partnership funding and appraisal guidance published in 2021&2022
- a change in the assessment of certain benefits
- Guidance provided by Environment Agency and LPRG [including the 'Dealing with Inflation' guidance note for RMAs](#).
- Further detailed development and appraisal of the identified options as discussed below.

Key to ensuring an appropriate and proportionate split of benefits between tidal, coastal and pluvial fluvial flood risk is the Strategic Approach Document (Appendix M1) which considers the potential overlap in benefits areas and established the approach applied to avoid double counting of benefits. The Strategic Approach Document was developed at SOC stage and has been reviewed for this 2022 OBC, with assistance from Risk & Policy Analysts Ltd (RPA) in identification of benefits and damages. The document concluded:

- There remains minimal overlap between tidal and pluvial fluvial flood risk sources, with the probability of simultaneous occurrence considered very low.
- The assessment of overlap between the G2LS and the LFRMP remains valid for the coastal cell to the north of Hamilton Docks. [However as discussed below with the removal of the Hamilton Road works from this economic assessment means this is no longer of concern.](#)

In order to maintain a clear distinction between the pluvial fluvial and tidal flood risk management elements, the economic analysis of each is presented separately. This approach ensures clarity of the sources of benefits, the associated funding sources and different duration of benefits.

The economic appraisal and shortlisting of options has been undertaken in line with the requirements of the EA's FCERM-AG, with economic damage calculations undertaken based on guidance within the [Multi Coloured Handbook 2021 \(MCH\)](#).

[Following a review of the benefits provided by elements of the proposed tidal defences. It was identified that the Hamilton Road flood wall contributed relatively little to the FCERM Benefits through the coastal flood cell due to the reduced duration of benefits considered and no residential properties situated within the flood cell. This section of flood wall has now been substantially completed and was funded by the NALEP due to the reduction of flood risk afforded to the PowerPark Local Enterprise Zone. As such the costs and benefits/damages relating to this flood wall have been removed from this appraisal.](#)

[A navigation simulation was undertaken in early 2021 to simulate vessels transiting the proposed 28m tidal barrier. This simulation indicated that there was a risk of vessels making contact with the tidal barrier gates when in the open position which Multi Coloured Handbook 2021 \(MCH\) could increase the frequency of repairs required the gate structure. A thorough review of the location and sizing of the proposed barrier was undertaken involving key stakeholders to the project \(Appendix F20, Tidal Barrier – Technical review note\) This concluded that whilst the tidal barrier was located in the most suitable location and the type of barrier structure was also](#)

appropriate, it would be advantageous to increase the width of the barrier structure to 40m. This increased width reduces the risk of vessels making contact with the barrier improving its resilience. In addition, it provides greater flexibility for future changes to the Lake Lothing entrance channel. For this reason and as part of the design development and continued stakeholder engagement, a new 40m tidal barrier option has been introduced into the appraisal with the intention of selecting it as the preferred local choice option if it is not identified as the national economic option.

3.2. Critical success factors (Tidal)

The factors described in Table 3.1 have been used to assess the tidal flood defence options. These factors were developed for the 2018 OBC to consider delivery of the project objectives and the requirements of key partnership funding sources.

Table 3.1 Critical Success factors - Tidal

No	Critical Success Factor	Measurement Criteria	Importance (1-5)
1	Provide a minimum 1in200 year (0.5% AEP) SOP to comply with NALEP growth funding requirements.	SOP provided by option to areas driving NALEP funding allocation.	1
2	Provide the most economically justified SOP to other areas of Lowestoft – commercial and residential, safeguarding key transportation routes and infrastructure.	SOP provided by option to other areas at risk of flooding.	2
3	Provide a sustainable tidal flood defence system that is affordable.	Option cost with available funding in accordance with funding strategy, including whole life cost and O&M requirements	3
4	Not compromising the ability of existing businesses and infrastructure to operate and grow – Port, Industry, Railway, A47, and Bascule Bridge.	Impact of options on current operational regime of businesses and infrastructure.	4
5	Limit the impact of construction activity on the local economy and community.	Number and value of claims for compensation.	5

3.3. Long list options (Tidal)

The long list options considered for the management of tidal flood risk in Lowestoft are summarised in Table 3.2 including a brief description of why they were taken forward or rejected from the shortlisted options. The shortlisting process was undertaken with input from the Lowestoft FRMP technical steering group at SOC stage following an outline assessment of option cost and technical feasibility. This process was concluded with a workshop to agree the shortlist of options as identified in Table 3.3. A review of these options was undertaken for the 2022 OBC which concluded that the long list and shortlisting process remains valid. An additional tidal barrier option has been included for the 2018 OBC in the as discussed in Section 3.1.

All options involving the construction of a hard defence line required additional supporting works to be undertaken to outfalls from the local drainage systems to reduce the volume of tidal waters bypassing the defence line.

Table 3.2 – Tidal long list of options

Option	Description	Benefits delivered /Issues involved	Reason for shortlist or rejection
1	Do Nothing	No Benefits – reduced SoP when informal defence along A47 is not serviceable, climate change impacts are considered and increased damages when no flood warning service provided. Does not promote growth.	Shortlisted as baseline economic case

Option	Description	Benefits delivered /Issues involved	Reason for shortlist or rejection
2	Maintain - Do minimum	Some benefits – SoP reduces as climate change impacts, continued flood warning. Does not promote growth	Shortlisted as green book requirement.
3	Improve – flood walls only	Improves SoP to the majority of the strategy area – Mutford lock end still subject to flooding from the Broads' system in tidal surge event. Walls along inner harbour quays may restrict operational usage of some quaysides. Hydraulic modelling indicates some increase in flood risk to unprotected property at western end of Lake Lothing.	Shortlisted to test the feasibility of a non-barrier option.
4	Improve - Outer Harbour barriers and walls	Can provide the required standard of protection. Provides protection to the port area but also restrictions on the use of the port during a surge event.	Rejected due to: Significant cost of two large tidal barriers, significant improvement works to harbour arms, significant impact on ports operations during and post construction including losing its classification as a Safe Haven.
5	Improve – 28 metre Bascule Bridge barrier and walls	Improves SoP to the majority of the study area – Mutford lock end remains at risk of tidal flooding from the Broads' system. <i>Issues include: likely ship impacts (and associated costs and environmental effects of repairs) due to a narrower navigation channel compared to Option 9, as predicted by navigation simulations completed in 2021.</i>	Shortlisted. As a tidal barrier option seaward of the Bascule Bridge. Early indications from business and public consultation is that this option meets with public approval. <i>Identified in the 2018 OBC as the preferred option.</i>
6	Improve – third bridge crossing barrier and walls	Improve SoP to the majority of the strategy area – Mutford lock end remains at risk of tidal flooding from the Broads' system. Issues include: timing of project implementation, costs and navigation impacts.	Rejected. Third crossing is already being built. The 2018 OBC concluded that even with the potential efficiencies of the combined approach, the capital expenditure associated with such a wide barrier structure far exceeded that of the Bascule Bridge barrier and makes Option 6 unaffordable.
7	Temporary flood defences only	Improves SoP to limited areas of the strategy area. Will not enable growth nor significantly increase business confidence. Significant impact on business operations when deployed.	Rejected as a long-term solution due to: Low standard of protection (1in50 year (2% AEP) SoP in 2018) feasible, high long term operational costs, increased risk of failure or outflanking and lower levels of reliability when compared to permanent defences. Does not enable growth. Cannot readily keep up with climate change impacts and therefore cannot achieve the project objectives.
8	Property level resilience only	Limited benefits to individual properties where depth of flooding does not exceed 0.6m. Will not enable growth or significantly increase business confidence. Will not reduce the impact of flooding on transportation routes or other infrastructure.	Rejected as long-term solution due to: Depth of flooding means that for the majority of properties, this approach is not technically feasible, does not enable growth or protect infrastructure.
9	Improve – 40 metre Bascule Bridge barrier and walls	<i>A new option with a wider barrier was introduced for the 2022 OBC to reduce risk of ship impacts and improved barrier reliability / availability. The costs and</i>	Shortlisted. As a tidal barrier option seaward of the Bascule Bridge. Due to similarity with Option 5, this is considered to have similar levels of public approval. The increased

Option	Description	Benefits delivered /Issues involved	Reason for shortlist or rejection
		environmental effects of associated repairs would also be reduced compared to the 28m barrier in Option 5. Improves SoP to the majority of the study area – Mutford lock end remains at risk of tidal flooding from the Broads' system.	barrier width also contributes to greater resilience and is less restrictive on future development of the Lake Lothing entrance channel.

3.4. Shortlist options (Tidal)

Overview

The shortlisted options for reducing the risk of tidal flooding in Lowestoft are detailed in Table 3.3 with a summary description of each option. Plans illustrating the alignment of the shortlisted options are included in Appendix D2 as well as detailed design drawings for the outer harbour tidal walls in Appendix D3 and early design drawings for the 40m Tidal Barrier in Appendix D9.

From early feasibility studies it was identified that significant partnership contributions would be required to fund a tidal defence scheme for Lowestoft. The development of the shortlist of options therefore focused on options that would be able to attract the partnership funding required and achieve the project objectives. In particular the requirement for NALP growth funding that the tidal defences provide a minimum of 1in200 year (0.5% AEP) SoP to enable commercial development and growth of areas protected by the proposed tidal defences.

All do something options taken forward for economic appraisal considered a range of SoPs to enable the determination of the most economically advantageous option as summarised in Section 3.5 with further detail in the Tidal Economic appraisal report (Appendix E1).

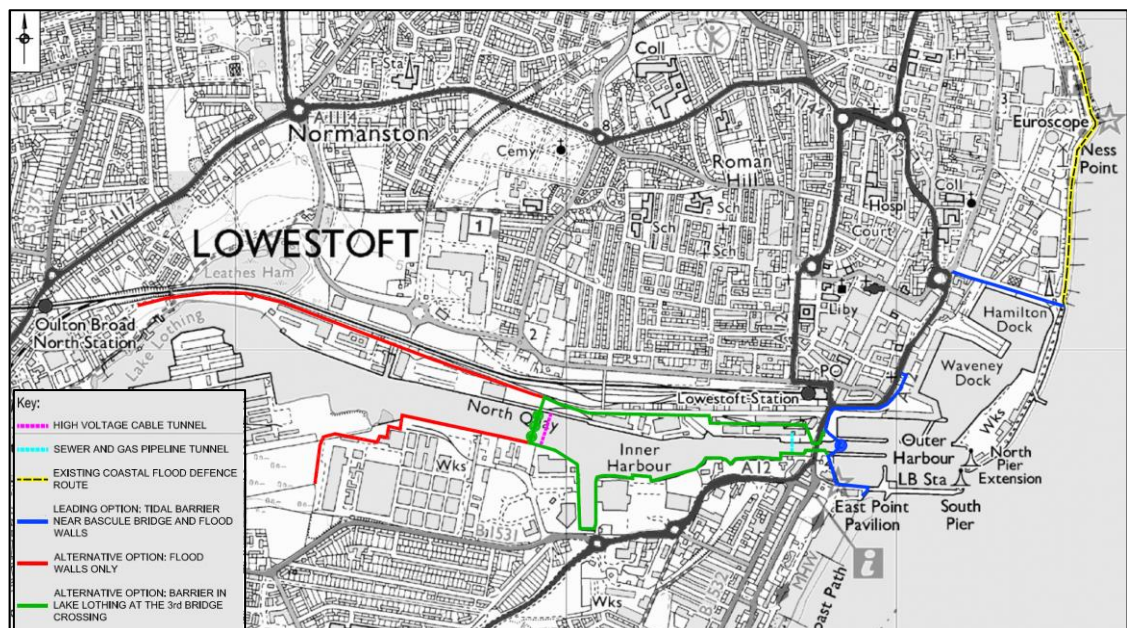
Table 3.3 – Tidal shortlist of options

Short listed Option	Option Description
1 Do nothing	No maintenance or improvements would be undertaken on the existing flood defences.
2 Maintain - Do minimum	Maintenance of the existing flood wall along the east side of the A12 Waveney Road would continue to provide an informal flood defence, preventing tidal flood waters up to a level of 2.90m AOD from reaching the town centre from the Outer Harbour. No new flood defences would be provided. Provision of the flood warnings would continue.
3 Improve – flood walls only	<p>Construction of approximately 5.5km of flood walls to the north and south of Lake Lothing and around the perimeter of the Outer Harbour. Where the defence line crosses the A47, lift-up/demountable flood barriers will be required from year 50. The Lake Lothing tidal walls tie into high ground towards the western end of Lake Lothing but do not continue all the way to Mutford lock. Continuing to the south in front of the Royal Norfolk & Suffolk Yacht Club, along the south pier access road tying into the existing Children's Corner sea wall. To the north of the Bascule Bridge, the tidal walls would be set back following the perimeter of the port estate, tying into high ground to the north of the main ABP port entrance. To accommodate an existing intermediate pressure gas pipeline, a section of demountable defences is required adjacent to the north west corner of the trawl dock, set to the east of the existing port security fence. A further wall with sections of demountable barriers providing access would be provided along Hamilton Road, tying into high ground in the west at the A47 and with the existing Hamilton sea wall to the east.</p> <p>A flood gate across the dual Norwich to Lowestoft railway line previously considered was ruled out due to technical and legal considerations.</p> <p>The tidal flood walls would be typically between 0.3m and 2.6m high including several sections of demountable defences, especially on the northern side of Lake Lothing to allow access to the port quaysides. A number of drainage outfalls would require adjustment to prevent the backflow of tidal water.</p>
5 Improve – 28m Bascule	Construction of a 28m wide (navigable width) tidal barrier across the Lake Lothing entrance channel on the seaward side of the A47 Bascule Bridge.

Short listed Option	Option Description
Bridge barrier and walls	<p>Approximately 1.0km of flood walls, flood gates and demountable barriers (0.3m to 1.9m high) would be constructed along the same alignment as Option 3 around the outer harbour with the flood walls tying into the tidal barrier structure, high ground and existing coastal defences to the north and south of the outer harbour.</p> <p>A number of tidal flap valves would also be required to seal existing drainage outfalls into the outer harbour. The existing tide gauge adjacent to the Bascule Bridge would need to be relocated to enable the construction of the tidal barrier.</p>
9 Improve – 40m Bascule Bridge barrier and walls	<p>This new option with a wider barrier was introduced for the 2022 OBC to improve barrier reliability by reducing the risk of ship impacts (and associated costs and environmental effects of repairs) when compared to the 28m barrier in Option 5. The increased width of the barrier improves the resilience of the barrier gates and reduces restrictions on the future development of the Lake Lothing entrance channel.</p> <p>The defence alignment of this option is the same as Option 5 except with a wider barrier and a shorter length of demountable defences.</p>

Figure 3.1 illustrates the relative alignments of the shortlisted tidal options. Alignment plans are included in Appendix D2 for each shortlisted option with detailed designs for the outer harbour walls which feature in all shortlisted options in Appendix D3. The tidal flood wall shown (blue line) to the north of Hamilton Dock is shown for completeness but does not form part of the works considered in the economic appraisal.

Figure 3.1 – Shortlisted options alignment plan





*The Lake Lothing Barrier option is no longer considered as a short list option following its removal in the 2018 OBC.

Technical assessment

Table 3.4 contains a summary of the technical assessment of options for the tidal flood defences. This table is supported by the Lowestoft Tidal Barrier feasibility study (Appendix F2) and the Tidal Options note (Appendix E3).

Table 3.4 – Technical description of tidal short listed options

Short listed Option	Option description and technical assessment
1 Do nothing	As Lowestoft does not benefit from any formal flood defences this option is not described further. The informal flood defence along the A47 forms part of the ports security fencing and is not maintained as a flood defence. It will therefore only provide a standard of defence for as long as it is in position. Should this structure deteriorate or be removed the standard of protection will be reduced accordingly.
2 Do minimum – maintain	Continued maintenance of the existing informal defence along the A47, no further improvements along the frontage. Existing standard of protection against tidal flooding will reduce as climate change impacts take hold in future years. Drainage system would become increasingly inundated by tidal waters at high tides that may result in flooding elsewhere if non-return devices have not been fitted.
3 Improve – flood walls only	<p>New flood walls would be constructed, tying into high ground. The walls will cross a number of existing wide vehicular and pedestrian access locations requiring demountable barriers to be installed. Some of the alignment adjacent to Lake Lothing is on top of the existing quayside. The suitability of the existing quayside to support the flood walls is a key area that would need addressing together with long term maintenance and replacement costs for the quaysides. Where flood walls do not follow the line of the quay they will typically follow existing land ownership boundaries.</p>  <p><i>Artist's impression of proposed flood walls adjacent to Station Square</i></p> <p>The existing Bascule Bridge presents a challenge. The configuration of the structure means that to secure flood protection above a level of 4.0mAOD and keep the bridge operational, cost prohibitive alterations to the structure would be required. The option considered is to tie flood walls into the abutments either side of the bridge. Install watertight doors to the abutment chambers and install lift up barriers across the carriageway on either side of the bridge. These demountable barriers would be required to be deployed when surge levels above 4.0mAOD were forecast and the A47 would need to be closed at this time.</p> <p>The key issues associated with this option include: service crossings, seepage under walls through existing quaysides, drainage system impacts, stability of existing quaysides, long-term maintenance of quaysides supporting flood walls, impact on port operations, impact on visual amenity, a tidal surge would still propagate through to the Broads' system at Mutford lock.</p> <p>Properties in the Oulton Broad and Mutford lock area would not benefit from any reduction in flood risk, hydraulic modelling suggests there would be an increase in residual flood risk. The use of property level protection would need to be considered for this community.</p>
5 Improve – 28m Bascule Bridge barrier and walls	<p>Option is the broadly the same as Option 3 for the flood walls located seaward of the Bascule Bridge. At the mouth of the channel the flood walls will tie into a tidal barrier structure. The barrier structure would prevent tidal surges from propagating into the inner harbour. With the barrier at this location the A47 would be able to remain open during surge events (up to the design event). The tidal barrier would reduce the impact of tidal flooding on the Broads' system. SOC stage hydraulic modelling indicated that localised ground raising would be required in Year 75 along South Quay to ensure the residual flood risk from the Broads did not overtop the banks of Lake Lothing. Revised hydraulic modelling at OBC stage indicated that these measures are not required, and the cost has therefore been removed from the economic analysis.</p>

Short listed Option	Option description and technical assessment
	<p>The tidal barrier needs to be a minimum of 28m wide to allow for future expansion of the inlet between the inner and outer harbour, with a barrier cill level that will not constrain the advertised dredge depth for the inner harbour. This option would involve demolition of a section of the southern pier that runs along the mouth of the entrance channel to Lake Lothing to accommodate the barrier structure.</p> <p>A feasibility study¹² identified that mitre gates were likely to be the most technically and economically viable option at this location, a thorough review was undertaken at OBC stage which confirmed this was still the case.</p> <p>Navigation simulations undertaken in 2021 confirmed that whilst navigation through the 28m barrier was possible, a risk of ship impacts with the barrier gates was highlighted. It is recognised that ship impacts with the existing quaysides do sometimes occur during navigation manoeuvres, particularly with the larger vessels that use the entrance channel when wind speeds are high. This would result in an increased frequency of repairs to the tidal barrier over its lifetime and in the worst case periods where the barrier is not able to operate. Mitigations for these events would include ABP placing temporary restrictions on the size of vessels allowed to transit the entrance channel when wind speeds exceed a certain threshold.</p>  <p><i>Artist's impression of proposed tidal barrier seaward of the Bascule Bridge in closed position</i></p> <p>Properties in the Mutford lock area will benefit from a reduction in tidal flood risk from the Lake Lothing side. However, tidal surges will still propagate through the Broads' system, entering via the mouth of the River Yare at Great Yarmouth. The economic analysis has identified three residential properties which remain at risk of tidal flooding to a depth of between 0.2m and 0.6m in 2117 (0.5% AEP 1in200yr event). Property Level Resilience measures may be appropriate to further reduce the risk of flooding to these properties in future years. There are other residential properties in the flood risk area which are located in elevated positions with the main dwelling area located above commercial properties. These properties are not eligible for PLR via GiA funding and do not count towards the outcome measure score. Commercial properties are also located within the Mutford lock area and further consideration of potential measures to improve their resilience to flooding should be given. The costs associated with any commercial property level resilience measures for the Mutford lock area have not been included in this appraisal as they would not attract funding from FCERM GiA or NALEP funding. Any future works to prevent a tidal surge entering the Broads' system at Great Yarmouth would help to alleviate this issue once the Lowestoft barrier is in place.</p> <p>In addition to the key issues identified for Option 3 those associated with the barrier include: Impact on navigation, closure timings, construction impacts, interaction with Bascule Bridge structure and resilience of structure to remain operational. Tidal surges can still propagate to Lowestoft (at reduced levels) via Oulton Broad through the Broads' system but revised OBC stage hydraulic modelling indicates the banks of Lake Lothing are not overtopped when considering a 1in200 year (0.5% AEP) tidal event in 2117.</p> <p>The length of demountable barriers, number of services crossings and number of outfalls to be treated would be significantly less than those for Options 3.</p>

Short listed Option	Option description and technical assessment
9 Improve - 40m Bascule Bridge barrier & walls	<p>This is a new option introduced for the 2022 OBC which has a tidal barrier at the same location as Option 5 near the Bascule Bridge but with a 12m wider barrier to reduce the risk of ship impacts (and associated costs and environmental effects of repairs) compared to Option 5, increasing the resilience and therefore reliability of the gates and further reducing restrictions place on the future development of the Lake Lothing entrance channel. As with Option 5, new tidal flood walls and flood gates would be constructed around the perimeter of the outer harbour, tying in to existing coastal defences to the north and south, and tying into the new barrier just downstream of the Bascule Bridge. This option would involve demolition of a section of the southern and northern piers that run along the mouth of the entrance channel to Lake Lothing and reconstruction of the pier 12m further north to accommodate the wider barrier.</p> <p>Due to a different construction approach, the 40m barrier allows the opportunity for unconstrained construction where works are no limited to relatively short seasonal possessions of the entrance channel. This could reduce the construction programme from 6 years to 3 years resulting in a significant construction cost saving.</p>

Environmental assessment

At SOC stage a detailed a SEA Environmental Report (annex to PEIR Appendix H1) was produced, assessing the potential environmental impacts, in combination effects and identifying enhancement opportunities for all shortlisted options. Strategic WFD and HRA assessments were also completed (Appendix H2 and H4 respectively). A Preliminary Environmental Information Report (Appendix H1) and revised WFD and HRA assessments have also been produced for the preferred option. Table 3.5 summarises the key environmental effects and opportunities for the revised shortlisted tidal options and has been refreshed for the preferred option (Option 5), highlighting any changes as a result of the more detailed assessment. **Please note: property numbers given in Table 3.5 are based on the assessment made at SOC stage and differ from OBC stage.**

Please note: the environmental appendices were produced based on assessment of a 28m barrier for shortlisted Option 5 to support the 2018 OBC and this section has not been updated to include the larger 40 m barrier size for Option 9. Given the location of the barrier is the same, it is determined that the effects would not be materially different to those stated in the appendices, although it is likely that the increased size of the barrier could affect the magnitude of some of the effects by, for example, making the barrier more visible and resulting in more dredged material requiring disposal. Conversely, the likely lower frequency of ship impacts for the larger barrier for Option 9 will result in a lower frequency of environmental effects of associated repairs (e.g. noise and disturbance of marine fauna).

Table 3.5 Key environmental effects and opportunities (tidal)

Option 1: Do nothing & Option 2: Do minimum – maintain	
Key positive effects	None identified
Key negative effects	<p>Under a do-minimum option, 128 (648 by 2115 including climate change) (SOC stage) residential properties will be at risk of flooding in 0.5% chance of flood occurring (i.e. a 1in200 year), of which 127 (544 by 2115 including climate change) (SOC stage) properties are located in the 20% Most Deprived Wards.</p> <p>Effects will be exacerbated for more vulnerable members of the population that will be less physically able to respond to a flood event or financially recover.</p> <p>All landfill sites will be at risk from a 0.5% chance of occurring (i.e. a 1in200 year) in 2115 (with climate change).</p> <p>The low level of protection the options will provide will result in increase in the risk of contaminates entering the waterbodies adversely affecting water quality and</p>

	potentially deteriorating hydromorphology, ecological quality/quantity as well as substrate quantity/quality which could lead to homogeneity in habitat structure. Flood water percolation into the underlying ground waterbody could also increase risk of exposure to contaminants. For Option 1, the effect is likely to be exacerbated by the potential introduction of significant quantities of additional saline water into the Broads, through Oulton Broad as the Mutford lock will remain open under this option. This will severely affect the habitats and water quality (locally) but not for the wider Bure and Waveney and Yare and Lothing water bodies.
Mitigation or enhancement opportunity	None identified
Option 3: Improve – flood walls only	
Key positive effects	<p>Minimises risk of flooding to most properties north and south of Lake Lothing, but will not reduce the risk for properties west of Lake Lothing.</p> <p>Option is likely to protect features within Lake Lothing Area Action Plan boundary.</p> <p>Likely to reduce flood risk to locally designated areas, which may result in positive benefits such as limited disturbance to the habitat of terrestrial flora and fauna of these sites, including reed beds, willow and intertidal mudflats.</p> <p>Flood risk at known landfill sites is likely to be reduced.</p> <p>Flood risk to conservation areas and the listed buildings likely to be reduced.</p>
Key negative effects	<p>Presence of defence walls is likely to affect physical and visual access to the river/coast from various locations along the proposed wall.</p> <p>Flood risk in Lake Lothing AAP proposed areas is likely to be reduced, however, during construction and future operation there is likely to be significant impact on port operations, therefore potentially affecting employment and commercial activities.</p> <p>Significant construction material resources will be consumed and construction is likely to generate waste.</p> <p>Option increases risk of contaminants entering the waterbodies adversely affecting water quality. Proposal could affect macroalgae through algae removal operations to facilitate construction and loss of invertebrates under the footprint of the new defences. Should piling construction be used for the defence structures, risk of saline intrusion into the underlying ground waterbody exists.</p>
Mitigation or enhancement opportunity	<p>Potential use of glass topped walls where required, adaptive approach where possible to limit the height and impact of flood walls initially where possible.</p> <p>Continue engagement with local businesses to assess and minimise the impact on business operations of proposed alignments and flood gate locations.</p>
Option 5: Improve – Bascule Bridge barrier and walls	
Key positive effects	<p>Only three residential properties (SOC stage) are likely to be at risk by comparison to 128 residential properties (SOC stage) that are at risk in a 0.5% chance of flood occurring (i.e.a 1in200 year).</p> <p>Option will reduce risk to the whole of the Lake Lothing AAP area, improving investor confidence therefore attracting inward investment.</p> <p>Option will help continue port activities during its operation phase. This will avoid the loss of revenue, working days and disruption resulting from flooding with positive benefits to the local economy.</p> <p>Flood risk to transport infrastructure will be reduced, such as the Lowestoft Station, the railway line and A12 / A47 road.</p> <p>Option reduces flood risk to locally designated sites for 1 in 200 probability of a flood event occurring in any one year up to year 2115 with climate change scenario which may result in positive benefits such as limited disturbance to the habitat of terrestrial flora and fauna of these sites.</p>
Key negative effects	<p>Short term construction impacts may affect port activities and must be mitigated with appropriate programme interventions.</p> <p>There are potential impacts (i.e. disturbance) to marine mammals resulting from construction activity.</p> <p>Construction activity could result in disruption to recreational users of the harbour and Lake Lothing, while in-harbour works are undertaken.</p>

	There are potential adverse noise and vibration effects that could result from piling and other construction activities, which could affect local residents in the surrounding areas.
Mitigation or enhancement opportunity	<p>Further stage Environment Impact Assessment should identify appropriate mitigation measures to address the potential impact.</p> <p>Continue engagement with local businesses to assess and minimise the impact on business operations of proposed alignments and flood gate locations.</p>

PEIR (2018)

A single PEIR (Appendix H1) has been prepared to consider all components (tidal, pluvial and fluvial flood measures) of the LFRMP the following text is summarised from its executive summary.

The PEIR identified that the LFRMP will provide significant benefits to Lowestoft by reducing flood risk to people, property and the environment and unlocking new opportunities for economic investment and regeneration. The development of the project has provided opportunities for the people of Lowestoft to engage with their town and environment, involving schools and local communities in developing aspects of the projects. It also presents specific opportunities to enhance views and landscape character along the banks of the harbour and around the port area.

The receptors and features that are likely to be affected by the construction or operation of the LFRMP have been identified. The key issues, risk and opportunities (i.e. whether potentially significant or uncertain) are identified in Table 1 of the PEIR (Appendix H1). These are considered in terms of the LFRMP as a whole and each component part. A precautionary approach has been taken to ensure a 'worst case' situation was considered and all reasonably foreseeable actions are identified, pending further discussions/agreement with the MMO, Defra and other statutory bodies/stakeholders. Other identified issues not considered to be potentially significant have been 'scoped out' from further assessment.

The PEIR also identified that the potential for cumulative or in-combination effects of the tidal barrier scheme with other plans and projects (e.g. the Lake Lothing Third Crossing), as well as with the other elements of the LFRMP need to be considered further, in particular during the EIA of the tidal barrier scheme.

Given the limited potential for impacts from the proposed property resilience measures, further consideration is not included within this PEIR and no formal environmental assessment is recommended.

The actions recommended to address the identified issues include:

- Consultation with affected statutory bodies, landowners and stakeholders to obtain additional data, discuss potential impacts and mitigation;
- Further surveys, to be agreed with the MMO/statutory bodies: e.g. in-channel habitat and invertebrate surveys, baseline noise surveys; bat roost assessment; sediment analysis;
- Baseline analyses: e.g. fish populations, hydrodynamics and processes, in-channel sediment sample data;
- Modelling, if agreed with the MMO/statutory bodies: e.g. two-dimensional hydrodynamic modelling, sediment plume modelling and groundwater flow modelling;
- Identification and development of appropriate mitigation measures – whether inbuilt within the project proposals or additional. Many of the identified issues can be addressed through good construction practices.
- A statutory EIA for all the scoped in issues relating to the tidal barrier scheme (as shown in Table 1).

Next steps

Subject to funding and technical approvals and pending further discussions/agreement with statutory bodies, the recommended further environmental assessments will be undertaken.

The EIA of the tidal barrier scheme and the [technical assessments needed to provide supporting information for the TWAO and other consents](#) have commenced with draft documents and assessments in development. These draft documents are not at a stage where that can be shared outside of the project team and are therefore not included in the appendices of this document.

The following points outline the key environmental deliverables currently being developed for the tidal barrier:

- [Environmental statement](#)
 - This develops the work that was done for the 2018 PEIR. There is no intention to update the 2018 PEIR.
 - A working draft of the environmental statement has been produced, and is being developed by the project team, it is not intended that this would be made 'public' until a more formal consultation stage (pre-TWAO submission).
- [Habitat Regulations Assessment](#)
 - A working draft of this has been produced. This includes an appropriate assessment for the scheme.
 - The intention is that the working draft would be discussed with Natural England. It would be released for formal consultation in line with the ES above.
- [Water Framework Directive](#)
 - A working draft has been produced, we would be looking to have discussions with stakeholders on this over the coming months, with a view to a more formal consultation in line with the ES above.

The design of various project components will continue to be developed in parallel with the environmental assessment processes. This iterative approach will enable potential adverse impacts to be avoided or reduced and opportunities for environmental improvements to be identified.

HRA Assessments [\(2018\)](#)

HRA assessments have been completed at both SOC and OBC stages. The SOC stage assessment (Appendix H2) considered all strategic options and concluded that all strategy options, either alone or in combination with other plans or projects, would have no likely significant effect on the European Sites and no further assessment is required under The Conservation of Habitats and Species Regulations 2010 (as amended). The HRA report (SOC stage) has been consulted upon with Natural England, who have confirmed that they agree with the above findings.

The OBC stage assessment (Appendix H3) considered the preferred options for each element of the LFRMP (tidal, pluvial and fluvial) and concluded that for most of the sites and their qualifying features there will either be no likelihood of any significant effects occurring or any effects would be trivial with respect to the site Conservation Objectives. This conclusion means that there is no requirement to assess potential in-combination likely significant effects with other plans and projects. However, a likely significant effect of the tidal barrier scheme, alone, has been identified on harbour porpoise, the only feature of the Southern North Sea SCI/cSAC. The information to inform the appropriate assessment has concluded that, with incorporated mitigation measures, it will be possible to avoid a conclusion of adverse effects on the integrity

of the Southern North Sea SCI/cSAC from the LFRMP alone. However, this needs to be corroborated by examination of the detailed noise and vibration levels that the works are likely to generate, once they are available. Likewise, the report has not been able to conclude the absence of in-combination effects at this stage because of the need for this level of information and in the absence of confirmed programmes for any of the in-combination projects (principally the Third River Crossing).

WFD assessments (2018)

WFD assessments have been completed at both SOC and OBC stages. The SOC stage assessment (Appendix H4) considered all strategic options and concluded that the proposed strategy was not predicted to cause deterioration in waterbody status or prevent the waterbody from meeting its objectives and therefore further assessment against the conditions listed in Article 4.7 is not required. Therefore, the Strategy is compliant with WFD, and no further assessment is required. Further stages of the Strategy should however re-evaluate the risk to the waterbodies when further engineering details become available.

The OBC stage WFD assessment (Appendix H5) considered the preferred option and concluded that the works associated with delivering the proposed tidal barrier requires further detailed assessment of the potential impacts on the transitional and coastal WFD waterbodies due to the extent and nature of the works. This will be completed and included as part of the ongoing environmental impact assessment as a Detailed WFD Assessment.

The effect of the tidal flood walls has been assessed and it is considered unlikely that there would be any significant effects due to the proposed walls. The works would be mainly set-back from the edge of the waterfront. Therefore, the tidal flood walls have been assessed as not likely to lead to the deterioration in the status of the Bure & Waveney and Yare & Lothing transitional WFD waterbody or the two downstream coastal WFD waterbodies. They would also not prevent the WFD waterbody from achieving Good status in the future. As a consequence, no further assessment is deemed necessary for this element of the Proposed Project and it is considered compliant with the WFD legislation. Table 3.6 summarises the assessment and identifies the waterbodies considered.

Table 3.6 Edited extract from WFD assessment (2018), Appendix H5 (Table 4.1: Scoping of project components for detailed assessment and Section 5)

Project component	Element	Scoped in or out?	Relevant WFD water body(s)
Tidal	Tidal barrier (construction and operation)	Scoped in – potential effect on transitional WFD waterbody as a consequence of the new concrete foundation structure and gate, including changes to flow and sediment processes during operation of the structure	Bure & Waveney and Yare & Lothing transitional WFD waterbody Suffolk & Norfolk East coastal WFD waterbody Broadland Rivers Chalk & Crag WFD groundwater
	Tidal flood walls (construction and operation)	Initially Scoped in as new flood walls along the edge of the transitional WFD water body. Scoped Out following further consideration as the proposed works are mainly set back from the waterbodies considered and located in existing port/harbour areas.	Bure & Waveney & Yare & Lothing transitional WFD waterbody Broadland Rivers Chalk & Crag WFD groundwater

3.5. Economic appraisal (Tidal)

The economic assessment of the shortlisted tidal defence options has been undertaken in line with the requirements of FCERM-AG. The Lowestoft tidal economic technical memorandum (Appendix E1) details the economic analysis undertaken in relation to the tidal element of this project. The economic analysis was

updated for the 2022 OBC to fully consider and determine the most economically advantageous standards of protection from an FCERM-GIA point of view. In the interests of cost efficiency the hydraulic modelling used to inform the economic analysis has not been updated for the 2022 OBC. Revised climate change and coastal flood boundary data have been published since the hydraulic modelling was completed in 2017. To consider if these updates have a material impact on the appraisal a sensitivity analysis has been undertaken with the findings summarised in Section 3.9.

The technical memorandum giving full details of the economic analysis methodology together with supporting calculation summary sheets are contained within Appendix E1, with a summary presented in the sections below.

It was identified early in the appraisal process that Option 9 was not cost beneficial in terms of the FDGIA economic analysis, it was therefore excluded from the economic analysis to identify the economically preferred option (national economic option).

Option Standard of Protection

Do something Options 3 and 5 were assessed to determine the most economically advantageous SoP. Further detail on this assessment and the associated option costing approach can be found in Appendix E1 and E2 respectively.

Benefits

Table 3.7 summarises the present value damages (PVd) and present value benefits (PVb) that can be attributed to each of the short listed tidal options together with the key qualitative benefits associated with each option. To take into account the potentially reduced in reliability and resilience of the 28m barrier option when compared to the 40m barrier or walls only option a 15 reduction in total benefits has been applied to the PV benefits used to assess the 28m barrier option. Further detail of this approach is included in the Economic technical report (appendix E1).

Table 3.7 – Tidal summary of option damages and benefits

Option		Damage (PVd) £k	Damage avoided £k	Benefits (PVb) £k**	Probability of 100% of benefits being realised	Adjusted Benefits (PVb) £k**	Key additional non-monetised benefits
1	Do nothing	148,720					None
2	Do minimum – maintain	148,720	0	0	1.00	0	None
3a	Improve – flood walls only - 1in20 year (5% AEP)	82,936	65,784	67,600	1.00	67,600	Minimises disruption to navigation through Inner Harbour entrance channel during construction.
3b	Improve – flood walls only - 1in75 year (1.33% AEP)	66,432	82,288	84,567	1.00	84,567	
3c	Improve – flood walls only - 1in200 year (0.5% AEP)	61,271	87,449	89,845	1.00	89,845	
3d	Improve – flood walls only - 1in500 year (0.2% AEP)	41,632	107,088	109,549	1.00	109,549	
5a	Improve – 28m Bascule Bridge barrier & walls- 1in75 year (1.33% AEP)	34,375	114,345	116,820	0.99	115,652	Enables Bascule Bridge and the A47 trunk road to remain operational during a tidal event. Enables rail links into Lowestoft to remain operational. Reduces impact of tidal flooding on Broads' system.
5b	Improve – 28m Bascule Bridge barrier & walls - 1in100 year (1% AEP)*	33,666	115,054	117,536	0.99	116,361	
5c	Improve – 28m Bascule Bridge barrier & walls - 1in200 year (0.5% AEP)	30,829	117,891	120,401	0.99	119,197	
5d	Improve – 28m Bascule Bridge barrier & walls - 1in500 year (0.2% AEP)	29,061	119,659	122,188	0.99	120,966	

Option		Damage (PVd) £k	Damage avoided £k	Benefits (PVb) £k**	Probability of 100% of benefits being realised	Adjusted Benefits (PVb) £k**	Key additional non-monetised benefits
9	Improve – 40m Bascule Bridge barrier & walls - 1in200 year (0.5% AEP)	30,829	117,891	120,401	1.00	120,401	As Option 5 with the addition of increased resilience and enabling future adaptation pathways for growth and economic development of Lowestoft.

*Interpolated values based on trend analysis.

**Including human health intangibles

The differing levels of PVd and PVb provided by options with the same stated relative SoP is due to the relative length of the flood walls over which tidal water would overtop in events exceeding the design level. In addition, the study area includes properties that do not receive or partially receive a reduction in flood risk from the do something options. These include commercial properties surrounding the outer and inner harbours and residential and commercial properties in the Mutford lock area.

Table 3.8 provides a summary of the key do nothing damage categories and the damages associated with each category, including potential damages associated with tourism were this to be included in the appraisal.

Table 3.8 PV damages – Do nothing damage categories and values.

Damage Category	PV Do Nothing Damages (100yr appraisal period) (£ million)
Residential Building, content and clean up (Direct)	19.7
Vehicle damages	1.9
Temporary and alternative accommodation	2.2
Non-Residential Building, content and clean up (Direct)	75.6
Non-Residential Indirect	2.1
Risk to life	9
Emergency response and recovery	23.2
Mental Health	6.3
Roads	5.7
Rail	0.5
Electrical substation - electricity loss	2.4
Sub Total	148.7
Tourism / Reputational Damage*	194

* Tourism benefits not included in economic analysis

Table excludes intangible health benefits (these are benefits, not damages)

Option costs

Base option cost

Costs for the shortlisted tidal options have been updated following detailed development of the new wider barrier option introduced since the 2018 OBC (Option 9 – 40m Bascule Bridge Barrier and Walls). The tidal flood wall element of Option 9 is complementary to all other 'Do Something' options and construction of these walls has progressed as a package of advanced works utilising funding that was secured and not linked to the financial approval of the 2018 OBC.

To inform detailed consultation with key stakeholders about the Option 9 (40m) tidal barrier in preparation for the development of a TWAO application and to develop greater level of cost certainty a staged approach to the detailed design underway. The 15% detailed design has been used to inform the options costing of this barrier presented in this economic analysis as well as its operation and maintenance requirements.

The SCAPE delivery contractor undertook detailed costing of Option 9 in December 2021, with the assistance of other specialist suppliers. Unit rates from these costing exercises were then used to update the previous costs for Option 3 and 5 which were originally developed for the 2018 OBC

Table 3.9 Costing and risk basis for shortlisted options

Option	Costing basis			Risk register	
	Outline design	Detailed costing	Benchmarked cost elements	Quantative & residual OB	Pro-rata
3 – Improve – flood walls only - 1in200 year (0.5% AEP)	Part	Part	Some	Part	Part
5 – Improve – 28m Bascule Bridge barrier & walls - 1in200 year (0.5% AEP)	Yes	Yes	None	Yes	None
9 – Improve – 40m Bascule Bridge barrier & walls 1in200 year (0.5% AEP) Constrained and unconstrained delivery.	Yes	Yes	None	Yes	None

Detailed option costs were produced for delivering each shortlisted option to a 1in200 year (0.5% AEP) SoP in 2117. To assess the most economically advantageous SoP, a review of the defence alignments required to provide different SoP's was undertaken. This concluded that they remained unchanged from the 1in200 year (0.5% AEP) SoP due to the relatively flat topography and limited scope to tie the defences into high ground. Therefore, only the defence crest level would vary between the SoP's considered. To generate option costs for the alternative SoP's a percentage reduction or uplift was applied to the base option cost. Further detail is included in the option costing technical note (Appendix E2) which outlines the approach in more detail.

Adaptive approach

A managed adaptive approach has been applied to the delivery of the options at locations where it was considered advantageous to do so for both economic and environmental impact reasons. The managed adaptive approach has been applied in the following locations:

- Tidal flood walls along Waveney Road (all shortlisted options)
- Tidal flood walls along Lake Lothing (Option 3)
- The provision of demountable barriers and flood gates (all shortlisted options)

As part of the adaptive approach tidal flood walls would initially be constructed to the required crest level for 50 years' time, at or just before this point, they would be raised to provide the required SoP for the next 50 years. The foundations and groundwater cut-off of the wall would be suitable for the complete 100-year asset life.

For the demountable barriers and flood gates, these typically have a 50-year asset life and would be provided to the level required to provide the SoP for the life of the asset. As for the adaptive tidal flood wall sections, the foundations and groundwater cut-off will be constructed for a 100-year asset life. This approach will generate efficiency in the initial capital cost as well as the operation and maintenance costs of the assets. The only negative being where they are situated in a non-adaptive wall section, they will limit the overall SoP provided along that section. Further detail on the approach to costing the adaptive approach is included in the Tidal Options Costing Note (Appendix E2)

O&M costs

Following detailed development of the preferred options, there is greater certainty on the whole life O&M requirements. The Environment Agency's whole life costing workbook has been used as the basis of calculating the O&M costs for the options, supplemented by input from specialist suppliers with particular attention to the tidal

barrier structure. A schedule of anticipated operational and maintenance activities for the tidal barrier is provided in Appendix F18 which has been used to inform the whole life costing of the tidal barrier. Benchmarking has been undertaken to compare the anticipated O&M requirements and costs against similar barrier structures in addition to taking into account the specific requirements of the barrier structure proposed for Lowestoft.

Present values

Costs have all been discounted over the 100 year appraisal period (using the Treasury variable discount rate) to generate a Present Value Cost (PVC) for each option. The present value and cash costs for all options considered in the detailed economic analysis are given in Table 3.10a, a more detailed breakdown of key options PV whole life costs is given in Table 3.10b.

Table 3.10a - Summary of tidal options whole life PV & cash costs (£k)

Option	PV Cost including risk (50 th ile & residual OB) (£k)	Cash Cost including risk (50 th ile & residual OB) but excluding inflation (£k)
Option 1 - Do nothing	0	0
Option 2 - Do minimum – maintain	472	1,703
Option 3a - Improve – flood walls only 1in20 year (5% AEP) SoP	151,092	179,529
Option 3b - Improve – flood walls only 1in75 year (1.33% AEP) SoP	151,752	180,213
Option 3c - Improve – flood walls only 1in200 year (0.5% AEP) SoP	155,710	184,319
Option 3d - Improve – flood walls only 1in500 year (0.2% AEP) SoP	162,308	191,162
Option 5a - Improve – 28m Bascule Bridge barrier & walls 1in75 year (1.33% AEP) SoP	94,897	141,948
Option 5b - Improve – 28m Bascule Bridge barrier & walls 1in100 year (1% AEP) SoP*	95,118	Not calculated
Option 5c - Improve – 28m Bascule Bridge barrier & walls 1in200 year (0.5% AEP) SoP	96,005	143,149
Option 5d - Improve – 28m Bascule Bridge barrier & walls 1in500 year (0.2% AEP) SoP	98,773	146,151
Option 9LCU - Improve – 40m Bascule Bridge barrier & walls 1in200 year (0.2% AEP) SoP Un-constrained delivery	135,461	190,901
Option 9LCC - Improve – 40m Bascule Bridge barrier & walls 1in200 year (0.2% AEP) SoP Seasonally constrained delivery	141,621	200,699

*Interpolated values based on trend analysis.

Table 3.10b – Detailed summary of key tidal options whole life (PV) costs (£k)

PV Costs including risk (95%ile and residual OB) (£k)	Option 1 - Do nothing	Option 2 - Do minimum – maintain	Option 5c - Improve – Bascule Bridge barrier & walls 1in200 year (0.5% AEP) SoP*	Option 9LCU - Improve – 40m Bascule Bridge barrier & walls 1in200 year (0.2% AEP) SoP Un-constrained delivery	Option 9LCC - Improve – 40m Bascule Bridge barrier & walls 1in200 year (0.2% AEP) SoP Seasonally Constrained delivery	Option 3c - Improve – flood walls only 1in200 year (0.5% AEP) SoP*
Cost Item						
Existing staff costs	0	0	13,109	13,109	13,109	29,530
Consultants' fees	0	0				
Contractors' fees	0	0				
Site investigation and survey	0	0				
Site supervision	0	0	42,270	67,216	73,714	102,426
Construction	0	0				
Adjusted optimism bias barrier	0	0				14,057
Adjusted optimism bias walls	0	0				
Risk contingency (50%ile)	0	0	21,253	32,698	32,698	
Legal and stakeholder fees	0	0	* Included above	* Included above	* Included above	* Included above
Subtotal	0	0	80,345	118,163	125,158	146,013
Future costs (construction and maintenance)	0	363	12,046	13,307	12,665	7,460
Optimism bias	0	109	3,614	3,992	3,800	2,238
Project total (present-value) costs	0	472	96,005	135,462	141,623	155,711

Option ranking and economic appraisal conclusion

Table 3.11a presents the findings of the economic analysis of tidal options when partnership funding contributions are excluded from the calculation, as mentioned above Option 9 is excluded from this table as it did not achieve a BCR of greater than 1 and therefore could only be considered as a Local Choice option as presented in Table 3.11b. The analysis confirms that the option with the highest average BCR is Option 5 – 28m tidal barrier and flood walls BCR of 1.2. None of the Option 3 permutations achieve a BCR of greater than 1 and are therefore rejected from further consideration.

Applying the appraisal decision-making criteria, the options with the highest benefit-cost ratio are the Bascule Bridge barrier & walls options where Options 5a, 5b, 5c and 5d all have a BCR of greater than 1 (1.2). The option with the highest NSPV is “Option 5c Bascule Bridge barrier & walls – 1 in 200 year (0.5% AEP)”. The next option that provides greater benefits (option 5d) does not achieve the required iBCR of greater than 5. Indicating that “**Bascule Bridge barrier & walls – 1 in 200 year (0.5% AEP)**” is the nationally economically preferred option.

It is therefore recommended that Option 5c Bascule Bridge barrier and walls providing a SoP of 1in200 year (0.5% AEP) is taken forward as the most economically advantageous and the National preferred economic option on which any FCERM GiA

entitlement will be based. There are no other overriding factors that affect economic option selection.

However, it is the intention of ESC that the Local Choice Option 9 40m tidal barrier and tidal flood walls will be taken forward for delivery subject to sufficient additional partnership funding being secured.

Further detail can be found on the Tidal Economic Appraisal Note (Appendix E1) and the tidal appraisal summary sheet (Appendix F14).

Table 3.11a – Tidal Option ranking and appraisal summary (excluding contributions)

Option		Present Value costs (£k)	Present Value damages** (£k)	Present Value benefits (£k)*	Average benefit: cost ratio (BCR)	Net Social Present Value NSPV (£k)	Incremental benefit: cost ratio (IBCR)	Option for incremental calculation
1	Do nothing	0	148,720	N/A	N/A	N/A	N/A	N/A
2	Do minimum – maintain	472	148,720	N/A	N/A	N/A	N/A	N/A
3a	Improve – flood walls only - 1in20 year (5% AEP)	151,092	82,936	67,600	0.4	-83,492	BCR ≤1	N/A
3b	Improve – flood walls only - 1in75 year (1.33% AEP)	151,752	66,432	84,567	0.6	-67,185	BCR ≤1	N/A
3c	Improve – flood walls only - 1in200 year (0.5% AEP)	155,710	61,271	89,845	0.6	-65,865	BCR ≤1	N/A
3d	Improve – flood walls only - 1in500 year (0.2% AEP)	162,308	41,632	109,549	0.7	-52,759	BCR ≤1	N/A
5a	Improve – Bascule Bridge barrier & walls - 1in75 year (1.33% AEP)	94,897	34,375	115,652	1.2	20,755	N/A	N/A
5b	Improve – Bascule Bridge barrier & walls - 1in100 year (1% AEP)	95,118	33,666	116,361	1.2	21,243	N/A	N/A
5c	Improve – Bascule Bridge barrier & walls - 1in200 year (0.5% AEP)	96,005	30,829	119,197	1.2	23,192	Highest NSPV	N/A
5d	Improve – Bascule Bridge barrier & walls - 1in500 year (0.2% AEP)	98,773	29,061	120,966	1.2	22,193	0.6	Option 5c

*Including human health intangibles

** Tourism and amenity benefits and reputational damages are excluded from all options

Economically preferred option highlighted in green

Table 3.11b – Local Choice Tidal Option ranking and appraisal summary (excluding contributions)

Option		Present Value costs (£k)	Present Value damages** (£k)	Present Value benefits (£k)*	Average benefit: cost ratio (BCR)	Incremental benefit: cost ratio (IBCR)
5c*	Improve – 28m Bascule Bridge barrier & walls - 1in200 year (0.5% AEP)	96,005	30,829	119,197	1.2	N/A
9LCU	Option 9LCU - Improve – 40m Bascule Bridge barrier & walls 1in200 year (0.2% AEP) SoP Un-constrained delivery	135,461	30,829	120,401	0.9	0
9LCC	Option 9LCC - Improve – 40m Bascule Bridge barrier & walls 1in200 year (0.2% AEP) SoP Seasonally constrained delivery	141,621	30,829	120,401	0.9	0

* Option 5c included for comparison

** **Tourism and amenity benefits and reputational damages are excluded from all options**

3.6. Non-financial benefits appraisal (Tidal)

The shortlisted options were appraised based on economic, technical, environmental and social factors and considering the feedback from key stakeholders and public consultation. To assist in the appraisal of options and assess the impacts on a number of key objectives including non-financial benefits, an Appraisal Summary Tables (AST) was produced during the Outline Business Case, these are included in Appendix F14.

3.7. Impacts on the regional economy (Tidal)

The Port of Lowestoft has played a key role in the nation's energy security for over 45 years and its location places it at the centre of the world's largest offshore renewable energy market. As a result, it will be serving up to £16billion of wind energy projects (over half of the total UK investment) that will be delivered before 2030 and will continue to support the operation and maintenance for over 30 years. However, the critical transport and utilities infrastructure is at significant risk of tidal flooding, as was proven during the 2013 storm surge which resulted in weeks of disruption.

Wider economic benefits

The Lowestoft Economic Footprint and Impact Report [was revised in 2022](#) (Appendix F3) to consider the wider impacts of flooding on the local Lowestoft economy and the economic growth benefits that tidal flood protection would provide.

The study found that the current economic footprint of project benefit area is estimated to provide [6,400 direct jobs](#) and generates £342m of annual GVA. When indirect and induced benefits are included, this increases to [8,300 jobs and £443m GVA](#) per year. Although the indirect and induced effects are not necessarily located in tidal flood plain area, they depend on it – such as businesses supplying the renewable energy sector operations. [The study found that the future economic footprint of the area could support 12,000 direct jobs which could generate £641m of annual GVA, increasing to 15,600 Jobs and £833m GVA per year when indirect and induced benefits are considered.](#)

The study concluded that that under the current flood risk management conditions (Do minimum) with no formal tidal defences [30% of jobs and 30% of GVA](#) within the current economic footprint of Lowestoft are impacted in a 0.5%AEP (1in200yr) tidal flood event. Once climate change is considered the level of impact increased [62% and 62% respectively](#). The provision of tidal defences to the 0.5% AEP standard

would reduce this impact to 6% for the current economic footprint and 22% for the future economic footprint when climate change is taken into account.

In addition, the decline of previous industrial operations has left a legacy of large areas of derelict waterfront land and severe social challenges. Partly due to the costs of site-level flood mitigation to reduce the risk of flooding to a 1 in 200 level necessary to make commercial development viable, flood risk is significant barrier to business growth and job creation. Therefore, by addressing flood risk, the LFRMP will significantly reduce the likelihood of severe direct and indirect economic impact and unlock future growth and investment. As a result, studies show that the LFRMP will support the generation of 5,600 additional direct jobs locally and 1,700 indirect and induced jobs nationally. It will also support the generation of an additional £299m GVA in the area per year.

Future development of the local economy was also considered, and the report concluded that the construction of tidal flood defences 'Will lessen the likelihood of economic devastation as well as removing potential barriers to growth and investment by current and future businesses in the area.'

Whilst this assessment is not considered in the national economic analysis undertaken for this FCERM business case it is a critical driver for other sources of funding and is a key piece of supporting evidence for the NALEP funding business case (Appendix N2) illustrating the wider benefits of providing flood risk reduction to Lowestoft.

3.8. Preferred economic option (Tidal)

The appraisal of tidal options has confirmed that Option 5c – Bascule Bridge barrier and walls with a 1in200 year (0.5% AEP) SoP is the most economically advantageous and the national economic preferred option for the management of tidal flood risk in Lowestoft.

Table 3.12 summarises the outcome measures associated with the implementation of Option 5c with a 1in200 year (0.5% AEP) SoP and considering the 95%ile QRA risk plus adjusted optimism bias. Full details are included in the tidal partnership funding calculator included in Appendix A1.

Table 3.12 – Nationally Economically Preferred tidal option Outcome Measures (costs with 95%ile risk and adjusted OB)

Contributions to applicable outcome measures	Value
Outcome 1 – Ratio of whole-life benefits to costs	
Present value benefits (£k)	119,197
Present value costs (£k)	112,881
Benefit: cost ratio (Partnership Funding Calculator BCR)	1.1
Outcome 2 – Households and NRP at reduced risk	
rOM2A - Number of households better protected against flood risk (today)	226
rOM2A.b - Number of households moved from the 'very significant', 'significant' or 'intermediate' flood risk bands to lower flood risk bands	126
rOM2A.c - Number of households moved out of the 'very significant', 'significant' or 'intermediate' flood risk bands to lower risk bands in the 20% most deprived areas	125
rOM2A.PLP - Number of households moved from the 'very significant', 'significant' or 'intermediate' flood risk bands to lower flood risk bands through PLP measures	-
rOM2B - Additional households better protected against flood risk in 2040 (adaptation)	42
rOM2B.b - Additional households moved from the 'very significant', 'significant' or 'intermediate' flood risk bands to lower flood risk bands in 2040 (adaptation)	-
rOM2B.c - Number of households moved out of the 'very significant', 'significant' or 'intermediate' flood risk bands to lower risk bands in 2040 in the 20% most deprived areas (adaptation)	-
rOM2.NRP - Number of non-residential properties better protected against flood risk	152

Contributions to applicable outcome measures	Value
rOM2A.NRP - Number of non-residential properties better protected from flood risk (today)	137
rOM2B.NRP - Number of non-residential properties better protected from flood risk in 2040	15
Partnership funding & FCERM-GiA	
Raw Score	10%
Partnership contribution required to achieve 100% (capital Investment) (£k)	87,804
FCERM-GiA available (assuming partnership contribution achieved) (£k)	9,418

3.9. Sensitivity analysis (Tidal)

The tidal economic analysis assessed a number of sensitivity tests as part of the economic analysis further detail is included in the Section 6.1 of the Tidal Economic Appraisal Note (Appendix E1). The main observation was that costs would have to increase (or benefits reduce) by a factor of 6% to become uneconomic with a BCR below 1. This would be an increase in cost (or reduction in benefits) of £6.3 million.

PF calculator sensitivity

The partnership funding calculator includes a number of sensitivity tests detailed in Table 3.13.

Table 3.13 – Tidal preferred option outcome measures sensitivity tests

PF calculator sensitivity test	Raw score
Main scenario	10%
Sensitivity 1 - Change in PV Whole Life Cost (25% increase)	N/A*
Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band	10%
Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss	N/A
Sensitivity 4 - Increase Duration of Benefits by 25%	10%
Sensitivity 5 - Reduce Duration of Benefits by 25%	10%
Sensitivity 6 - Strategic considerations not demonstrated	4%
Sensitivity 7 - Change in environmental habitat optimistic	N/A

* Reduces BCR to 0.9 so does not qualify for PF GiA

These sensitivity tests indicate that the project is most susceptible to an increase in PV whole life costs where a 25% increase in cost would result in a reduction of the BCR (PF calculator) to 0.9 and therefore does not qualify for PF GiA. The risk of this scenario occurring has been mitigated thorough through option delivery costing, taking a conservative assessment of whole life costs and making robust risk allowances.

Threshold level sensitivity

The sensitivity of the economic analysis to changes in threshold levels of +/- 0.1m considered. The impact this change was indicated to be changes in total benefits of +15% and -19%. A reduction in benefits of 19% would reduce the PF BCR to 0.9 and an increase of 15% would increase the PF BCR to 1.2.

Climate change and CFB change Sensitivity

Climate change guidance and the coastal flood boundary data set have both been updated since the projects hydraulic modelling was initial completed in 2017. In the interests of efficiency, it was agreed that a sensitivity analysis would be undertaken to consider the relative impacts of these changes on the project's economic analysis. Detailed discussion of this sensitivity test can be found in Section 6.1.1 of the Tidal

Economic Appraisal Note (Appendix E1). This sensitivity test concluded that whilst it was not possible to quantify the precise effect of these changes on the benefits calculation on balance it is likely there is a small overestimation of the damages due through the continued use of the 2017 modelling. Given the fact the economic analysis has omitted a number of benefit categories in the assessment in the interests of proportionality it is considered that the current assessment is considered to be lower-bound. In particular should a small percentage of the excluded recreational benefits be included in the analysis this could balance a slight reduction due to change in model boundary conditions. It is also considered that the change of modelled boundary conditions would have no significant impact on the selection of the nationally economically preferred option.

Sensitivity to tidal surges

As mentioned in the Strategic Case (Section 2.1) Lowestoft's Low tidal range makes the town increasingly vulnerable to the effects of tidal surges. Recent studies (inc. Assessment of tidal range changes in the North Sea from 1958 to 2014. *Journal of Geophysical Research: Oceans*¹³) have indicated that observed changes in the North Sea amphidromic point locations due to greater mean depth combined with impacts of surges and climate change impacts could impact Lowestoft more than most other locations. This could result in increased extreme water levels as the effects of climate change become more pronounced. Further detailed assessment would need to be completed to fully understand these potential impacts. As noted above the sensitivity to sensitivity for thresholds levels indicated a decrease of -0.1m (or increase in water level of +0.1m) would generate an additional £17.9m of benefits. Whilst this would not make the local choice options cost beneficial it strengthens the position of the nationally preferred economic option.

3.10. Local Choice

As mentioned above, ESC has selected a local choice option to deliver a 40m wide tidal barrier and flood walls to provide an increased level of resilience to the tidal barrier and lessen future constraints on future changes to the Lake Lothing entrance channel. In line with Local Choices framework under the PF policy, the additional costs for delivering the Local choice option over the national economically preferred option need to be funded entirely through contributions.

The project will deliver National Government outcomes for at least six Government Departments and contribute significantly to the growth of the economy.

The scheme aims to underpin the wider development of Lowestoft port as a central hub for marine and offshore industry notably supporting an accelerated delivery programme for Associated BP LEEF project and as a marine transport hub for the Sizewell C nuclear power station (national infrastructure project).

The selection of a 40m wide tidal barrier for delivery over the 28m barrier option delivers a number of additional benefits that cannot be fully represented in the FCREM economic appraisal:

- Increases the resilience and reliability of the tidal barrier when considering ship impacts.
- Creates adaption pathways to future proof the Port by placing less of a restriction on any potential future widening of the Lake Lothing entrance channel, enabling future growth opportunities for the Port and Lowestoft.

¹³ Jänicke, L., Ebener, A., Dangendorf, S., Arns, A., Schindelegger, M., Niehüser, S., Haigh, I. D., Woodworth, P. and Jensen, J., 2021. Assessment of tidal range changes in the North Sea from 1958 to 2014. *Journal of Geophysical Research: Oceans*, 126(1), p.e2020JC016456.

Delivery of the 40m barrier also provides an opportunity for an accelerated delivery approach which has been referred to as the unconstrained delivery option (Option 9LCU). This brings with it the following additional benefits:

- Reduces the programme for completion of the tidal defences by 2 years, reducing the period that Lowestoft does not benefit from a reduction in tidal flood risk. Reducing the risk to both property and people's health.
- Projected delivery efficiency of £6.5m in PV terms and £9.9m in cash terms
- Accelerated delivery of the tidal defences supports the delivery of the ABP LEEF project.

Whilst the local choice options are shown to have BCR's of less than 1, consideration has been given to potential benefits that have not been included in the economic appraisal. As detailed in the Tidal Economics report (Appendix E1) A potential benefits pool of £194m (PV) associated with the Tourism and reputational damages (principally reputational damage) has been identified but not included due to approximate nature and subjectivity around the assessment. A rough calculation indicates that inclusion of 11% of these potential damages as benefits would be sufficient to provide the unconstrained delivery local choice option (Option 9LCU) with a BCR of greater than 1.

4. The pluvial fluvial FRM economic case

The pluvial fluvial works (Option 6) have been completed since the 2018 OBC was assured with works to reduce the impact of pluvial flooding (surface water) completed in December 2021 and works to reduce the risk of fluvial (river) flooding were completed in July 2021. The fluvial works were delivered as planned and inline with the information outlined in the sections below. Due to a lower than expected uptake of PLR (pluvial) measures by residents and property owners PLR measures were installed in 120 properties. Example photographs of the completed pluvial and fluvial works are included in Appendices C6.

The text below remains the same as in the 2018 OBC and **has not been updated** with financial values and the economic assessment unchanged from the original submission.

4.1. Introduction (Pluvial Fluvial)

The development and economic appraisal of the pluvial fluvial element of the project is fully documented in the Pluvial Fluvial Options¹⁴ and Economic Analysis¹⁵ reports (Appendix F1 and E4 respectively), the following sections present the key information from this reporting which builds on work undertaken at SOC stage in the Lowestoft Drainage Strategy - Pluvial / Fluvial Options Report¹⁶ (Appendix F19). As stated in Section 3.2, the pluvial fluvial and tidal economic cases have been separated to improve clarity of the relative benefits and funding sources.

¹⁴ Pluvial fluvial options report, JBA, 2018

¹⁵ Pluvial fluvial economic appraisal Report, JBA, 2018

¹⁶ Lowestoft Flood Risk Management Strategy, Lowestoft - Fluvial / Pluvial Options Report, Atkins, Dec 2016

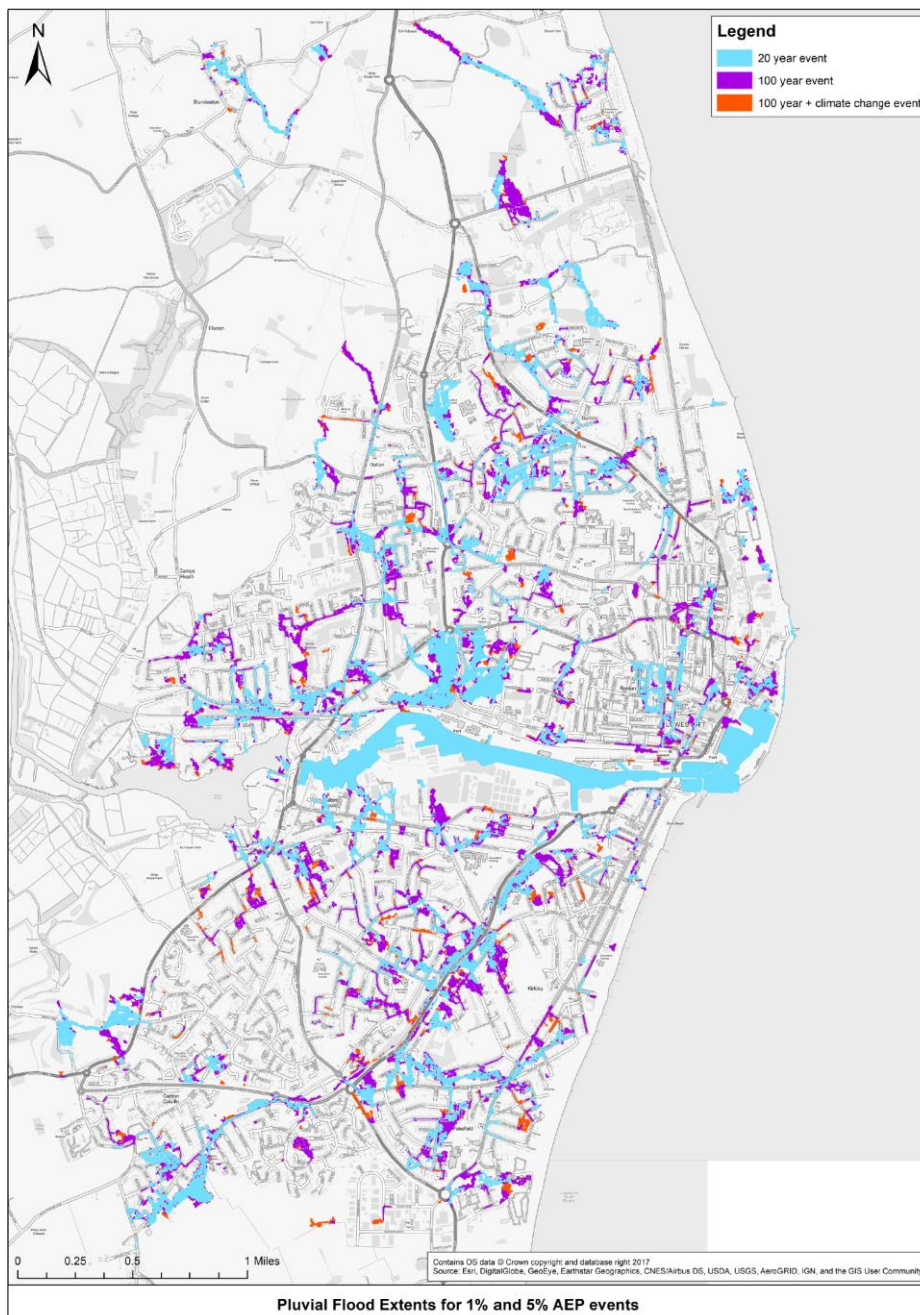


Figure 4.0 pluvial flood extents in study area

4.2. Critical success factors (Pluvial Fluvial)

The factors in Table 4.1a have been used to inform the assessment of the pluvial/ fluvial flood defence options considered in this OBC these have been significantly refreshed since SOC stage.

Table 4.1a Critical Success factors – Pluvial/Fluvial

No	Critical Success Factor	Measurement Criteria	Importance (1-5)
1	Strategic fit and business needs	<ul style="list-style-type: none"> Adapting to climate change. Delivery of strategic management plan Publicly supported. 	1
2	Value for money	<ul style="list-style-type: none"> Protect and enhance the local economy by avoiding flood damage to residential and commercial properties, economic assets, and infrastructure. Positive Net Present Value. Increase the life-span of adjacent properties and assets. 	2

3	Potential achievability	<ul style="list-style-type: none"> Local authority capacity to produce and manage the project. Key project stakeholders are supportive of proposals, giving positive feedback. Community are aware and understand project drivers and timescales. 	3
4	Supply side capacity	<ul style="list-style-type: none"> Supply side capability to deliver affordable solution within the timeframe. 	4
5	Potential affordability	<ul style="list-style-type: none"> Achievable within government funding. Further efficiency savings identified as the preferred option is further developed. 	5

The options report also identifies a second set of specific objectives for the management of pluvial fluvial flood risk included in Table 4.1b.

Table 4.1b Pluvial/Fluvial specific objectives

No	Fluvial/Pluvial Outline Business Case Objectives
1	Reduce the risk of household flooding.
2	Support amenity and regeneration in Lowestoft.
3	Maintain and enhance natural, historic, visual and built environments.
4	Promote sustainable management of existing watercourses and drainage networks.
5	Ensure an affordable and deliverable whole life option through a partnership approach and contributions.
6	Ability to secure funding.

4.3. Long list options (Pluvial Fluvial)

A number of options were considered for the management of pluvial fluvial flood risk in Lowestoft. Options 1 to 15 focused primarily on fluvial flooding in the area around The Street in Carlton Colville, Tom Crisp Way and Aldwyck Way and Velda Close. Options 16 to 19 focused primarily on reducing flooding from pluvial sources in the Lowestoft area, with particular attention to areas identified to be at risk. These are summarised in Table 4.2. Further information/detail can be found in the Options Report (Appendix F1).

Table 4.2 – Pluvial/Fluvial Long list of options

Option	Description	Flood Mechanism	Short list or rejection
Do Nothing	No maintenance of existing systems	Fluvial and Pluvial	Shortlist (baseline for economics)
Do minimum	Continue to maintain existing drainage systems	Fluvial and Pluvial	Shortlist (baseline)
LL_01	Create new storage and restrict flows	Fluvial	Shortlist Option 1
LL_02	Additional storage in existing green spaces	Fluvial	Shortlist Option 1
LL_03	Re-routing of the watercourse	Fluvial	Shortlist Option 1 and 2
LL_04	Reducing flows from upstream watercourses	Fluvial	Shortlist Option 1
LL_05	Throttle flows to use capacity in existing drainage system	Fluvial	Rejected
LL_06	Creation of embankments	Fluvial	Shortlist Option 2
LL_07	Installing a two-stage channel in Kirkley Stream	Fluvial	Shortlist Option 1 and 2
LL_08	Earlier operation of surface water pumps	Fluvial	Shortlist Option 2
LL_09	Increasing capacity of existing storage areas	Fluvial	Shortlist Option 1
LL_10	Removal of silt and re-grading of the watercourse	Fluvial	Rejected
LL_11	Install non- return valves on the network.	Fluvial	Shortlist Option 4
LL_12	Not used	Not used	-
LL_13	Installing local mitigation measures	Fluvial	Shortlist Option 5
LL_14	Optimising throttles in the river	Fluvial	Shortlist Option 2

Option	Description	Flood Mechanism	Short list or rejection
LL_15	Strategic non-return valves and underground storage	Fluvial	Shortlist Option 4 (NRV's only)
LL_16	Offline storage in the public sewer system	Pluvial	Rejected
LL_17	Increased conveyance in the public sewer system	Pluvial	Rejected
LL_18 & LL_19	Implementation of SuDS (20% & 40 reduction in impermeable are in each TARZ).	Pluvial	Shortlist Option 3

A detailed description of why options were shortlisted or rejected can be found in sections 4.3 and 4.4 of the pluvial fluvial options report (Appendix F1).

At SOC stage the benefit of utilising a tidal barrier for water level management to reduce the period of tide locking for the Kirkley Stream and other outfalls was considered. It was rejected due to significant impacts on navigation and the tidal regime within Lake Lothing, this option was not re-considered at OBC stage.

4.4. Shortlisted options (Pluvial Fluvial)

Overview

The five shortlisted improvement options for providing pluvial fluvial flood defence to Lowestoft taken forward following consultation and agreement with the project's key stakeholders are listed in Table 4.3 with a summary description of each option. Further detail describing each option can be found within the Lowestoft Fluvial/Pluvial Options report which is included in Appendix F1.

Table 4.3 – Pluvial/Fluvial short list of options




Short listed Option	Option Description
Do minimum – maintain	Continued maintenance of the existing drainage network as is currently undertaken.
1 Storage (Fluvial)	<p>Increase the storage capacity along the Kirkley Stream.</p> <p>Long list options 1, 2, 3, 4, 7 and 9 were progressed and included in the shortlisted option 1, which focuses on storage of storm water. Long list options 1, 3, 4 and 9 produced beneficial results to lower flood risk and long list option 2, although it did not show any specific benefit in flood risk reduction was included to investigate linkage with wider strategic storage option.</p>
2 Conveyance (Fluvial)	<p>Increasing conveyance of water along the Kirkley Stream.</p> <p>Conveyance (Fluvial): long list options 3, 6, 7, 8 and 14 were progressed and included in short list option 2 which focuses on increasing fluvial conveyance. Long list options 6 and 7 showed limited benefit and long list option 14 did not bring benefits but these options were considered as part of a wider strategy.</p>
3 SUDS (Pluvial)	<p>Sustainable Urban Drainage Systems</p> <p>SuDS (Pluvial): long list options 18 and 19 were progressed to shortlist options 3a and 3b, focusing on the implementation of SuDS to reduce impermeable areas by 20% and 40% respectively. Both long list options showed significant flood risk reduction and were therefore investigated further as part of a shortlisted option.</p>
4 Non return Valves (Fluvial)	<p>Installing non-return valves (to reduce the risk of water from Kirkley Stream backing up into the drainage network).</p> <p>long list option 15 showed no benefit, however, the use of non-return valves was decided to be investigated further as a widespread use.</p>
5 Property Level Resilience (PLR)	<p>Local mitigation measures such as property level resilience measures</p> <p>long list option 13 involves local mitigation measure and would, by nature, benefit each property where these would be installed.</p>




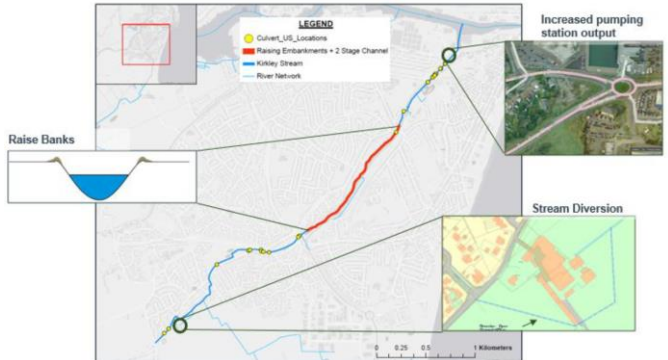
Technical assessment

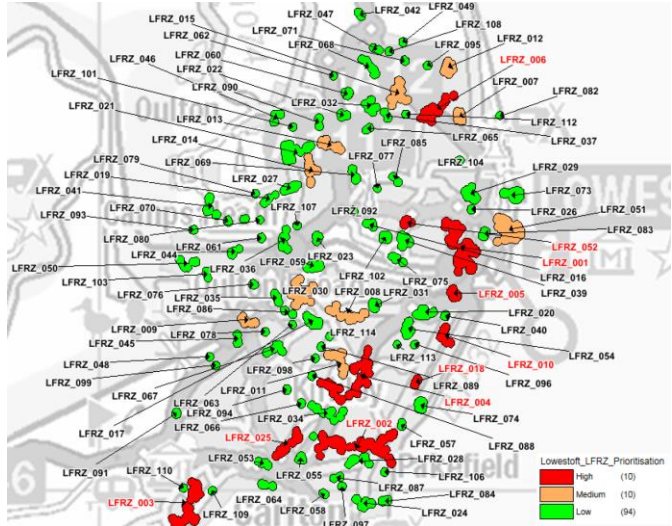
Table 4.4 contains a summary of the technical description of options for the reduction of pluvial fluvial flood risk. This table is summarised from Section 5 (Options Appraisal

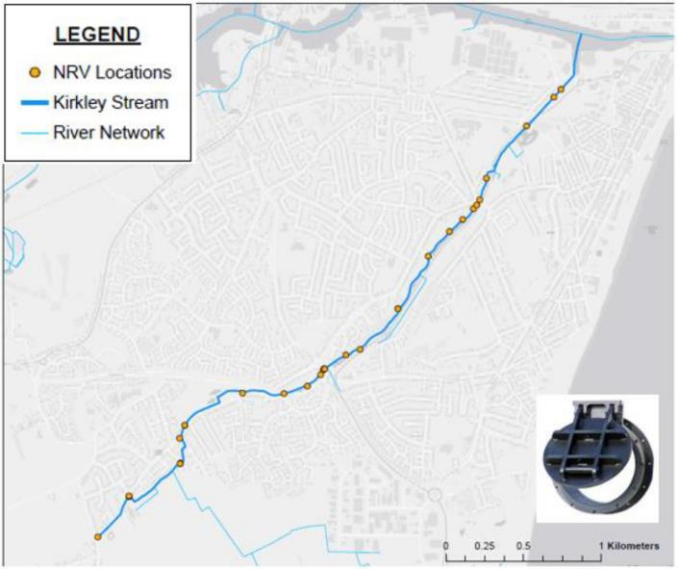
and Comparison) of the Pluvial Fluvial Options Report Appendix F1). Further non-technical details of the shortlisted options can be found within the Lowestoft FRMP public consultation document (Appendix G2).


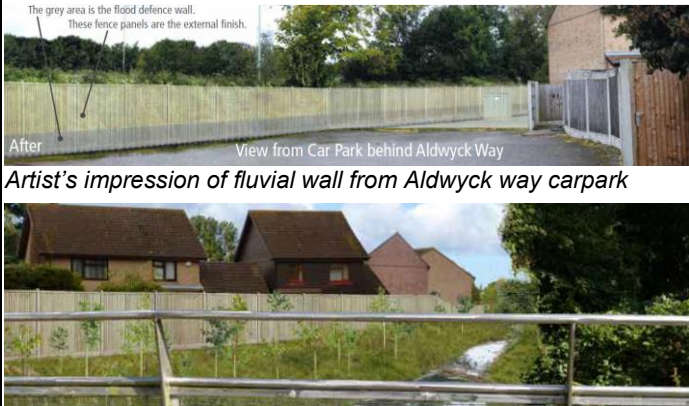
Table 4.4 – Technical description of Pluvial/Fluvial short list of options

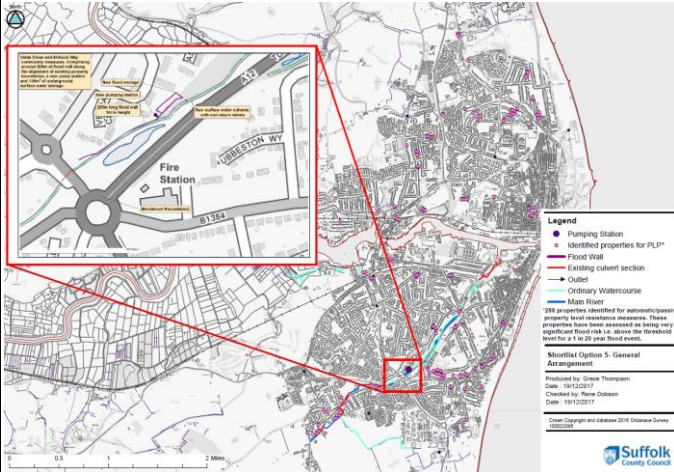
Shortlisted Option	Option Technical Description and Technical Assessment	Taken forward / rejected
Do minimum – maintain	Continued maintenance of the existing pluvial fluvial drainage systems.	<i>Option taken forward as baseline</i>
1 Storage (fluvial)	<p>The option seeks to increase of storage along the Kirkley Stream through the construction of following:</p> <ul style="list-style-type: none"> Construct 3,400m³ of storage in Meadow Park as offline flood storage.  <ul style="list-style-type: none"> Construct 15,100m³ of storage upstream of Carlton Colville  <ul style="list-style-type: none"> Implement a two stage channel from Bloodmoor Roundabout to the New Road bridge.  <ul style="list-style-type: none"> Re-establish the maximum design capacity in the existing storage area off Tom Crisp Way. 	<i>Option rejected.</i>

Shortlisted Option	Option Technical Description and Technical Assessment	Taken forward / rejected
	 <p>Although technically feasible, the land needed to incorporate sufficient flood storage is not available at this time. The two-stage channel option is also technically feasible, but the environmental impact would be detrimental and is therefore rejected.</p>	
2 Improve conveyance (fluvial)	<p>The option involves the following components to increase conveyance along the Kirkley Stream:</p> <ul style="list-style-type: none"> Divert the Kirkley Stream around Belle Vue Farm. The new culvert (2000mm x 2000mm) connects into the existing tributary to the south of the existing route. Diverted flow reconnects downstream into the Kirkley Stream.  <ul style="list-style-type: none"> Raise river banks on the Kirkley Stream from the Bloodmoor Roundabout to New Road bridge totalling 2.98km.  <ul style="list-style-type: none"> Upsize 27 culverts along Kirkley Stream by 25%. Increase Kirkley Stream terminal pumping station output capacity from 1.2m³/s to 5.35m³/s 	Option rejected.

Shortlisted Option	Option Technical Description and Technical Assessment	Taken forward / rejected
	<p>The diversion of the Kirkley Stream around Belle Vue Farm is technically feasible as an open channel but increases flows routed to Low Farm Drive and therefore flood risk. This option could only be completed in conjunction with the flood storage considered and rejected in Option 1. The sub-options to create new flood embankments and increase the capacity of 27 culverts is not technically feasible as there is insufficient space to construct the structures. However, the hydraulic modelling of increased capacity of the Kirkley Stream pump station did not show any damages averted and was therefore rejected.</p>	
<p>3a & 3b SUDS (Pluvial)</p>	<p>Options 3a and 3b seek to reduce the amount of impermeable area which generates runoff from entering the existing sewer system by 20% and 40% respectively through the implementation of SuDS. As part of the OBC options appraisal, further investigation into the opportunities available for SuDS was undertaken.</p> <p>The technical assessment of replacing impermeable surfaces with permeable surfaces, was completed focusing on the following points:</p> <ul style="list-style-type: none"> • Identification of Target Area Reduction Zones highlighted in the Drainage Strategy prepared for the SOC. • Estimation of impermeable areas within them using the Lowestoft Mastermap in ArcGIS. • Differentiation of impermeable areas within roads and buildings and identification of potential areas for the implementation of SuDS such as roads with existing green verges, large commercial buildings, parking spaces or green spaces where surface water could be routed for formal and informal temporary storage. • Estimation and review of the proportion of impermeable area reduced by the implementation of the highlighted SuDS opportunities in each TARZ.  <p>Option 3 (SuDS retrofit) options are not technically feasible as only around 10% to 15% impermeable area could be retrofitted into permeable areas among the flood risk zones and Option 4 did not show any damages averted</p>	<p><i>Options rejected.</i></p>
<p>4 Non-return Valves (fluvial)</p>	<p>Option 4 included the incorporation of non-return valves on all surface drainage outfalls along the Kirkley Stream to prevent river locking of the drainage network or back flow into the drainage network and causing flooding. 29 NRVs were therefore added to the OBC model and reviewed.</p>	<p><i>Options rejected.</i></p>

Shortlisted Option	Option Technical Description and Technical Assessment	Taken forward / rejected
	 <p>The hydraulic modelling indicates that there is no direct benefit of implementing non-return valves on all surface drainage outfalls. This option was therefore rejected.</p>	
5 Property Level Resilience (PLR)	<p>Option 5 looks at the introduction of Property Level Resilience on a large scale to protect properties that fall within the very significant flood risk banding. The technical assessment of this option included a desk study complemented by a site visit inspection to validate potential local scheme feasibility and investigate areas where information was missing. It was proposed that in areas where Property Level Resilience was proposed for multiple properties there would be potential to install community schemes that could mitigate against local surface water flood risk and provide wider benefits.</p>	<p><i>Option taken forward as Option 6 when combined with 5b.</i></p>

Shortlisted Option	Option Technical Description and Technical Assessment	Taken forward / rejected
	 <p>PLR property Locations</p> <p>This option is potentially technically feasible subject to confirmation by detailed property surveys. The measures need to be effective against short duration high intensity rainfall events, which are difficult to predict and have very little advanced warning. Therefore, the PLR needs to be an automatic/passive system that operates without the need for assembly.</p>	
<p>5b Community scheme at Velda Close and Aldwyck Way</p>	<p>Fourteen sites with potential for community schemes were identified as part of a desk study for Option 5b and their practicability and suitability assessed during a site survey. The on-site investigations revealed that none were obviously suitable with the exception of properties at Velda Close and Aldwyck Way.</p>  <p><i>Artist's impression of fluvial wall from Aldwyck way carpark</i></p> <p><i>Artist's impression of fluvial wall from footbridge adjacent to Bloodmoor Road towards Velda Close properties.</i></p>	<p><i>Option taken forward Option 6 when combined with 5.</i></p>

Shortlisted Option	Option Technical Description and Technical Assessment	Taken forward / rejected
	<p>A number of options and configurations were considered for Velda Close and Aldwyck Way. The technical assessment indicates that the preferred scheme is direct defence along the Kirkley Stream, approximately 200m long by around 1m high (top of existing bank level), with a pump station with a capacity of around 300 l/s.</p> 	

Full details of the technical assessment of the shortlisted options is presented in Section 5 of the Pluvial Fluvial Options report (Appendix F1). Annex B of the options report presents the Options Appraisal Summary Table which highlights the key technical differences between the shortlisted options.

Environmental assessment

At SOC stage a detailed a SEA Environmental Report (annex to Appendix H1) was produced, assessing the potential environmental impacts, in combination effects and identifying enhancement opportunities for all shortlisted options. Strategic WFD and HRA assessments were also completed (Appendix H3 and H5 respectively). Further option development at OBC identified an additional shortlisted option (Option 6 – PLR and Velda Close wall). A Preliminary Environmental Information Report (Appendix H1) and revised WFD and HRA assessments have also been produced for the preferred option. Table 4.5 summarises the key environmental effects and opportunities for the revised shortlisted pluvial fluvial options and has been refreshed for the preferred option, highlighting any changes as a result of the more detailed assessment, please note that with the exception of Option 6, reference to property numbers is based on SOC stage and differ from OBC stage. This is not considered to be of concern as these options were removed from the shortlist for other technical reasons as detailed in the Options Report (Appendix F1).

Table 4.5 – Key environmental effects and opportunities (pluvial fluvial)

Shortlist option 1: Storage (fluvial) (SOC option – 1 Upstream storage)	
Key positive effects	<p>Option is likely to reduce flood risk to three commercial (SOC stage) and one residential (SOC stage) properties for a 1in75 year return period (and one commercial and two residential properties, for a 1in75 year RP+ climate change). As the benefit is only partial, a minor positive effect has been predicted.</p> <p>Storage may provide opportunities for habitat improvement/enhancement, positively affecting biological elements for example by providing an offline refuge for fish or improving opportunities for aquatic invertebrates. These improvements depend on the design specification but adverse effects to waterbodies are not anticipated.</p>
Key negative effects	<p>Where upstream storage is proposed at Carlton Colville, dependent on current land use (if for farming) and the proposed design, the option may affect farming practice for a small population, details of which are not known at this stage therefore uncertain effect</p>

	<p>(as part of split assessment) predicted against economic development objective. (uncertain effect).</p> <p>Southern part of the area is within the Hundred Tributary Valley Farmland Landscape Character Area; effect of the storage facility on this area will be dependent on the design. (uncertain effect).</p>
Mitigation or enhancement opportunity	Potential for habitat creation as part of storage areas.
Shortlist option 2: Improving conveyance (Fluvial)	
Key positive effects	None identified
Key negative effects	<p>Although the option will reduce flood risk to nine residential properties (SOC stage) and six 'other' type properties, it is likely to introduce risk of flooding to eight residential (SOC stage) properties for a 1in75 year RP; similarly, in a 1in75 year RP+ climate change, the option might increase the risk of flooding to 13 residential properties, but reduce the risk to some 22 residential properties, minor positive impact in the long term, but negative and positive effect in the short to medium term.</p> <p>Short term negative effect on biodiversity to vegetation clearance and disturbance to habitats may occur.</p>
Mitigation or enhancement opportunity	Consideration could be given to the river restoration techniques, where compatible with the option aim of improving conveyance.
Shortlist option 3a: Sustainable Drainage Systems (Pluvial - 20% permeable surface)	
Key positive effects	<p>Option 3a (20% reduction) is likely to reduce the risk of flooding to 57 residential (SOC stage) and three commercial (SOC stage) properties for a 1in75 year RP and for 54 residential and nine commercial properties for a 1in75 year RP + climate change, therefore minor positive effect predicted for the population and human health and economic development objectives.</p> <p>Proposed option is likely to help reduce risk of flooding to key infrastructure such as the A12 and A117, Wellington Esplanade (B1532), A146/B1531, A146/Bridge Road and on the access road to Oulton Broad South Rail Station and part of the A12, linking to the Outer Harbour area and to the Lowestoft Station.</p>
Key negative effects	LFRZs 001, 004, 007, 008, 009 and 052 are known to contain historic landfill sites. Dependent on the location and works involved to construct and maintain SUDS, the proposed option might have a neutral or a negative effect on the land contamination objective (assuming without appropriate mitigation).
Mitigation or enhancement opportunity	Habitat creation as part of SUDS system may be possible depending on the systems used.
Shortlist option 3b: Sustainable Drainage Systems (Pluvial - 40% permeable surface)	
Key positive effects	<p>Option 3b (40% reduction) is likely to reduce the risk of flooding to 150 residential (SOC stage) and 27 commercial properties (SOC stage) for a 1in75 year RP and for 56 residential and nine commercial properties for a 1in75 year RP + climate change. This implies significant positive effect in the short to the medium term, but in the long term (with climate change) both options appear to provide similar benefits in terms of property protection, therefore minor positive predicted for Option 3b in the long term under the population and human health and economic development objectives.</p> <p>Proposed option is likely to help reduce risk of flooding to key infrastructure such as the A12 and A117, Wellington Esplanade (B1532), A146/B1531, A146/Bridge Road and on the access road to Oulton Broad South Rail Station and part of the A12, linking to the Outer Harbour area and to the Lowestoft Station.</p> <p>Due to scale and coverage of SUDS, this option is likely to support species and habitats at local nature reserves/ county wildlife sites, Habitats of Principal Importance of wood pasture and parkland in the Carlton Manor area and the priority habitat area of deciduous woodland.</p>
Key negative effects	LFRZs 001, 004, 007, 008, 009 and 052 are known to contain historic landfill sites. Dependent on the location and works involved to construct and maintain SUDS, the proposed option might have a neutral or a negative effect on the land contamination objective (assuming without appropriate mitigation).
Mitigation or enhancement opportunity	Habitat creation as part of SUDS system may be possible depending on the systems used.

Shortlist option 4: Non-return Valves Fluvial (SOC option 4 Non-return Valve installation)	
Key positive effects	Option 4 is likely to reduce impact on one commercial/ tourism related property for a 1in75 year RP scenario, minor positive effect on economic development.
Key negative effects	Although the option will reduce flood risk to two residential properties, it is likely to introduce risk of flooding to one residential property at in a 1in75year RP, but the risk in a 1in75 year RP+ climate change increases to three residential properties with no risk reduction to any property; therefore, not supportive of the population and human health objective for the short-term and the long-term.
Mitigation or enhancement opportunity	None identified
Shortlist option 5a: Local mitigation – Property Level Resilience	
Key positive effects	Assuming the Property Level Resilience (passive) features function correctly, the proposed option is likely to reduce the risk of flooding to 274 residential properties (SOC stage, 281 at OBC stage), and ten commercial properties (SOC stage) representing a significant reduction therefore assigned major positive effect. If historic buildings benefit from PLR, the option will be supportive of the Cultural Heritage objective.
Key negative effects	None assessed
Mitigation or enhancement opportunity	None assessed
New combined Option 6: Property Level Resilience & Community scheme at Velda Close and Aldwyck Way	
Description	This option was not considered at SOC stage and was introduced at OBC stage as a combination of shortlisted Options 5 and 5a. Shortlist option 5a was developed following revised hydraulic modelling undertaken at OBC stage. Further detail of the environmental assessment of this option is contained within the PEIR (Appendix H1) and is summarised below.

PEIR & HRA

A single Preliminary Environmental Information Report (Appendix H1) and HRA (Appendix H3) have been prepared to consider all components of the LFRMP, i.e. tidal, fluvial and pluvial. The key findings of this relevant to all LFRMP components are summarised in Section 3.4 of this OBC.

WFD Assessments

WFD assessments have been completed at both SOC and OBC stages. The SOC stage assessment (Appendix H5) considered all strategic options and concluded that the proposed strategy was not predicted to cause deterioration in waterbody status or prevent the waterbody from meeting its objectives and therefore further assessment against the conditions listed in Article 4.7 is not required. Therefore, the Strategy is compliant with WFD, and no further assessment is required. Further stages of the Strategy should however re-evaluate the risk to the waterbodies when further engineering details become available.

The OBC stage WFD assessment (Appendix H5) considered the preferred option and concluded that the works associated with delivering the fluvial pluvial preferred option would not lead to any significant effects on the WFD waterbodies and have therefore been scoped out of further assessment. Table 4.6 summarises waterbodies in the assessment and identifies the waterbodies considered.

Table 4.6 Extract from WFD assessment, Appendix H5 (Table Error! No text of specified style in document..2: Scoping of project components for detailed assessment)

Project component	Element	Scoped in or out?	Relevant WFD water body(s)
Fluvial	Flood walls along Kirkley Stream from Bloodmoor roundabout culvert for 200m downstream (construction and operation)	Scoped out – the flood walls would be set back from the channel bank. There would be some removal of riparian vegetation, however, re-planting is proposed along the slope face. If during construction the channel bank were to be altered, it would be reinstated as per the baseline conditions	Waveney (Ellingham Mill - Burgh St. Peter) fluvial WFD water body Broadland Rivers Chalk and Crag WFD groundwater
	New pumping station - below ground (construction and operation)	Scoped out – set back from the banks of Kirkley Stream. There would be a new discharge point to the watercourse, but this is highly unlikely to lead to any significant effects to the channel or at a WFD waterbody scale. Therefore, no further assessment has been deemed as required for this scheme element	Waveney (Ellingham Mill - Burgh St. Peter) fluvial WFD waterbody Broadland Rivers Chalk & Crag WFD groundwater
	New flood storage area - below ground (construction and operation)	Scoped out – the water tank is proposed to be located at a level of 0.1m AoD beneath a car park. The water tank would be sealed and therefore it would be highly unlikely to have any significant effect at a WFD waterbody scale on groundwater	Broadland Rivers Chalk and Crag WFD groundwater
Pluvial	Direct defences at 281 properties across Lowestoft. The detail is to be confirmed but could include: flood doors, water proofing, water resisting air bricks, non-return gullies and valves and internal sump pumps (construction and operation)	Scoped out – would be unlikely to lead to any direct or indirect effects to surface watercourses or groundwater as a consequence of localised improvements around individual properties	Not applicable

4.5. Economic appraisal (Pluvial/Fluvial)

The economic appraisal undertaken for the pluvial fluvial options appraisal is contained within the Economic Appraisal Report (Appendix E3).

Options assessed

Further option assessment was undertaken, considering in detail each shortlisted option's suitability against the critical success factor and the technical practicalities of delivery to determine if each shortlisted option should be taken forward for outline design and economic appraisal. Further detail is presented in Section 1.5 of the Option Appraisal Report (Appendix E4), and Table 4.4 above.

Table 4.6 summarises the key option parameters that were taken forward for outline design and economic analysis.

Table 4.6 – Pluvial Fluvial final option description

Shortlisted Option	Option detail for appraisal
No Nothing	-
Do Minimum	-
5 Property Level Resilience	Property Level Resilience to 281 residential properties at risk from a 1in20 year flood. PLR options are assumed to apply to properties in the Very Significant flood risk band; assumed to be the 1in20 year flood for the purposes of this assessment. This restriction is based on partnership

Shortlisted Option	Option detail for appraisal
	funding guidance that does not allow grant in aid for properties in the Significant or Moderate flood risk bands.
6 PLR & Community scheme at Velda Close and Aldwyck Way	PLR for 281 residential properties plus a formal flood defence to protect properties at risk in Aldwyck Way and Velda Close

Benefits

The assessment of damages and benefits was undertaken in line with the requirements of FCERM-AG and further detail can be found in Section 5 of the Options Appraisal Report (Appendix E4).

The PV damages and benefits associated with each of the shortlisted options taken forward for economic appraisal are presented in Tables 4.7a and 4.7b, considering a 20 year and 100 year appraisal period respectively. The 20 year appraisal period was considered as it aligns with the duration of benefits for Option 5 (PLR) and to allow for the replacement of the PLR measures at the end of the appraisal period.

Table 4.7a – Pluvial Fluvial option (PV) damages and benefits 20 year appraisal period

Option	Damage (PVd) (£k)	Damage avoided (£k)	Benefits (PVb)
- Do nothing	31,787	-	-
- Do minimum – maintain	29,251	2,536	2,536
5 Property Level Resilience	17,463	14,324	14,324
6 Property Level Resilience and Community scheme at Velda Close and Aldwyck Way	17,410	14,377	14,377

Table 4.7b – Pluvial/Fluvial option (PV) damages and benefits 100 year appraisal period

Option	Damage (PVd) (£k)	Damage avoided (£k)	Benefits (PVb)
- Do nothing	52,460	-	-
- Do minimum – maintain	47,726	4,733	4,733
5 Property Level Resilience	23,516	28,944	28,944
6 Property Level Resilience and Community scheme at Velda Close and Aldwyck Way	22,393	30,067	30,067

Costs

The assessment of pluvial fluvial options costs is detailed fully in Section 3 of the Economic Appraisal report (Appendix E4), the following sections are summarised from this report. Costs were developed in consultation with project partners and through early contractor involvement.

Baseline

Do minimum baseline costs maintenance costs have been considered in the appraisal as follows:

- Inspection and channel clearance costs of £2,500/km/year. As the reach length is 700m long, this suggests a value of £1,725/annum.
- Periodic channel dredging based on recorded costs of £50,000 for a one-off clearance. This has been assumed to occur every 5 years under the Do Minimum option.

Scheme Costs

The total estimated cost of supplying and fitting the PLR measures is £2,392,715 including the following:

Enabling costs

- £5,000 for public engagement and surveyor procurement
- £126,450 for property surveys (at £450/property)
- £5,000 for procurement and management of contractor

PLR purchase and installation costs

- £2,392,810 for supply and fitting of PLR measures

Additional items for supervision, designer's supervision, GE book and risk derived by Balfour Beatty have also been included. Inflation costs have been omitted from the economic appraisal.

The estimated cost for the Velda Close defence is £500,600. In addition, an enabling cost for design and appraisal has been assumed of £110,000. Additional items for supervision, designer's supervision, GE book and risk have also been included.

Present Values

The costs have all been discounted over a period of 100 years (using the Treasury variable discount rate) to generate a Present Value Cost for each option, including initial capital investment and whole life maintenance costs. Where the 100 year appraisal period is considered, asset replacement (PLR) is included every 20 years. The present value whole life costs are given in Tables 4.8a and 4.8b for the 20 year and 100 year appraisal periods respectively. These include risk allowance in line with current Environment Agency risk management guidance which is further discussed in Section 3.2 of the Economic Appraisal Report (Appendix E4).

Table 4.8a – Summary of pluvial fluvial options whole life present value (PV) costs (£k) 20 year appraisal period (Table 3-2, JBA pluvial fluvial options report (Appendix F1))

Cost element	Cash Costs (£k)	PV Costs (£k)	PV Costs with Optimism Bias (£k)
Do Minimum O&M	£408	£289	£289
Do Minimum total			£291
PLR Enabling	£136	£136	£150
PLR Capital	£3,378	£3,263	£3,596
PLR O&M	£84	£59	£65
PLR Total			£3,811
Combined Enabling	£246	£246	£278
Combined Capital	£4,084	£3,946	£4,455
Combined O&M	£371	£262	£295
Combined Total			£5,029

Table 4.8b – Summary of pluvial fluvial options whole life present value (PV) costs (£k) 100 year appraisal period (Table 3-3, JBA pluvial fluvial options report (Appendix F1))

Cost element	Cash Costs (£k)	PV Costs (£k)	PV Costs with Optimism Bias (£k)
Do Minimum O&M	£2,035	£588	£764
Do Minimum total			£764
PLR Enabling	£136	£136	£150
PLR Capital (reoccurs every 20 years)	£13,085	£5,576	£6,145
PLR O&M	£294	£128	£141
PLR Total			£6,437
Combined Enabling	£246	£246	£278

Cost element	Cash Costs (£k)	PV Costs (£k)	PV Costs with Optimism Bias (£k)
Combined Capital	£13,902	£6,259	£7,067
Combined O&M	£2,015	£572	£646
Total Combined scheme			£7,991

Option ranking and economic appraisal conclusion

Tables 4.9a to 4.10b summarise information presented in Sections 5.7 and 5.8 of the Pluvial/Fluvial Options Report (Appendix F1). These tables present option rankings in terms of the 20 and 100 year appraisal periods considered in addition to the impact of contributions secured against Option 6. This economic analysis assumes 100% uptake of PLR measures, sensitivity testing has been undertaken to consider a reduced take up of the measures, this is discussed in detail in section 7.3 of the Economic Appraisal Report (Appendix E4). The 100 year duration of benefits is presented here to confirm the long term economic justification for the approach, the 20 year duration of benefits has been used to inform the calculation of partnership funding contributions.

Table 4.9a – Pluvial Fluvial short list Summary of economic analysis 20-year appraisal period excluding contributions

Option	Present Value costs (£k)	Present Value damages (£k)	Present Value benefits (£k)	Average benefit: cost ratio (BCR)	Incremental benefit cost ratio (IBCR)
- Do nothing	0	31,787	-	-	-
- Do minimum – maintain	376	29,251	2,536	6.7	-
5 Property Level Resilience	3,811	17,463	14,324	3.8	3.4
6 Property Level Resilience and Community scheme at Velda Close and Aldwyck Way	4,821	17,410	14,377	3.0	0.1

Table 4.9b – Pluvial/Fluvial short list Summary of economic analysis 20-year appraisal period including contributions

Option	Present Value costs (£k)	Present Value damages (£k)	Present Value benefits (£k)	Average benefit: cost ratio (BCR)	Incremental benefit cost ratio (IBCR)
- Do nothing	0	31,787	-	-	-
- Do minimum – maintain	376	29,251	2,536	6.7	-
5 Property Level Resilience	3,811	17,463	14,324	3.8	3.4
6 Property Level Resilience and Community scheme at Velda Close and Aldwyck Way	4,601	17,410	14,377	3.1	0.1

Table 4.10a – Pluvial Fluvial short list Summary of economic analysis 100-year appraisal period excluding contributions

Option	Present Value costs (£k)	Present Value damages (£k)	Present Value benefits (£k)	Average benefit: cost ratio (BCR)	Incremental benefit cost ratio (IBCR)
- Do nothing	0	52,460	-	-	-
- Do minimum – maintain	764	47,726	4,733	6.2	-
5 Property Level Resilience	6,437	23,516	28,944	4.5	4.3
6 Property Level Resilience and Community scheme at Velda Close and Aldwyck Way	7,991	22,393	30,067	3.8	0.7

Table 4.10b – Pluvial Fluvial short list Summary of economic analysis 100-year appraisal period including contributions

Option		Present Value costs (£k)	Present Value damages (£k)	Present Value benefits (£k)	Average benefit: cost ratio (BCR)	Incremental benefit cost ratio (IBCR)
-	Do nothing	0	52,460	-	-	-
-	Do minimum – maintain	764	47,726	4,733	6.2	-
5	Property Level Resilience	6,437	23,516	28,944	4.5	4.3
6	Property Level Resilience and Community scheme at Velda Close and Aldwyck Way	7,771	22,393	30,067	3.9	0.8

Whilst the do minimum option has the highest benefit cost ratio it was dismissed as it does not fulfil the objectives of the scheme to mitigate flood risk in a sustainable way. The economic assessment suggests that based on the Benefit-Cost Ratio, Incremental Benefit Cost Ratio and the decision rules defined by the FCERM-AG that the economically preferred option is the PLR option alone (Option 5) as the IBCR for Option 6 is less than 1, suggesting that Option 5 should be taken forward. As the wider Velda Close defence aims to provide a 100 year defence standard, in order for this option to be preferred, and following the FCERM-AG decision rule, the IBCR ratio would need to be greater than 3. Sensitivity testing shows that if the PLR take-up is less than 90% then the IBCR for Option 6 decreases to >3. Given that PLR take-up is very unlikely to be above 90% it is recommended that Option 5 is identified as the economically preferred option.

However, when stage 5 of the decision-making process is applied, considering the factors summarised in Section 4.6, the provision of PLR and the Velda Close and Aldwyck Way community scheme (Option 6) becomes the preferred option with additional costs over Option 5 being met through additional contributions in line with the Local Choices framework.

There are uncertainties in the hydraulic modelling of the area resulting in difficulties matching the historic nature of flooding in the Velda Close area. The modelling may be underestimating the flood levels in this location and the associated flood damages and option benefits, the economic assessment of this option is considered to be conservative. The development of this option considered this uncertainty and included an allowance for uncertainty with regards to water level.

4.6. Non-financial benefits appraisal (Pluvial Fluvial)

The shortlisted options were appraised based on economic, technical, environmental and social factors and considering the feedback from key stakeholders and public consultation. To assist in the appraisal of options and assess the impacts on a number of key objectives including non-financial benefits, an Appraisal Summary Tables was produced during the Outline Business Case, these are included in Appendix F14. The key non-financial benefits that confirmed Option 6 as the preferred option under 'Local Choices' are:

- The option achieves the clear stated aim of the project to mitigate against flooding to the community at Velda Close via a means other than PLR (this has been attempted in the past without significant success).
- The option will also offer private contributions to the scheme from the housing association which would not be forthcoming for a PLR only option.
- The scheme provides a long-term mitigation against flood risk to this community that may not be realised using a PLR option alone.

4.7. Preferred option (Pluvial Fluvial)

The appraisal has identified Option 6 – PLR with a community scheme at Velda Close and Aldwyck Way as the preferred option for a scheme to improve the management of pluvial fluvial flood risk in Lowestoft over a 20-year duration of benefits. Table 4.10 summarises the outcome measures that are associated with the implementation of Option 6. Full details are included in the pluvial fluvial partnership funding calculator included in Appendix A2.

Table 4.10 – Pluvial/Fluvial summary of outcome measures for Option 6 - 20 year appraisal period

Contributions to applicable outcome measures	
Outcome 1 – Ratio of whole-life benefits to costs	
Present value benefits (£k)	14,337
Present value costs (whole life) (£k)	5,028
Benefit: cost ratio	2.86
Outcome 2 – Households at reduced risk	
2a – Households moved to a lower risk category (number – nr)	271
2b – Households moved from very significant or significant risk to moderate or low risk (nr)	271
2c – Proportion of households in 2b that are in the 20% most deprived areas (nr)	108
Partnership funding & FCERM-GiA	
Raw Score	44%
Adjusted Score (assuming no contributions secured)	44%
FDGIA available cells ((11) – (2))	£2,113

As the preferred option has a lower IBCR than that needed by the FCERM-AG decision rule, **the additional costs need to be funded entirely through contributions**. This is reflected in the local choices framework under the PF policy.

In-line with the partnership funding rules, the amount of FCERM-GiA that can be claimed is based on the most economically preferred option and a partnership funding calculator has been prepared for Option 5 (PLR) which is the economically preferred option, a summary of the option outcomes and conformation of the FCERM-GiA available is presented in Table 4.10b.

Table 4.10b – Pluvial/Fluvial summary of outcome measures for Option 5 - 20 year appraisal period

Contributions to applicable outcome measures	
Outcome 1 – Ratio of whole-life benefits to costs	
Present value benefits (£k)	14,324
Present value costs (whole life) (£k)	3,811
Benefit: cost ratio	3.76
Outcome 2 – Households at reduced risk	
2a – Households moved to a lower risk category (number – nr)	264
2b – Households moved from very significant or significant risk to moderate or low risk (nr)	264
2c – Proportion of households in 2b that are in the 20% most deprived areas (nr)	101
Partnership funding & FCERM-GiA	
Raw Score	57%
Adjusted Score (assuming no contributions secured)	57%
FDGIA available (£k) cells ((11) – (2))	2,140

4.8. Sensitivity analysis (Pluvial Fluvial)

As part of the technical development of the refined shortlist of options sensitivity analysis was undertaken as detailed in Section 5.8.2 of the options report this analysis focused on the sensitivity of the Kirkley Stream to blockage at bridges and culverts. This issue was considered in detail as it has been reported (Appendix F6 -

Kirkley Stream Flood Report - October 2015) that blockages along the Kirkley Stream have exacerbated historic flooding as well as for model calibration purposes.

The economic analysis considered the following sensitivity tests: to consider a number of factors where there is uncertainty surrounding the delivery of the options and are discussed in detail in Section 7 of the Economic Appraisal Note (Appendix E4):

- Inclusion of contributions to PLR by homeowners to the value of £500/property.
- A reduction in PLR effectiveness due to longer term damage.
- A reduction in the take-up of PLR.

The first two tests indicated some sensitivity of the PF score to the tests but not enough to alter the preferred option choice. The third test considered a reduction of 25% and 50% of PLR properties, this indicated that whilst a reduction in PLR take up would reduce the amount of FCERM-GiA available, this would be broadly proportionate to the cost of delivering the remaining PLR properties. As the fluvial flood wall is being delivered through partnership funding under the 'Local Choices' framework the delivery of this element is not affected by the reduction in GiA.

In addition, the partnership funding calculator includes a number of standard sensitivity tests on the following parameters as detailed in Tables 4.11a. and 4.11b for the 20 year and 100 year appraisal periods respectively.

Table 4.11a – Pluvial Fluvial preferred option OM sensitivity tests – 20 year appraisal period

PF calculator sensitivity test	Raw score	Contributions required for 100% Score (£)
Main scenario	44%	2,653,340
Sensitivity 1 - Change in PV Whole Life Cost (25% increase)	16%	5,007,800
Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band	35%	3,113,300
Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss	44%	2,653,340
Sensitivity 4 - Increase Duration of Benefits by 25%	39%	2,890,500
Sensitivity 5 - Reduce Duration of Benefits by 25%	39%	2,893,698

Table 4.11b – Pluvial Fluvial preferred option OM sensitivity tests – 100 year appraisal period

PF calculator sensitivity test	Raw score	Contributions required for 100% Score (£)
Main scenario	56%	2,079,560
Sensitivity 1 - Change in PV Whole Life Cost (25% increase)	20%	4,722,589
Sensitivity 2 - Change in OM2 - 50% of households in Very Significant (Before) risk may already be in Significant Risk band	44%	2,643,821
Sensitivity 3 - Change in OM3 - 50% of households in Medium Term loss (Before) may already be in Long Term loss	56%	2,079,560
Sensitivity 4 - Increase Duration of Benefits by 25%	-	-
Sensitivity 5 - Reduce Duration of Benefits by 25%	54%	2,176,305

These sensitivity tests demonstrate that under both appraisal periods considered the PF score of the preferred option is sensitive to a number of the tests, in particular an increase in the whole life costs and change in number of OM2s.

5. The commercial case

5.1. Introduction and procurement strategy

The agreed approach to the procurement of services in relation to the LFRMP and delivery of the preferred options identified in this OBC is the SCAPE Procure Framework (SCAPE). SCAPE is a cost effective and OJEU compliant procurement route. As lead partner, ESC have entered into contract with Balfour Beatty as the SCAPE contractor. The SCAPE route was also endorsed by SCC who are the key partner for delivery of the pluvial fluvial aspects of the Lowestoft FRMP.

A review of all procurement routes open to the project partners was undertaken and SCAPE was selected on the basis of potential cost/programme savings combined with a commitment by the framework contractor to use local businesses and resources in the delivery of the project.

ESC have procured a number of technical services utilising the Scape Perfect Circle framework. These services include technical advisor, ECC project management, site supervision and cost management support.

Further details of the projects procurement approach is included in the LFRMP Procurement Strategy document, Appendix K1.

5.2. Key contractual terms and risk allocation

The key commercial and legal agreements that are being progressed to enable the delivery of the preferred options are summarised below:

- Landowner agreements and tripartite agreements with tenants where appropriate
- TWAO application and associated agreements
- Planning permission and associated agreements
- SCAPE risk share arrangements;
- Risk share agreements with partnership funders
- Operation and maintenance considerations

Detailed consultation with key stakeholders has established a framework for developing the legal agreements required. The approach to delivering these legal agreements is detailed in the Legal agreements briefing note (Appendix O1). Advance meetings have taken place to develop heads of terms for the legal agreements.

5.3. Procurement route and timescales

As mentioned in Section 5.1, SCAPE has been selected as the procurement route for delivering the necessary construction to deliver this project. The SCAPE agreement has regular staged check points incorporated into it to review contractual performance and ensure that best value is achieved. SCAPE does not require ESC to undertake any further procurement exercise in relation to the technical delivery of the preferred options outlined in this OBC. Subcontracts procured within the SCAPE agreement are required to go through a competitive tender process which is further detailed in Appendix K1 and defines the approach taken by the SCAPE delivery contractor for securing legally compliant, best value for money services for delivery of the project.

The project may procure further commercial support services through other available frameworks, further detail is provided within Appendix K1.

5.4. Efficiencies and commercial issues

Project efficiency is driven through the requirements of SCAPE, partner organisations and other funding sources. The project will seek to generate efficiencies at each stage to ensure best value is achieved for the public purse, Table 4.1 presents a summary of the project efficiency targets.

Table 4.1 – Summary of project efficiency requirements

Organisation / Funder	Efficiency measure / target	Reporting requirement
ESC, ESC and Scape framework	General commitment to drive efficient delivery of the project to achieve best value for the public purse.	Through general project financial reporting and benchmarking against similar projects.
EA / FCERM-GIA	15% of project expenditure to be from partnership funding	EA Partnership Funding Calculator
EA / FCERM-GIA	10% of project expenditure (of contributed amount)	EA CERT form
RFCC / Local Levy	10% of project expenditure (of contributed amount) – Assumed in line with FCERM - GiA	EA CERT form

A strategic efficiency register has been compiled using the EA's Capital Efficiency Reporting Tool (CERT) and is included as Appendix L6 (2018 OBC version) with a summary of key efficiencies identified included in Table 4.2.

Table 4.2 – Summary of FCERM (or FCERM funded) Efficiency

Efficiency Category	Efficiency Target/Idea	Forecast Value of Saving £k	Explanatory notes/ Breakdown of calculations
Innovation & Value Engineering	Shared use of Highways England's Bascule Bridge control building for the tidal barrier controls.	200	Estimate based on cost of constructing new control building.
	Alternative alignment of tidal flood wall to avoid diversion of intermediate pressure gas pipeline	150	Difference between estimated costs of tidal wall realignment and cost of diverting gas pipeline.
Contracting Approach	Delivery of preferred option using an appraise, design and build project delivery approach.	350	Estimate based on forecast cost savings against a traditional appraise, design and construct approach.
Streamlined Processes	Utilisation of Scape Procure framework to streamline project procurement and delivery.	40	£20k in 16/17, £10k in 17/18 and £10k in 18/19 based on programme reduction of approximately 6 months of Project management time.
Operational Productivity	Storage of demountable barrier components on stakeholders' land adjacent to deployment location rather than at central depot or leased land.	103	Estimate based on costs for commercial storage.

In addition, a value engineering register is now being used to record value engineering efficiencies with the current version included in Appendix L8. This identifies potential value engineering efficiencies of up to £730k. for the delivery of the tidal wall's element of the project.

A key efficiency the project is pursuing is the unconstrained delivery approach associated with the local choice tidal barrier option (Option 9LCU) whereby the reduced construction period has the potential to result in a saving of circa £10m in cash terms, in addition to the potential carbon savings associated with reduced construction period.

6. The financial case

6.1. Staged delivery

Given the need to secure additional partnership funding as a result of increases in delivery costs between SOC and OBC stages, the LFRMP is being delivered in a staged approach. The first stage has delivered the pluvial fluvial elements of the project in 2021 and is forecast to deliver the tidal flood wall works (as advanced works) by 2023. The second stage will deliver the tidal barrier element of the project. The Stage One works are fully funded and the Stage Two works are partially funded with an additional funding need of £113,089,000. The LFRMP Funding Programme (Appendix N1) outlines the approach for securing this additional funding. It is acknowledged that a risk remains that sufficient funding to enable the tidal barrier element of the works to proceed will not be secured and that the risk of not securing the required budget remains with ESC. Should this be a case, alternative options to the 'local choice' 40m barrier may need to be put forward, such as the 'nationally economically viable' option.

6.2. Financial summary

Tables 6.1a and 6.1d summarise the whole life costs of the preferred [national economic](#) options for the management of tidal and pluvial fluvial flood risk respectively. [Tables 6.1b and 6.1c summarises the whole life costs for the seasonally constrained and constrained delivery of the local choices tidal option respectively.](#) As detailed in Sections 3.5 and 3.10, detailed option costs have been developed based on a number of sources including risk allowance developed in accordance with Environment Agency risk management guidance.

Table 6.1a – Project cost summary (tidal – national economic Option 5c)

Costs (£k)	Cost for economic appraisal (PV)	Whole-life cash cost	Total project cost (approval)
Costs to OBC:	N/A -sunk costs		
Existing staff costs		65	65
Site investigation and survey		188	188
Consultants' fees		1,774	1,774
Contractors' fees		0	0
Subtotal		2,027	2,027
OBC to construction:			
Existing staff costs*	3,277	3,277	3,277
Site investigation and survey*			
Consultants' fees*			
Contractors' fees*			
Legal and stakeholder fees*			
Subtotal	3,277	3,277	3,277
Construction:			
Construction costs	42,270	46,926	46,926
Staff costs*	3,178	3,178	3,178
Consultants' fees*	3,178	3,178	3,178
Site supervision*	3,476	3,476	3,476
Inflation allowance (2.5% pa)			4,460
Subtotal	52,102	56,758	61,217
Risk contingency:			
Adjusted optimism bias barrier*	1,815	1,815	1,815
Adjusted optimism bias walls*	1,898	1,898	1,898
Risk - Monte Carlo 95%*			36,590
Risk - Monte Carlo 50%*	21,253	21,253	
Extra Inflation Risk (0% pa post commencement of construction)			0
Future costs:			
O&M & Other	12,046	54,535	
Optimism Bias (30% on future costs)	3,614	16,361	
Project total costs	96,005	157,923	106,824

*PV taken as cash cost (worst case)

Table 6.1b— Project cost summary (tidal – local choices option – 40m barrier seasonally constrained – 9LCC)

Costs (£k)	Cost for economic appraisal (PV)	Whole-life cash cost	Total project cost (approval)
Costs to OBC:	N/A -sunk costs		
Existing staff costs		65	65
Site investigation and survey		188	188
Consultants' fees		1,774	1,774
Contractors' fees		0	0
Subtotal		2,027	2,027
OBC to construction:			
Existing staff costs*	3,277	3,277	3,277
Site investigation and survey*			
Consultants' fees*			
Contractors' fees*			
Legal and stakeholder fees*			
Subtotal	3,277	3,277	3,277
Construction:			
Construction costs	73,714	85,506	85,506
Staff costs*	3,178	3,178	3,178
Consultants' fees*	3,178	3,178	3,178
Site supervision*	3,476	3,476	3,476
Inflation allowance (2.5% pa)			10,887
Subtotal	83,546	95,337	106,224
Risk contingency:			
Adjusted optimism bias barrier*	3,755	3,755	3,755
Adjusted optimism bias walls*	1,882	1,882	1,882
Risk - Monte Carlo 95%*			53,828
Risk - Monte Carlo 50%*	32,698	32,698	
Extra Inflation Risk (0% pa post commencement of construction)			0
Future costs:			
O&M & Other	12,665	59,951	
Optimism Bias (30% on future costs)	3,800	17,985	
Project total costs	141,623	216,914	170,994

*PV taken as cash cost (worst case)

Table 6.1c– Project cost summary (tidal – local choices option – 40m barrier seasonally unconstrained – 9LCU)

Costs(£k)	Cost for economic appraisal (PV)	Whole-life cash cost	Total project cost (approval)
Costs to OBC:	N/A -sunk costs		
Existing staff costs		65	65
Site investigation and survey		188	188
Consultants' fees		1,774	1,774
Contractors' fees		0	0
Subtotal		2,027	2,027
OBC to construction:			
Existing staff costs*	3,277	3,277	3,277
Site investigation and survey*			
Consultants' fees*			
Contractors' fees*			
Legal and stakeholder fees*			
Subtotal	3,277	3,277	3,277
Construction:			
Construction costs	67,216	75,570	75,570
Staff costs*	3,178	3,178	3,178
Consultants' fees*	3,178	3,178	3,178
Site supervision*	3,476	3,476	3,476
Inflation allowance (2.5% pa)			7,511
Subtotal	77,048	85,401	92,913
Risk contingency:			
Adjusted optimism bias barrier*	3,258	3,258	3,258
Adjusted optimism bias walls*	1,882	1,882	1,882
Risk - Monte Carlo 95%*			53,828
Risk - Monte Carlo 50%*	32,698	32,698	
Extra Inflation Risk (0% pa post commencement of construction)			0
Future costs:			
O&M & Other	13,307	60,394	
Optimism Bias (30% on future costs)	3,992	18,118	
Project total costs	135,462	207,056	157,185

*PV taken as cash cost (worst case)

Table 6.1d – Project cost summary (pluvial fluvial - 2018 values)

Costs (£k)	Cost for economic appraisal (PV)	Whole-life cash cost	Total project cost (approval)
Costs to OBC:	N/a -sunk costs		Exc previous app
Existing staff costs		£6	£6
Consultants' fees		£18	£18
Contractors' fees		£0	£0
Subtotal		£24	£24
OBC to construction:			
Existing staff costs	£5	£8	£8
Consultants' fees	£246	£246	£246
Contractors' fees	£4	£4	£4
Subtotal	£255	£258	£258
Construction:			
Construction costs	£3,438	£3,568	£3,568
Inflation allowance			£151
Existing staff costs	£15	£16	£16
Consultants' fees	£270	£280	£280
Site supervision	£223	£232	£232
Subtotal	£3,946	£4,095	£4,246
Risk contingency:			
Risk MEV & Optimism Bias	£541	£559	£559
Future costs:	£0	£0	
Maintenance & future costs	£262	£371	
Optimism Bias (on future costs)	£33	£47	
Project total costs	£5,037	£5,354	£5,087

6.3. Funding sources

The LFRMP Funding Programme (Appendix N1) sets out the planned approach to ensure sufficient funding is available for delivering the project objectives. Multiple funding sources have been explored in the production of this comprehensive plan with multiple sources already secured. The programme clearly sets out the secured funding for the first stage of works and provides further detail on the approach taken to secure the additional funding required to deliver the second stage of works.

ESC will be responsible for the operation and maintenance of the tidal elements of the LFRMP and will make provision for undertaking these future activities with a defined funding allocation, in addition to seeking beneficiary contributions. ESC has committed to underwriting these O&M costs, this will be confirmed in a letter from ESC's Section 151 Officer (Appendix N3).

Table 6.2 summarises the key funding sources that will be used to progress the initial capital work elements of the projects and indicates the status of this funding (secured or allocated).

Table 6.2 Summary of project funding sources (Source: Funding timetable, Section 4.5, V16 – LFRMP funding strategy)

Annualised funding needs (£k)	Pre 21-22 (sunk)	22-23	23-24	24-25	25-26	26-27	27-28	28-29	29-30	Total
Stage 1 – Tidal Walls										
New Anglia Local Enterprise Partnership (LEP)	10,000	-	-	-	-	-	-	-	-	10,000
East Suffolk Council	-	-	-	-	-	-	-	-	-	-
Green Recovery Fund	-	7,795	-	-	-	-	-	-	-	7,795
OGD Funding	-	-	1,400	-	-	-	-	-	-	1,400
COVID impacts funding	-	1,198	-	-	-	-	-	-	-	1,198
Stage 1 Tidal Walls - Identified funding	10,000	8,993	1,400	-	-	-	-	-	-	20,393
Partnership Funding Required	-	-	-	-	-	-	-	-	-	-
Stage 1 Tidal Walls- Total funding	10,000	8,993	1,400	-	-	-	-	-	-	20,393
Stage 1 – Pluvial Fluvial										
FCERM-GIA	1,492	-	-	-	-	-	-	-	-	1,492
Suffolk County Council (SCC)	3,000	-	-	-	-	-	-	-	-	3,000
Local Levy via RFCC	1,751	-	-	-	-	-	-	-	-	1,751
COVID impacts funding	385	-	-	-	-	-	-	-	-	385
Stage 1 Pluvial fluvial - Identified funding	6,628	-	-	-	-	-	-	-	-	6,628
Partnership Funding Required	-	-	-	-	-	-	-	-	-	-
Stage 1 Pluvial Fluvial - Total funding	6,628	-	-	-	-	-	-	-	-	6,628
Stage 2 – Tidal Barrier										
FCERM-GIA	-	-	-	-	-	4,186	-	-	-	4,186
Local Levy via RFCC	-	-	1,589	-	-	-	-	-	-	1,589
East Suffolk Council	-	-	250	250	250	250	-	-	-	1,000
Suffolk County Council (SCC)	-	-	-	-	-	-	-	-	-	-
Department for Education	-	-	-	-	-	-	200	-	-	200
Green Recovery Fund	-	2,500	656	2,266	28,494	1,775	-	-	-	35,691
Stage 2 Tidal Barrier - Identified funding	-	2,500	2,495	2,516	28,744	6,211	200	-	-	42,666
Partnership Funding Required	-	-	-	-	-	22,974	29,437	30,101	30,577	113,089
Stage 2 Tidal Barrier - Total funding	-	2,500	2,495	2,516	28,744	29,185	29,637	30,101	30,577	155,755

On the 2nd February 2016, £10m partnership funding contribution from the NALEP was secured for the management of tidal flood risk to promote growth in Lowestoft.

In addition in [July 2020](#), [£43.5m](#) of additional funding was secured from the HMG Green Recovery Fund towards the management of tidal flood risk in Lowestoft.

The funding programme provides further detail on the approach taken to secure the remaining funding required, identifying a number of additional funding sources that are being actively explored.

The funding requirements set out in Table 6.2 are correct at the time of initial submission of the [OBC \(October 2022 or October 2017 for pluvial fluvial works\)](#). Please note that the extract from the funding strategy above includes an allowance for construction costs associated with the Hamilton Road flood wall which is excluded from economic assessment included within this OBC. The construction costs for this flood wall were funded through the New Anglia LEP to provide flood risk reduction to the PowerPark enterprise zone with benefits attributed economic growth in the LEP business case (Appendix N2). Whilst the construction of the Hamilton Road flood wall falls within the scope of the LFRMP it has been removed from the FCERM economic assessment due to a disproportionate impact of the benefit cost ratio of all options. The limited FCERM benefits associated with this flood wall are separate and distinct from the FCERM benefits associated with the remainder of the tidal walls and barrier, it was therefore considered appropriate to remove this from the economic assessment.

6.4. Impact on revenue and balance sheet

The funding programme has considered in detail the whole life funding requirements of implementing the tidal and pluvial fluvial preferred options and demonstrates the approach to ensuring sufficient funding is available for both the initial capital and operational and maintenance phases of the project.

The tidal defence element of the project will create an FCERM asset in the ownership of ESC, who as asset owner and a Coast Protection Authority will be responsible for the whole life operation and maintenance of the tidal scheme.

The PLR measures installed as part of the pluvial fluvial preferred option will become assets of the property owners who will be responsible for their maintenance. This arrangement will be formalised in a legal agreement with the PLR beneficiary, the agreement will not restrict the property owner to apply for a grant (if available) in the future and will only be in force for the life span of the product (20 years). Therefore, the installation of PLR measures will not result in any additional cost to the promoting organisations beyond the initial capital expenditure. The Velda Close fluvial wall works and associated pumping station will be an FCERM asset owned by SCC as lead local flood Authority. Operation and maintenance costs associated with the wall will be funded by SCC through asset maintenance budgets. The pumping station may

be adopted by Anglian Water in which case they will be responsible for its operation and maintenance and the associated costs, otherwise operation and maintenance will remain the responsibility of SCC.

6.5. Overall affordability

Table 6.3a presents the tidal elements whole life cash costs for both stages of the tidal elements of the LFRMP (Post OBC). *It should be noted that a small element of the future O&M costs associated with completion of the tidal walls, forecast for late 2023 is not currently shown in the table.*

6.3a FCRM - Annualised spend profile – Tidal (£k Cash)

Annualised spend profile (£k cash)	Sunk Pre 21-22	Yr 0 22 - 23	Yr 1 23 - 24	Yr 2 24 - 25	Yr 3 25 - 26	Yr 4 26 - 27	Yr 5 27 - 28	Yr 6 28 -29	Yr 7 + 29-30	Yr 8 + 30-31	Total
Stage 1 - Tidal Walls											
Authority staff costs - Stage 1	2,027	1,374									3,401
External fees - Stage 1											0
Construction costs - Stage 1 Tidal Walls		10,413									10,413
Risk contingency (95%ile) - Stage 1		458									458
Optimism Bias - Stage 1		1,882									1,882
Inflation - Stage 1		0									0
Stage 1 Subtotal	2,027	14,127	0	0	0	0	0	0	0	0	16,154
Stage 2 - Tidal Barrier											
Authority staff costs - Stage 2		1,639	397	397	397	397	397	397	397		4,419
External fees - Stage 2 (including TWAO)			1,217	1,217	977	977	977	977	977		7,316
Construction costs - Stage 2 Tidal Barrier					15,018	15,018	15,018	15,018	15,018		75,092
Risk contingency (95%ile) - Stage 2		847	847	847	10,166	10,166	10,166	10,166	10,166		53,371
Optimism Bias - Stage 2					751	751	751	751	751		3,755
Inflation - Stage 2		0	20	40	1,260	1,702	2,154	2,618	3,093		10,887
Stage 2 subtotal	0	2,486	2,481	2,501	28,570	29,011	29,463	29,927	30,402	0	154,840
Stage 1&2 sub total	2,027	16,613	2,481	2,501	28,570	29,011	29,463	29,927	30,402	0	170,995
O & M and Future Costs											
O&M and other future costs										59,951	59,951
Optimism Bias - future works										17,985	17,985
Future costs sub total	0	0	0	0	0	0	0	0	0	77,937	77,937
Total costs	2,027	16,613	2,481	2,501	28,570	29,011	29,463	29,927	30,402	77,937	248,932

Table 6.3b presents whole life cash costs for the pluvial fluvial elements of the LFRMP (as per 2018 OBC).

6.3b FCRM - Annualised spend profile – Pluvial Fluvial (£k Cash – 2018 values)

Annualised spend profile (£k cash)	Sunk	Yr 0	Yr 1	Yr 2+	Total
	Pre 18-19	18 - 19	19 - 20	2020 +	
Authority staff costs	6	9	9		24
External fees - Stage 1	18	372	372		761
Construction costs - Stage 1		714	2,854		3,568
Risk contingency (MEV + Optimism bias) - Stage 1		112	447		559
Inflation - Stage 1			151		151
Project Total Stage 1 sub total	24	1,206	3,833	0	5,063
O&M and other future costs				371	371
Optimism Bias - future works				47	47
Total costs	24	1,206	3,833	418	5,481

Considering the staged approach to delivery of the initial capital works, Table 6.4 presents the capital expenditure profile (Cash costs) [required to deliver the LFRMP tidal Local choice option \(40m barrier – seasonally constrained\)](#). The costs below include the 95%ile QRA value, additional optimism bias allowance and a 2.5% PA inflation allowance on construction costs. as defined in Section 3.

Table 6.4– Project initial capital spend profile (Cash – tidal only)

Cash Cost (£k) (inc risk+inflation)	Sunk Pre 21-22	Yr 0 22 - 23	Yr 1 23 - 24	Yr 2 24 - 25	Yr 3 25 - 26	Yr 4 26 - 27	Yr 5 27 - 28	Yr 6 28 - 29	Yr 7 29 - 30	Total
Stage 1 - Tidal walls	2,027	11,787								13,814
Stage 1 - Risk	0	2,340								2,340
Stage 1 - Inflation	0	0								0
Stage 2 - tidal barrier	0	1,639	1,614	1,614	16,392	16,392	16,392	16,392	16,392	86,827
Stage 2 - Risk	0	847	847	847	10,917	10,917	10,917	10,917	10,917	57,126
Stage 2 - Inflation	0	0	20	40	1,260	1,702	2,154	2,618	3,093	10,887
Total	2,027	16,613	2,481	2,501	28,570	29,011	29,463	29,927	30,402	170,995

The Funding Programme (Appendix N1) focuses on providing sufficient funding for the initial capital costs but also sets out the approach for securing funding for the operation and maintenance of the tidal flood defence measures.

Comparison of the forecast initial capital spend [for the tidal works](#) (Table 6.4) against the currently identified funding sources (Table 6.2) indicates a total funding gap of approximately £113,089,000 to enable delivery of Stage Two of the project. The preferred [Local Choice](#) option has been developed to a higher level of detail than is usual for the OBC stage, [with detailed design completed for the tidal flood walls and progressing for the 40m tidal barrier combined with a high level of consultation with key stakeholders directly impacted by the proposals to ensure greater certainty of delivery cost and risks](#). with the greatest certainty for Stage One of the project.

Robust risk management approaches have been applied compliant with Defra risk management guidance to ensure sufficient budget is available to deliver the project.

Appendix N1 section 4.3 of the Funding Programme provides an overview of the main sources of committed and secured funding that will be used to deliver the Stage One works. Section 6.4 of the programme outline the approach taken to secure additional contributions to enable the delivery of the Stage Two works (Tidal Barrier). The additional sources of funding being explored are as follows:

- Secure additional contributions from current core funders
- Secure private beneficiary contributions: land owners; built asset owners
- commercial tenants
- Secure developer contributions (direct / indirect)
- Monetise contributions in-kind
- Multi-departmental asks for Central Government funding.

A number of these approaches have been successful and others have been discounted as they either require significant capital borrowing that is beyond the scope of a District Authority or will not raise the required level of funding (even in aggregate) at the at the pace it is required.

As the vast majority of the benefit relates to the economic value and jobs the project will unlock to benefit the region and nation, the remaining funding sources are the focus:

- Multi-departmental asks for Central Government funding.
- Secure additional contributions from current core funders

Even at the level of costs required to deliver the 40m 'local choice' tidal barrier, the return on this investment to the nation and will help secure Lowestoft Port as a key hub for offshore renewable energy projects for decades.

7. The management case

7.1. Project management

The development of this OBC is being led by ESC as a Maritime Authority with responsibilities under the Coast Protection Act 1949 and their permissive powers under Section 14A of the Land Drainage Act (1991) as amended by the Flood & Water Management Act (2010). Support on the fluvial and pluvial elements of the project will be provided by SCC as Lead Local Flood Authority under the Flood and Water Management Act 2010. A dedicated project team was established to take the lead in delivery of the Lowestoft FRMP and is developing and using project control processes following the PRINCE2 project management methodology and in accordance with ESC project and financial control processes.

Project structure and governance

ESC are supported by a number of partners and specialist suppliers in the delivery of this project. The project is supported by four key groups:

- Project Board
- Strategic Steering Group
- Project Delivery Group
- Key Stakeholder Group

The Project Board is responsible for making formal decisions and includes Cabinet Members from both SCC and ESC, plus representatives from AW, ABP, NALEP and the EA. The Project Board is supported by the Strategic Steering Group and the Project Delivery Board.

A Key Stakeholder Group provides local knowledge and input to guide and shape the project and how we engage with the wider community and businesses. This group's membership has been drawn from volunteers at the February 2016 business engagement event and subsequent public consultation. This approach has been adopted as good practice as demonstrated in the communications and engagement process for the G2LS.

A project organogram has been prepared to illustrate the structure of the project team and the key project governance routes and is included in Appendix D7.

Project roles and responsibilities

Key roles and responsibilities of individuals and organisations involved in the delivery of the Lowestoft FRMP are presented in Table 7.1.

Table 7.1 Key Project roles and responsibilities

Role	Name	Responsibility, Organisation
Project Sponsor & Project Board Chair	Cllr David Ritchie	ESC Cabinet Member for Planning and Coastal Management and SCC Councillor.
Project Executive	Karen Thomas	Head of Coastal Management, Coastal Partnership East on behalf of East Suffolk Council
Project Manager	Tamzen Pope	Coastal Engineering and Operations Manager, Coastal Partnership East on behalf of East Suffolk Council
Assistant Project Manager – Pluvial Fluvial	Nicola China	LLFA FCRM Advisor – Suffolk, Environment Agency, on behalf of Suffolk County Council
Principal Designer	Troy Doherty	Defined role under CDM 2015 regulations, Balfour Beatty
EA representative	Will Todd	Partnership and Strategic Overview team FCRM Advisor – Suffolk, Environment Agency
Suffolk County Council representative	Matt Hullis	Head of Environment Strategy, Suffolk County Council

Role	Name	Responsibility, Organisation
Lead Contractor	Balfour Beatty	SCAPE framework contractor leading the development of the Lowestoft FRMP
Lead Consultant	Jacobs – Tidal	Lead sub consultant developing the tidal flood risk management options and producing the Lowestoft FRMP
Consultant	JBA – Fluvial/Pluvial	Sub-consultant considering pluvial fluvial flood risk.
Ground Investigation Contractor	Tetrattech	Undertaking initial ground investigation along the alignment of the likely preferred tidal option (Option 5).

Project plan

Detailed project programmes have been prepared to accompany this OBC and are included in Appendix J1 to J3 which have informed the economic appraisal of the barrier options considered. Appendix J4 is the projects master programme that takes into account an accelerated TWAO process with a seasonally constrained delivery approach. Table 7.2a summarises the delivery key milestones (including those completed) from the Master Delivery programme (appendix J4) for delivery of the local choice 40m barrier option with an unconstrained delivery approach.

Table 7.2a – Key project Milestones for the Tidal works (seasonally constrained) (Actuals in Bold)

Activity	Date (DD/MM/YY)	Comment
SOC recommended for approved	04/05/17	By LPRG and submitted to ESC & SCC cabinets for information
Approval to proceed to OBC & TWAO	06/06/17	By ESC Cabinet
Tidal walls planning application submitted	10/07/19	By ESC to ESC Planning department
2018 OBC recommended for technical approval (tidal)	11/01/19	By LPRG followed by ESC cabinets
Tidal walls planning application granted	06/05/20	By ESC Planning department
TWAO - Issue draft Order to DEFRA	09/05/23	By ESC to DEFRA
TWAO - Order made	07/06/24	Assumes written representations only
Tidal works		
Tidal walls work to start on site	08/04/21	Tidal wall construction commences in advance of tidal barrier, subject to planning permission
Tidal walls work substantially completed by	11/07/23	Excluding barrier tie in works
Tidal barrier work to start on site	01/07/24	Subject to TWAO
Tidal barrier work completed	31/03/27	Assumes 40m barrier –unconstrained construction approach

Table 7.2b summarises the key delivery milestones (including those completed) from the Master Delivery programme (Appendix J4) for delivery of the local choice 40m barrier option amended to take into account the delivery efficiency associated with a constrained delivery approach.

Table 7.2b – Key project Milestones for the Tidal works (unconstrained) (Actuals in Bold)

Activity	Date (DD/MM/YY)	Comment
SOC recommended for approved	04/05/17	By LPRG and submitted to ESC & SCC cabinets for information
Approval to proceed to OBC & TWAO	06/06/17	By ESC Cabinet
Tidal walls planning application submitted	10/07/19	By ESC to ESC Planning department
2018 OBC recommended for technical approval (tidal)	11/01/19	By LPRG followed by ESC cabinets
Tidal walls planning application granted	06/05/20	By ESC Planning department
TWAO - Issue draft Order to DEFRA	09/05/23	By ESC to DEFRA
TWAO - Order made	07/06/24	Assumes written representations only

Activity	Date (DD/MM/YY)	Comment
Tidal works		
Tidal walls work to start on site	08/04/21	Tidal wall construction commences in advance of tidal barrier, subject to planning permission
Tidal walls work substantially completed by	11/07/23	Excluding barrier tie in works
Tidal barrier work to start on site	01/07/24	Subject to TWAO
Tidal barrier work completed	01/11/29	Assumes 40m barrier – seasonally constrained construction approach

7.2. Communications and stakeholder engagement

The approach to communications and engagement across all project communications and engagement has been, and will continue to be, a two-way symmetrical approach (systems theory), allowing for the development of ideas and the co-creation of progress. This approach has been adopted to support the project development through each phase and to raise awareness of, and to help support, the early identification and resolution of objections and concerns.

From the outset, the project team identified that a successful communication approach and accompanying strategy were of paramount importance in delivering the objectives of the LFRMP. A comprehensive structure of communication and stakeholder engagement has been adopted and continually developed. A detailed summary of the stakeholder engagement undertaken to date is included as part of the Lowestoft Tidal Communications Plan (Appendix G1). To ensure the smooth delivery of this project, ensuring that both external and internal communications are undertaken in an efficient and effective manner, extensive consultation and engagement has, and will continue to be, undertaken.

Communications and engagement planning, and delivery has and will continue to broadly follow the Environment Agency's 'Working with Others' guidelines centred around the 'Engage, Deliberate and Decide' approach but with additional evaluation points. All engagement is planned, conducted, and delivered in accordance with the Chartered Institute of Public Relations (CIPR) Code of Conduct, specifically adhering to the guidance around ethical communication. As required by East Suffolk Council, an Equality Impact Assessment has been completed.

It is noteworthy that during the pandemic consultation and engagement was of course challenging. However, digital and virtual reality engagement played a critical role in engaging people. Virtual reality rooms, using gaming technology has proved successful and we will continue to enhance and develop these tools for use throughout the project. Value-based digital surveys have proved exceptionally useful tools in other areas of work and again we will continue to develop and use those tools during project engagement as is appropriate.

- Consultation and engagement have been achieved through a number of mechanisms, including but not limited to:
- Public drop-in sessions,
- Stakeholder workshops,
- Involvement in and attendance at key local events
- Public and statutory consultations on options and environmental assessments,
- Use of the LFRMP project's web site¹⁷,
- Use of social and traditional media

¹⁷ <http://www.lowestoftfrmp.org.uk/>

- Extensive engagement with schools, and FE colleges
- Engagement with local business groups (including the Lowestoft Chamber of Commerce),
- The Strategic Stakeholder Group and Key Stakeholder Group,
- Focused meetings with individuals and organisations as required.
- Public consultation documents (Appendix G2)
- Virtual reality visitor centre
- Virtual reality careers centre
- Awareness raising through social value activities such as local volunteering

For all methods of consultation, mechanisms are in place to capture and analyse consultation responses and incorporate this feedback into the development of the options. Further detail is included in Appendix G1.

The key stakeholders consulted through the development of the Lowestoft FRMP are summarised in Table 7.3. A more extensive analysis and stakeholder list is included in the communications and engagement plan (Appendix G1).

Table 7.3 - Key Project stakeholders (excluding project partner organisations)

Stakeholder	Interest (tidal/pluvial/fluvial)	Represented on / Consulted through
Royal Yacht Association, Royal Norfolk and Suffolk Yacht Club and leisure users	tidal	Public and focused consultation
Broads Authority	tidal	Statutory consultation
Businesses and their customers	tidal/pluvial/fluvial	Focused consultation
Highways England	tidal/pluvial/fluvial	Statutory consultation
Associated British Ports	tidal	Focused consultation – represented on project Board and steering group
UK Power Networks	tidal/pluvial/fluvial	Focused consultation
Landowners (potentially affected by the tidal works inc walls)	tidal/pluvial/fluvial	Focused and Public consultation Some represented on project steering group
Historic England	tidal/pluvial/fluvial	Statutory consultation
Environmental bodies	tidal/pluvial/fluvial	Statutory consultation
Network Rail	tidal	Statutory consultation
The Crown Estate	tidal	Statutory consultation
General public	tidal/pluvial/fluvial	Public consultation

The in-house engagement specialists overseeing and supporting the project's communication and engagement, including that of the contractor Balfour Beatty, are all either working towards or hold a CIPR qualification. The project's strategic communications lead is a Chartered PR Practitioner.

7.3. Change management

Any organisational change required as a result of the delivery of the preferred options will be managed in accordance with the project governance procedures. Where organisational change is required with partner organisations and or other interested parties, legal agreements will be put in place to formalise this change and clearly establish responsibilities.

These organisational changes and agreements will be the main focus of the operation and maintenance of the assets created by the project together with any third party operation and access agreements. Further detail of the O&M requirements for the tidal barrier and the approach to implementing legal agreements is included in Appendix O1 and F18 respectively.

7.4. Benefits realisation

Monitoring and reporting on benefits realisation will be undertaken by ESC in collaboration with the EA and utilise the EA's established FCERM protocols. Tables 7.4a and 7.4b summarise the forecast realisation of Tidal OM's for the Option 9 Local choice options, considering constrained and unconstrained delivery approaches. Please note that this is based on the master delivery programme which assumes an accelerated TWA0 process (Appendix J4). The benefits realisation presented below is more optimistic than that included in the economic analysis which is based on the detailed project programmes (Appendix J1 to J3).

Table 7.4a Forecast OM2 realisation plan – Tidal Option 9LCC (constrained delivery)

Ref	Outcome Measure (OM)	Yr 1 2023	Yr 2 2024	Yr 3 2025	Yr 4 2026	Yr 5 2027	Yr 6 2028	Yr 7 2029	Total
rOM2A	Number of households better protected against flood risk (today)							226	226
rOM2A .b	Number of households moved from the 'very significant', 'significant' or 'intermediate' flood risk bands to lower flood risk bands							126	126
rOM2A .c	Number of households moved out of the 'very significant', 'significant' or 'intermediate' flood risk bands to lower risk bands in the 20% most deprived areas							125	125
rOM2A .PLP	Number of households moved from the 'very significant', 'significant' or 'intermediate' flood risk bands to lower flood risk bands through PLP measures							-	-
rOM2B	Additional households better protected against flood risk in 2040 (adaptation)							42	42
rOM2B .b	Additional households moved from the 'very significant', 'significant' or 'intermediate' flood risk bands to lower flood risk bands in 2040 (adaptation)							-	-
rOM2B .c	Number of households moved out of the 'very significant', 'significant' or 'intermediate' flood risk bands to lower risk bands in 2040 in the 20% most deprived areas (adaptation)							-	-
rOM2. NRP	Number of non-residential properties better protected against flood risk							152	152
rOM2A .NRP	Number of non-residential properties better protected from flood risk (today)							137	137
rOM2B .NRP	Number of non-residential properties better protected from flood risk in 2040							15	15

Table 7.4b Forecast OM2 realisation plan – Tidal Option 9LCC (un constrained delivery)

Ref	Outcome Measure (OM)	Yr 1 2023	Yr 2 2024	Yr 3 2025	Yr 4 2026	Yr 5 2027	Yr 6 2028	Yr 7 2029	Total
rOM2A	Number of households better protected against flood risk (today)					226			226
rOM2A .b	Number of households moved from the 'very significant', 'significant' or 'intermediate' flood risk bands to lower flood risk bands					126			126
rOM2A .c	Number of households moved out of the 'very significant', 'significant' or 'intermediate' flood risk bands to lower risk bands in the 20% most deprived areas					125			125
rOM2A .PLP	Number of households moved from the 'very significant', 'significant' or 'intermediate flood risk bands to lower flood risk bands through PLP measures					-		-	-
rOM2B	Additional households better protected against flood risk in 2040 (adaptation)					42			42
rOM2B .b	Additional households moved from the 'very significant', 'significant' or 'intermediate' flood risk bands to lower flood risk bands in 2040 (adaptation)					-		-	-
rOM2B .c	Number of households moved out of the 'very significant', 'significant' or 'intermediate' flood risk bands to lower risk bands in 2040 in the 20% most deprived areas (adaptation)					-		-	-
rOM2. NRP	Number of non-residential properties better protected against flood risk					152			152
rOM2A .NRP	Number of non-residential properties better protected from flood risk (today)					137			137
rOM2B .NRP	Number of non-residential properties better protected from flood risk in 2040					15			15

Tables 7.4a and 7.4 b illustrate the impact of an unconstrained delivery approach has on the forecast realisation of benefits with a reduction of almost 2 years in the time to deliver the tidal benefits.

The realisation of Pluvial Fluvial OM2s is based on the properties protected by the Velda Close flood wall and a PLR take-up rate of 100%. Further detail can be found in the Pluvial Fluvial Options Report (Appendix F1).

Table 7.5 Forecast OM2 realisation plan – Pluvial fluvial (2018 values)

Outcome Measure (OM)	Yr 1 2017	Yr 2 2018	Yr 3 2019	Yr 4 2020	Yr 5+ 2021	Total
OM2a Households moved to a lower risk category (number- nr)			264	7		271
OM2b Households moved from very significant or significant risk to moderate or low (nr)			264	7		271
OM2c Proportion of households in 2b that are in the 20% most deprived areas (nr)			101	7		108

*Old OM2 references as these were Forecast to be delivered in the previous CSR period.

Whilst every effort has been made to identify areas of environmental enhancement that can be economically delivered within the LFRMP, it has not been possible to identify areas where sufficient quantities of habitat or river restoration could be undertaken to enable an Outcome Measure claim to be made. These OM3s together with OM3 for coastal erosion have therefore been omitted from the benefits realisation plan tables.

7.5. Risk management

Project level risk

Up to the point of agreeing the Target Cost for individual work packages, the risk of overspend remains with ESC although the SCAPE framework KPI places emphasis on the Contractor to help manage this as part of the overall scheme budget and pass the KPI. Once the Target Cost is agreed the Compensation Event and the pain/gain contractual mechanisms define who the risk of overspend rests with.

Risk management of the project will follow the procedure established through the SCAPE framework combined with ESC's own internal risk management processes, further detail of the risk management structure is included in Appendix L7.

The SCAPE framework mandates the ECC NEC3 for delivery agreements and so provides a basis for the division of risk to each of the project parties. Additional risks have been recorded on the project risk register. The risk owner is the party best placed to manage the risk from a commercial, programme or delivery basis. This would be agreed by the project team once a risk had been identified. The quantitative risk registers for the 40m Tidal barrier and tidal walls represent the comprehensive project risk assessment for delivering the tidal Works (Appendix L). Key project risks summarised in Table 7.6.

Table 7.6 Key project risks

	Key Risks	Risk VH/H/M /L/VL	Owner	Mitigation	Risk Post mitigation VH/H/M/L/ VL
1	TWAO application / Legal agreements – Objections to the TWAO / contents of required legal agreements may delay the tidal barrier.	H	ESC	Extensive consultation with impacted parties is being and will continue to be undertaken prior to submission of the applications and during the development of legal agreements.	M
2	Unforeseen ground conditions – Extensive GI has been completed to inform the design and construction of the tidal flood walls with initial GI undertaken for the tidal barrier.	H	ESC	Further GI at barrier location will be undertaken to confirm design assumptions, risk allowance is included for a level of risk relating to ground conditions.	M
3	Funding – high level of additional partnership funding required to progress Stage 2 of project (tidal barrier).	VH	ESC	Funding programme in place – plan in place to source additional funding and provide regular formal updates to funders and stakeholders. Staged approach to delivery, risk of not completing second stage of tidal project	H
4	Inability to agree land access with key stakeholders	M	ESC	Include requirements as part of early consultation / development of legal agreements. Progress heads of terms and continue with TWAO development.	L
5	Delays in discharging TWAO consent conditions	L	ESC	Ensure conditions are included in programme and scope of works. Early liaison with stakeholders to reduce the risk of unknown conditions.	VL
6	Inflation – current levels of inflation result in increased delivery costs.	VH	ESC	Monitor inflationary pressures – work with supply chain to deliver efficiency. Include an allowance for a reasonable level of inflation as risk. Consider recommendations of Environment Agency guidance on managing cost uncertainty.	H

Option delivery risk management

Risk workshops were initially undertaken in March 2017 and February 2018 to develop and refine the option specific quantitative risk registers for the preferred Tidal Barrier, Tidal Walls and Pluvial Fluvial options. For the tidal options, continued development of these risk registers has taken place with the latest risk workshops completed in February and March 2023. The most recent versions of the quantitative risk registers are included as Appendix L2, L3 and L4. These risk registers were used to inform the development of risk allowances included within the option costs. In line with current Environment Agency risk management guidance and assessment of residual option risks was also undertaken and an element of Optimism Bias identified and included in the option costs.

The quantitative risk registers will be reviewed and refined by the project team at regular intervals through the duration of the project. This will ensure that risk budgets reflect the projects current stage with consideration given to risks that have been realised or have passed so that the project governance and funders are kept informed. Further detail of this approach is detailed in Appendix L7.

7.6. Contract management

Contractual commitments will be made in accordance with ESC's procurement processes and those of the SCAPE framework contractor. Day to day contractual management will be undertaken by ESC's Project Manager supported by the project management and project governance structures detailed in Section 6.1. In addition to

enable the management of the Scape contract as it moves into its delivery phase, ESC will formally appoint the following roles:

- ECC Project Manager
- Technical reviewer
- ECC site supervisor
- Project Cost Manager

ESC will continually monitor the level of commercial support needed to deliver the projects and where necessary bring in additional support as required.

7.7. Assurance

Project assurance is acknowledged as being critical to the successful and efficient delivery of the project. The Project Board is accountable for overall assurance of the project and report directly to ESC's elected members and SCC's elected members.

Day to day assurance is undertaken by the project team in line with the quality assurance processes of their respective organisations together with the overarching requirements of the project delivery plan.

Multiple funding streams will be required to deliver the preferred options, each of which have specific assurance requirements associated with the release of funding. The Lowestoft FRMP Funding Programme¹⁸, included in Appendix N1 contains details of assurance processes that will be followed for each funding stream.

Assurance of this OBC will be undertaken through the EA's LPRG following review and recommendation of the Project Board to proceed with document submission. Following a recommendation by LPRG to approve the OBC, the document will be submitted to the ESC and SCC Cabinets for information.

Once the complete funding package for the second stage of delivery (Tidal Barrier – Local choice option) is secured the OBC will be resubmitted to LPRG for financial assurance. Following a recommendation for approval of the second stage works, it will be resubmitted to the ESC cabinet for information and for approval to further progress activities associated with the tidal barrier element of the preferred tidal option.

7.8. Post project evaluation

A post project evaluation will be undertaken in line with ESC's project management procedures. In addition, any additional requirements from the projects funders requirements for post project evaluation will be incorporated into the evaluation, a summary of these requirements is presented in Table 7.7.

¹⁸ Lowestoft FRMS Funding Programme, ESC, 2017

Table 7.7 Post project evaluation requirements

	Source	Measure	Target
1	ESC	Tidal elements of the FRMP	
		Budget – complete the works within the Approval value	OBC stage cost estimates
		Programme – complete works within the programme at FBC stage	OBC stage completion milestone
2	FCRM-GiA	Tidal OM2's delivered	OBC stage PF calculator
		Pluvial Fluvial OM2's delivered	OBC stage PF calculator
3	Local Levy	As FCRM-GiA	
4	SCAPE framework	Socio economic Benefits (demonstrated using SVP or LM £ socio economic calculator)	To be defined in the final scape delivery contract.
		Commercial value for money (report produced referring back to initial costings)	
		Post Project Review and Learning Workshop with Client. (Carried out with <i>whole</i> team).	
		KPI post construction MAP survey carried out with the client	
		KPI supply chain Surveys completed	
5	NALEP	No specific requirements	N/A
6	Green Recovery Fund	No specific requirements	N/A

In addition to these funding specific requirements, the Lowestoft Infrastructure prospectus established an overriding measure of success for the LFRMP which is as follows:

“The threat from fluvial and tidal flooding in Lowestoft will have been significantly reduced”

The Local plan for Lowestoft also specifically mentions the provision of Strategic flood risk management measures as a key enabler for the future growth of Lowestoft.

The exact criteria for this measure of success is to be quantified against success in achieving the objectives of this strategy. *With the completion of the pluvial fluvial elements of the project, this objective has been partially met.*

7.9. Contingency plans

At present Lowestoft has no formal tidal or pluvial fluvial flood defences. Existing contingency arrangements will remain in place and include:

- Tidal flood warning service
- Suffolk Flood Plan
- Evacuation plans
- Emergency Services' response plans
- Local authority response plans

Some local businesses have their own contingency arrangements, in particular ABP which has a published flood contingency plan¹⁹ detailing how the port will respond to a tidal flood event.

¹⁹ ABP Lowestoft Flood contingency Plan, ABP, 2014 available from:
http://www.abports.co.uk/Marine/Short_Sea_Ports/Lowestoft/Lowestoft_Flood_Contingency_Plan

The Lowestoft FRMP Funding Programme (Appendix N1) considers contingencies in relation to funding shortfalls and cost increases as far as possible at this stage of the project. As a living document, the funding programme will further develop as increased certainty is gained with respect to tidal barrier option costs.

Lowestoft temporary tidal defences

As an interim measure 1.4km of temporary tidal flood defences have been procured to reduce the risk of flooding to key sections of Lowestoft. The temporary defence system has been in place since December 2016 and it is intended to be available for use for a period of up to five years until the permanent tidal defences are completed. After this time the asset will be released to the Environment Agency. It was successfully deployed in January 2017 in response to a forecast surge event, further detail is given in Section 2.5.

As part of the two-stage delivery approach for the tidal element of the LFRMP the temporary defences will be utilised to reduce the risk of flooding during the period between completion of the tidal walls and tidal barrier elements of the tidal preferred option.

Although undesirable, consideration could be given to extending the use of this system should there be a delay in completion of either stage of the permanent tidal defences. However, this would not be in line with the objectives of this project.

Appendix A: Partnership funding calculators

- A1 Tidal preferred option partnership funding calculator (National Economic option)
- A2-1 Pluvial fluvial preferred option partnership funding calculator – 20 year Appraisal Period (2018 OBC version)
- A2-3 Pluvial fluvial preferred option partnership funding calculator – 100 year Appraisal Period (2018 OBC version)

Appendix B: List of reports produced

NB: It should be noted that during the time frame of this this OBC development. Waveny District Council (WDC) has become East Suffolk Council (ESC). Any referenced to WDC should be taken as referring to ESC.

Report Title	Description	Risk Focus	Date
Tidal Modelling reports	Initial Lowestoft tidal hydraulic modelling report, supplemented by additional studies focusing on the outer harbour.	Tidal	2014 & 2016
Economics Report	Summary of economic analysis undertaken	Tidal	2016
Option summary note	Note produced to support consultation of the SEA Environment Report prior to the finalisation of the SOC	Tidal	2017
Local economic impact report	Report considering the impact of tidal flooding on Lowestoft's economy - GVA	Tidal	2016
Lowestoft Tidal Barrier Feasibility Study	Study considering the feasibility of using a tidal barrier as part of a tidal defence system to protect Lowestoft.	Tidal	2015
Pluvial/Fluvial options report	Report summarising the appraisal of pluvial fluvial flood risk management options.	Pluvial/fluvial	2016/2017
Pluvial/Fluvial Economic analysis summary note	Summary note to support the pluvial fluvial GIS economic analysis outputs.	Pluvial/fluvial	2016
Integrated Catchment Modelling Report	Report on the integrated catchment modelling undertaken as part of the assessment of pluvial fluvial flood risk	Pluvial/fluvial	2016/2017
Lowestoft Integrated Modelling Report	Report summarising the pluvial fluvial modelling work and sensitivity work undertaken.	Pluvial/fluvial	2016/2017
Lowestoft FRMP procurement Cabinet briefing note	East Suffolk Councils Cabinet briefing document detailing the recommended approach for procuring work relating to the Lowestoft FRMP. NB: Confidential document	All	2015/2016
Lowestoft FRMP Funding Programme	Summary of funding sources for the Lowestoft FRMP, detailing funding status and plan for obtaining further funding as required.	All	2016
Strategic Approach document	Document produced to clearly establish interaction of Lowestoft FRMP with other local plans and strategies. Establishing any overlap between FCERM risk and the approach of fairly apportioning benefits.	All	2017
WFD Assessment	Water Framework Directive Assessment for tidal and pluvial/fluvial options	All	2016
HRA	Habitats Regulations Assessment for tidal and pluvial/fluvial options	All	2016
SEA Environment Reports	Strategic Environmental Assessment Report – summarises the assessment of environmental impacts of options considered.	All	2016 & 2017
Public consultation document	Document produced for public consultation of tidal and pluvial fluvial options	All	2016 – 2022 (living document)
Communication plan	Lowestoft FRMP – Project communications plan	All	2016 – 2022 (living document)

Appendix C: Photographs

- C1 Tidal – Option 5 alignment walkthrough
- C2 Historic Flooding Photographs
- C3 Aerial Photographs
- C4 Artists impression – Tidal Option 5 (28m tidal barrier width)
- C5 Tidal - Option 5 flood walls works in progress
- C6 Completed pluvial fluvial works

Appendix D: Figures

- D1 Constraints plan
- D2 Tidal Shortlisted Option Plans
- D3 Tidal Option 5 – Detailed design GA's and sections
- D4 Pluvial Fluvial Shortlisted Option Sketches
- D5 Tidal Flood Extents
- D6 Pluvial Fluvial Flood Extents
- D7 Project Organogram
- D8 Key Plan
- D9 40m tidal barrier 15% GA's and sections – to follow in future OBC submission

Appendix E: Economic Appraisal

- E1 Tidal Economic Appraisal Note
 - DEFRA Summary sheet
 - PV damages summary sheet – Main tidal area
 - Option costing summary spreadsheets
- E2 Tidal options costing note and spreadsheets
- E3 Tidal options technical descriptions note
- E4 Pluvial Fluvial economic appraisal note

Appendix F: Technical Reports

F1	Pluvial Fluvial Options Note
F2	Lowestoft tidal Barrier feasibility study
F3	Lowestoft Local Economic Impact report
F4	Lowestoft Infrastructure Prospectus
F5	Tidal modelling reports
F6	Kirkley stream flooding reports
F7	Dec 13 surge reports
F8	Enterprise zone
F9	Broads Climate change high level review
F10	SMP's
F11	Anglian FRMP 2015
F12	Suffolk FRMS 2016
F13	Lowestoft Local Plan
F14	Tidal Appraisal Summary Sheet
F15	Pluvial Fluvial Appraisal Summary Sheet
F16	Lowestoft SFRA
F17	Lowestoft Tidal flood walls FRA
F18	Tidal Barrier O&M requirements
F19	Lowestoft Drainage Strategy - Pluvial / Fluvial Options Report (SOC stage)
F20	Tidal Barrier – Technical review note
F21	Option 3 - Flood Walls Only - Technical and Cost Review for OBC (2018)
F22	CFB and UKCIP change comparison technical note
F23	Navigation Simulation Report
F24	East Suffolk CFMP

Appendix G: Consultation

- G1 Communications and Engagement Plan
- G2 Lowestoft FRMP Public Consultation Documents
- G3 Action Plan and Communications Log List (Action Plan - Lowestoft 12_08_22)

Appendix H: Environmental Reports

- H1 PEIR and appendices
- H2 HRA Screening report and response (OBC)
- H3 HRA Screening report and response (SOC)
- H4 WFD assessment (SOC)
- H5 WFD assessment (OBC)

Appendix I: Natural England Letter of Support

I1 Natural England letter of support

Appendix J: Project Programme

- J1 Lowestoft FRMP 28m Tidal barrier Programme
- J2 Lowestoft FRMP 40m Tidal barrier (seasonally constrained delivery) Programme
- J3 Lowestoft FRMP 40m Tidal barrier (un-constrained delivery) Programme
- J4 Lowestoft FRMP 40m Tidal barrier Master delivery (seasonally constrained) Programme

Appendix K: Procurement Strategy

K1 LFRMP Procurement Strategy

Appendix L: Risk & Efficiency Registers

- L1 Project risk register – superseded by L2 and L3
- L2 Tidal Walls Option 5 quantative register
- L3a 28m Tidal Barrier Option 5 quantative register
- L3b 40m Tidal Barrier Option 5 quantative register
- L4 Pluvial fluvial preferred option quantative register – Removed as works delivered
- L5 Tidal Optimism Bias Assessment
- L6 Project efficiency register 2018 version
- L7 LFRMP approach to risk and cost management
- L8 Tidal walls value engineering register – Live version

Appendix M: Strategic Approach

M1 Strategic Approach document

Appendix N: Funding Programme & NALEP Business Case

- N1 CONFIDENTIAL DRAFT - Lowestoft FRMP - Funding Programme
- N2 CONFIDENTIAL DRAFT - Lowestoft FRMP - NALEP Business Case
- N3 Tidal O&M Commitment Letter – To follow in final revision of OBC

Appendix O: Licences, Consents and Legal agreements

- O1 Legal Agreements Briefing Note
- O2 TWAO Briefing note

Appendix P: Carbon Optioneering Tool

P Tidal barrier carbon assessment technical note and carbon assessment tools

LOWESTOFT TIDAL BARRIER TWAO ORDER
PRE-APPLICATION PROGRAMME TO MEET LEGAL REQUIREMENTS AROUND SUBMISSION

Notes:

The “2006 Rules” means The Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006 (SI 2006/1466)

Actions identified in red text represent statutory activities which must be undertaken if the application is to be submitted on 16 May 2023.

Month	Week No.	Date	Action	Responsibility	Notes
February	-14	Fri 3 February	Place newspaper notice of ESCs intention to consider whether to resolve to make the TWAO application (at least 30 days prior to intended date of Council meeting – assuming resolution takes place at full Council meeting on 15 March)	BDBP	See notes below regarding section 239 process.
	-13	Fri 10 February	Notice of Council Meeting (s.239) published in the following publications: <ul style="list-style-type: none"> • Lowestoft Journal • Beccles and Bungay Journal • East Anglian Daily Times • Eastern Daily Press 	BDBP	A second notice will require to be published at least 30 days ahead of meeting to confirm the second resolution (after the TWAO application is made)
			Deadline for BDBP comments on Stage 1 ES	BDBP	

Month	Week No.	Date	Action	Responsibility	Notes
		Wed 15 February	BDBP to provide comments on draft documentation for s.239 process	BDBP	
	-12	Fri 17 February	Comments to be provided to BDBP on draft Order and Explanatory Memorandum including draft Works Descriptions for inclusion in Schedule 1 to the Order	ESC / Jacobs	
	-11	Tues 21 February	List of Schedule 5 / Schedule 6 bodies to be issued to ESC / Jacobs for checking / confirming	BDBP	
		Thurs 23 February	Draft request for Deemed Planning Direction issued to team for completion	BDBP	
		Fri 24 February	Second revision of Draft Order and EM to be produced for inclusion in s.239 paperwork	BDBP	
	-11	Mon 27 February	Sample application covers and bundling arrangements to be confirmed to BDBP	Jacobs/ ESC	
			Arrangements for printing of application to be confirmed	Jacobs/ ESC	<i>As noted below, BDBP can arrange assume responsibility for sourcing and instructing printers if ESC / Jacobs would like us to.</i>
		Tues 28 February	Draft planning conditions provided to ESC (in its capacity as local planning authority)	Jacobs / ESC	
			Draft request for deemed planning direction to be completed with elements of works completed	Jacobs / ESC	

Month	Week No.	Date	Action	Responsibility	Notes
			Draft covering letter and other supporting application documents to be circulated for comment	BDBP	
March	-11	Thurs 2 March	Deadline for all s.239 resolution documentation to be ready ahead of Full Council meeting on 15 March 2023	BDBP / ESC / Jacobs	
		Fri 3 March	Draft landowner, statutory consultee, site and newspaper notices and lists for service prepared and issued for comment	BDBP	
			Comments on draft List of Schedule 5 / Schedule 6 parties to be provided to BDBP	ESC / Jacobs	
	-10	Fri 10 March	List Schedule 5 / Schedule 6 parties finalised	BDBP / ESC / Jacobs	
	-9	Mon 13 March	Plan showing Order limits and scheme location to be provided for Schedule 5 / Schedule 6 parties	Jacobs	

Month	Week No.	Date	Action	Responsibility	Notes
		Wed 15 March	First Council meeting pursuant to section 239 Local Government Act 1972 takes place – seeking approval for submission of TWAO application	ESC	<p>Please note that the provisions of s.239 of the Local Government Act 1972 must be complied with.</p> <p>This requires two resolutions to be passed – one prior to the application being submitted and one immediately after the application has been made.</p> <p>Both resolutions require at least 30 clear days' notice be given in local newspapers.</p>
		Fri 17 March	Desirable date to send draft Order to Schedule 5 / Schedule 6 parties for comment (allowing 6 weeks for comments to be made, slightly longer than the statutory minimum of 28 days but also allowing for the Easter holiday period and time to accommodate any late responses)	BDBP	Authorisation for electronic service of documents will also be sought at this time.
			Desirable date to send draft Order to Defra for comment (allowing 6 weeks for comments to be made, slightly longer than the statutory minimum of 28 days but also allowing for the Easter holiday period and time to accommodate any late responses)	BDBP	Rule 5 prescribes the obligation to do this. This is 35 days because the following week is Easter and this therefore still allows 28 days for comments.
	-7	Fri 31 March	Second Draft ES issued for review	Jacobs	

Month	Week No.	Date	Action	Responsibility	Notes
April	-6	Thurs 6 April	Deadline for legal review of Second Draft ES	BDBP	<i>Note this assumes timely production of ES by 31 March 2023</i>
		Fri 7 April	GOOD FRIDAY BANK HOLIDAY		
	-5	Mon 10 April	EASTER MONDAY BANK HOLIDAY		
	-4	Mon 17 April	EIA workshops to discuss and resolve outstanding comments from latest review to commence.	ESC / Jacobs / BDBP	<i>Suggested – for discussion with team.</i>
		Tues 18 April	Appropriate date for settling contents of the Book of Reference and certification of land referencing	Carter Jonas	<i>Rule 12(10) prescribes that the landowner information must be correct at the beginning of a period of 28 days ending with the date of the application.</i>
		Wed 19 April	Draft newspaper notice and London Gazette notices sent to Courts for setting up and booking space with local newspapers and London Gazette	BDBP	
			Print specification to be produced (to include details relating to ring-binders, CD covers and inserts)	BDBP	<i>This will explain how many hard copies of the Application Documents are required and how many electronic copies.</i>
		Fri 21 April	Last day for EIA workshops to discuss and resolve outstanding comments from latest review to commence.	ESC / Jacobs / BDBP	<i>Suggested – for discussion with team.</i>

Month	Week No.	Date	Action	Responsibility	Notes
	-3	Mon 24 April	Print specification to be provided to printers to secure quotations	BDBP [?]	ESC to confirm if it would like BDBP to assume responsibility for sourcing and instructing printers.
		Tues 25 April	Final form of landowner, highway and site notices and lists for service fixed.	BDBP	
			Desirable date for all Application Documents (other than draft Order) to be approved and sent to printers.	Jacobs / BDBP / ESC	
			Final scheme hectarage details to be provided to BDBP and BDBP to confirm application fee.	Jacobs / BDBP	
		Fri 28 April	Last day for all Application Documents (other than draft Order) to be sent to printers	Jacobs / BDBP / ESC	
			Deadline for Defra / Secretary of State and Schedule 5 / Schedule 6 bodies to make comments on draft Order (assuming sent on Friday 17 March and allowing 6 weeks (42 days) for comment)	Defra / Schedule 5 and 6 bodies	This allows 1 week for all comments to be incorporated into the final Order – this is a very tight timescale and we would not recommend it is reduced any further.
May	-2	Mon 1 May	BANK HOLIDAY		

Month	Week No.	Date	Action	Responsibility	Notes
		Tues 2 May	Earliest date first newspaper notice of application in local press can be published (this must be published not more than 14 days before application is submitted).		<p><i>Rule 14 prescribes the requirements here.</i></p> <p><i>Precise dates of publication for relevant newspapers to be confirmed.</i></p> <p><i>As noted below, we suggest the First TWAO application newspaper notice is published in local newspapers on Friday 5 May.</i></p>
		Wed 3 May	Proof Application Documents from printers (these should be reviewed and any printing issues raised with printers before full print run takes place)	Jacobs / BDBP	
		Fri 5 May	Deadline for finalising draft Order	BDBP	<i>The draft Order will be produced and printed by BDBP.</i>
			Electronic copies of all Application Documents prepared and USBs compiled.	ESC / Jacobs	<i>ESC to consider whether to establish a website with all application documents.</i>
			First TWAO application newspaper notice published in the following publications: <ul style="list-style-type: none"> • Lowestoft Journal • Beccles and Bungay Journal 	BDBP	<p><i>This is a suggested date on the assumption that we would use the same local newspaper as have been chosen for the s.239 notice -all currently publish on a Friday.</i></p>

Month	Week No.	Date	Action	Responsibility	Notes
			<ul style="list-style-type: none"> East Anglian Daily Times Eastern Daily Press 		<i>If other publications are to be included, a different publication date may be necessary.</i>
	-1	Mon 8 May	BANK HOLIDAY		
		Tues 9 May	ESC to place BDBP in funds in respect of TWAO application fee	ESC	
		Wed 10 May	All Application Documents delivered to BDBP for collation and preparation of the application	Jacobs/ESC	
		Fri 12 May	Copies of TWAO application to be delivered by hand to public inspection points in anticipation of TWAO application date	ESC	
	0	Tues 16 May	TWAO APPLICATION DATE		
			4 copies of TWAO application to be delivered by hand to Defra and 2 copies delivered to Parliament (House of Commons Library / House of Lords Library).	BDBP	<i>Rule 13</i> <i>Note that ESC may decide to seek a waiver under Rule 18 to only submit 1 hard copy of the TWAO application or to make an electronic only submission.</i>
			Landowner notices to be served.	Carter Jonas	<i>Rule 15</i>
			Copy of application and notices served on 'Schedule 5' statutory bodies.	BDBP	<i>Rule 13(3)</i>
			Notices served on 'Schedule 6' statutory bodies.	BDBP	<i>Rule 14(4)</i>

Month	Week No.	Date	Action	Responsibility	Notes
			Site notices and highways notices erected on site.	ESC [?]	<i>Rules 14(6) and (7)</i>
			ESC press notice issued and website launched	ESC	
		Wed 17 May	Newspaper notice appears in London Gazette.	BDBP	<i>Rule 14(1)</i>
		Thurs 18 May	Draft Affidavits of compliance with Rules 13, 14 and 15 and send out to relevant parties so that they are aware what they need to comply with.	BDBP	<p><i>The Affidavits of Compliance are submitted to Defra as soon as practicable after the objection period has expired.</i></p> <p><i>The parties who are swearing the Affidavit should advise BDBP as soon as possible if there are any amendments to be made to the Affidavits (e.g. re-service of Notices, or additional Notices being served, or reposting of Site Notices).</i></p>
		Fri 19 May	Second TWAO application newspaper notice published in the following publications: <ul style="list-style-type: none"> • Lowestoft Journal • Beccles and Bungay Journal • East Anglian Daily Times • Eastern Daily Press 	BDBP	<p><i>This is a suggested date on the assumption that we would use the same local newspaper as have been chosen for the s.239 notice -all currently publish on a Friday. If other publications are to be included, a different publication date may be necessary.</i></p>

Month	Week No.	Date	Action	Responsibility	Notes
	+1	Tues 23 May	Last possible date for publication of second TWAO application newspaper notice in local press (this must be published not later than 7 days after application is submitted).	BDBP	Precise dates of publication for relevant newspapers to be confirmed. As noted above, we suggest the Second TWAO application newspaper notice is published in local newspapers on Friday 19 May.
			Site notices/ inspection documents checked and replaced as necessary.	[TBC]	Rule 14(9)
	+2	Mon 29 May	BANK HOLIDAY		
			Site notices/ inspection documents checked and replaced as necessary.	[TBC]	Rule 14(9)
		Thurs 27 July	First permissible date for Second Full Council meeting pursuant to section 239 Local Government Act 1972 takes place. The first full council meeting available (14days after submission) is 27 th July CMIS > Committees > Full Council		Section 239(2)(b) Local Government Act 1972. Note Council meeting dates need to be confirmed. It is necessary to publish notice of the meeting 30 days in advance. The 24 May Full Council meeting is too soon after the proposed submission date as 14 days must be allowed.

Month	Week No.	Date	Action	Responsibility	Notes
June	+3	Tues 6 June	Site notices/ inspection documents checked and replaced as necessary.	[TBC]	<i>Rule 14(9)</i>
	+4	Tues 13 June	Site notices/ inspection documents checked and replaced as necessary.	[TBC]	<i>Rule 14(9)</i>
	+5	Tues 20 June	Site notices/ inspection documents checked and replaced as necessary.	[TBC]	<i>Rule 14(9)</i>
	+6	Tues 27 June	Statutory objection period expires.	N/a	<i>Rule 21</i>
July	+7	Tues 4 July	Receipt of and analysis of objections received to identify prospects of (a) resolving any objections and (b) a public inquiry being fixed to consider the application.	ESC, Jacobs and BDBP	
	+ 9	Mon 17 July	Submit completed sworn Affidavits to Defra with exhibits	BDBP	
	+10	Tues 25 July	Likely ' relevant date ' for Secretary of State to announce whether a public inquiry should be fixed. This date falls 4 weeks after the date on which the deadline for objections occurs. It also constitutes the "Starting Date" for later inquiry-related stages.	Defra	<i>Following this date, the programme will vary depending on whether or not a Pre Inquiry Meeting is fixed – please see note below.</i>

If a Pre Inquiry Meeting is fixed

ESC will have, from the Starting Date:

- (a) 3 weeks to publish notice of the Pre Inquiry Meeting;
- (b) 8 weeks to serve upon the Secretary of State and statutory objectors an outline Statement of Case;

The Pre-Inquiry Meeting will take place within 16 weeks of the Starting Date.

The Secretary of State will publish notice of the Pre-Inquiry meeting at least 3 weeks before it is due to take place.

Following the Pre-Inquiry Meeting, ESC will have a further 4 weeks within which to serve the Statement of Case upon the Secretary of State and statutory objectors.

If no Pre-Inquiry Meeting is fixed....

ESC will have, from the Starting Date:

- (a) 6 weeks within which to serve upon the Secretary of State and statutory objectors a statement of case.

Every document or the relevant part of each document, to which ESC intends to refer to in evidence before the inquiry must be sent to the Secretary of State with the Statement of Case, whilst each statutory objector must be served with notice specifying where these documents can be examined free of charge at all reasonable hours until the inquiry takes place.

BDB Pitmans LLP

13 February 2023

becclesandbungayjournal.co.uk

Beccles & Bungay

Friday February 10, 2023

JOURNAL

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Page 13

Blooming marvellous idea for towns



Win an August holiday



with Richardson's

Page 18

Pupils attacked by man in balaclava



The Premier Store at the top of Rigbourne Hill where the assaults happened

Teachers monitor area for child safety

Police say an attack on school pupils in Beccles by a man in a balaclava was not a "random assault".

Officers investigating two incidents believe the perpetrator of the assault on three schoolchildren may be linked to an attempted hit-and-run in the area just days earlier. The assault took place at around 8.15am by the

BRUNO BROWN
bruno.brown@newsquest.co.uk

Premier Store at Castle Hill on February 2. A man wearing a balaclava got out and punched several of the school children.

Officers are linking it to an earlier incident on January 30, when a motorist drove at a pupil crossing the road near the school. On January 30, at

around 8.25am the driver of a white VW car drove at speed at a pupil crossing the road in Castle Hill, narrowly missing him.

SET Beccles headteacher, Neil Ketteringham, said: "Our primary concern is always the safety of our students, so the recent news is very concerning and shocking to us."

Full story - Page 4

Kickbox champ

Fergus wins top title



Page 3



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OTHER

EAST SUFFOLK COUNCIL

East Suffolk Council has received the following applications, which it is required to advertise. This is not a full list of all applications received. A full list including copies of the application, plans and other documents submitted with the application can be viewed using our Public Access website: <http://publicaccess.eastsuffolk.gov.uk/online-applications/>.

Any representations should be made in writing to this address within 15 working days of the publication of this notice. All representations will be recorded on a public file, be viewable on the council's website, and will be referred to by the Secretary of State's inspector in the event of an appeal.

DC/23/0142/FUL – Change of upvc white windows to new Chartwell green upvc with glazing bars at 9 The Street, Wissett. **Reason for advertising:** Conservation Area

DC/23/0271/FUL – Retrospective – Garden Timber Structure at Wortwell Mill, Low Road, Homersfield. **Reason for advertising:** Affects Setting of Listed Building, Public Right of Way Affected

DC/22/3275/FUL – Change of use from holiday let to C3 Residential at The Cabin Holiday Let, Park Farm, Kings Lane, Weston. **Reason for advertising:** Departure

DC/23/0300/LBC – Listed Building Consent – Change of use of the existing ground floor rear unit and garage building (Class E) to 1 no. dwelling (C3), and associated alterations at 17 Market Place, Southwold. **Reason for advertising:** Conservation Area, Listed Building

DC/23/0299/FUL – Change of use of the existing ground floor rear unit and garage building (Class E) to 1 no. dwelling (C3), and associated alterations at 17 Market Place, Southwold. **Reason for advertising:** Conservation Area, Listed Building

DC/23/0297/FUL – Change of use of ground floor from former bank (Class E) to 1 no. dwelling (C3) at 17 Market Place, Southwold. **Reason for advertising:** Conservation Area, Listed Building

DC/23/0298/LBC – Change of use of ground floor from former bank (Class E) to 1 no. dwelling (C3) at 17 Market Place, Southwold. **Reason for advertising:** Conservation Area, Listed Building

DC/23/0240/FUL – Replacement to street facing bedroom and lounge windows with high quality white upvc frames with sash like appearance. Replacement of front door with composite upvc navy door at 65 Grove Road, Beccles. **Reason for advertising:** Conservation Area

DC/22/1631/FUL – The proposed development comprises 8 x steel workshop buildings bolted down to an existing concrete runway. These are for use as business starter units and as such will require Planning Permission and Change of Use as their position on the runway at Ellough is outside the approved Employment Zone by around 50 metres. Seven of these units are 'Quonset' style semi-circular roofed corrugated steel buildings and one is a small portal frame steel clad shed style building. As these are currently in-situ they will be requiring retrospective approval at Hornbill Business Park, Hornbill Way, Ellough. **Reason for advertising:** Major Application, Public Right of Way Affected

DC/22/4398/FUL – Construction of 1 no. dwelling, alterations to boundary wall and formation of new access and revised parking layout for no.5 at Land To The Rear of 5 Ringsfeld Road, Beccles. **Reason for advertising:** Conservation Area

DC/23/0246/VOC – Variation of Condition No. 2 of DC/21/2728/FUL – Change of use from place of worship to day care centre including internal alterations; extend to the rear to create three new offices and two new parking spaces; erect a detached shed to be used for storage; replace railings to the front and side – The new proposal is for a new first floor rather than a mezzanine at Halesworth Methodist Church, London Road, Halesworth. **Reason for advertising:** Conservation Area, Affects Setting of Listed Building
Philip Ridley BSc (Hons) MRTPI – Head of Planning & Coastal Management
East Suffolk Council
If you would like this document in large print, audio, Braille or an alternative format, please contact the Planning Support Team on 01394 444219.



EAST SUFFOLK COUNCIL

LOCAL GOVERNMENT ACT 1972

PROPOSED APPLICATION FOR THE LOWESTOFT TIDAL BARRIER ORDER

NOTICE CALLING THE FIRST MEETING OF THE COUNCIL TO APPROVE THE SUBMISSION OF A TRANSPORT AND WORKS ACT ORDER

NOTICE IS HEREBY GIVEN pursuant to the provisions of section 239 of the Local Government Act 1972, as applied to the above proposed Order by section 20 of the Transport and Works Act 1992, that a meeting of East Suffolk Council ("the Council") will be held at Riverside, 4 Canning Road, Lowestoft, NR33 0EQ on Wednesday 15 March 2023 at 6.30pm for the purpose of taking into consideration and approving (if thought fit):

- 1 the promotion by the Council of an application to the Secretary of State for the Environment, Food and Rural Affairs for an Order made under the Transport and Works Act 1992 to authorise the proposed construction, operation and maintenance of a new tidal barrier with a moveable gate across the channel entrance to Lake Lothing on the seaward side of the Basculle Bridge in Lowestoft, East Suffolk. The Order (if made) would, amongst other things, confer powers on the Council to compulsorily acquire and temporarily use land and to carry out other works and include provisions necessary for the purposes of, or for purposes ancillary to, the construction, operation and maintenance of the proposed tidal barrier;
- 2 subject to the above, an appropriate officer, in consultation with the Executive Board, taking all such steps as may be necessary or expedient to carry the above Resolution into effect, including all those steps required for the Council to apply for and thereafter to promote its application for the Order; and;
- 3 the corporate seal of the Council being affixed to any documents required to be sealed in connection with the application for and subsequent promotion of the Order.

10 February 2023

Philip Ridley
Head of Planning and Coastal Management



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Selection dilemma for Town boss



Sport

Driver fled after crash kills horse



Karen Harvey with Patch

Speeding BMW hit 'fabulous' Patch

A speeding driver killed a horse and left its rider shaken before fleeing the scene.

Edgaras Tilmantas had been driving down Church Lane in Earl Soham when he crashed into thoroughbred Welsh cross Patch.

Rider Karen Harvey praised her

**ELISABETH WILSON
AND SARAH CHAMBERS**
newsroom@newsquest.co.uk

"fabulous" 20-year-old horse for saving her life.

Tilmantas, 34, of Kesgrave, pleaded guilty to driving without

due care and attention and failing to stop after an accident - admitting to police he "panicked".

In his defence, Tilmantas said he is "living his own punishment". He is set to be sentenced on March 21.

Full story: Pages 8-9

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Page 37

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NOTICE OF APPLICATION FOR THE RENEWAL OF A SEX ESTABLISHMENT LICENCE

Local Government (Miscellaneous Provisions) Act 1982 LICENSING OF SEX ESTABLISHMENTS

Address of Premises: 68 Upper Orwell Street, Ipswich IP4 1HR. To all persons whom it may concern NOTICE IS HEREBY GIVEN that we: Cocktails Ltd of Unit 11, Canklow Meadows Industrial Estate, Rotherham S60 2XL, hereby give notice that we have applied to Ipswich Borough Council, under the provisions of the Local Government (Miscellaneous Provisions) Act 1982 for the renewal of a licence to use the premises referred to above as a *sex shop. Any person wishing to make representations about the application should make them in writing to the Licensing & Enforcement Manager, Licensing Dept., Ipswich Borough Council, Grafton House, 15 - 17 Russell Road, Ipswich, Suffolk, IP1 2DE, within 28 days of the date of this notice.

Signed: C Chapman
*On behalf of: Cocktails Ltd
Date: 07/02/23.

SUFFOLK COUNTY COUNCIL ROAD TRAFFIC REGULATION ACT 1984: SECTION 14

TEMPORARY CLOSURE OF PART OF THE U8801 STRAW LANE, SUDBURY

Suffolk County Council intends to make an order closing the U8801 Straw Lane, Sudbury from 10 metres east of the junction with Plough Lane for 30 metres eastbound to facilitate a water meter exchange. Other co-ordinated works may also take place during this period.

Access will be open for pedestrians and cyclists.

The diversion routes will be:

1. School Street, Friars Street, Plough Lane and no vice versa
2. Plough Lane, Friars Street, Church Street, the A131, The Croft, Croft Road, Burkitts Lane, the A131, School Street and no vice versa.

It is intended that the closure will operate from 22/02/2023 - 24/02/2023 but, if necessary, the order may remain in force for 18 months (or longer if extended by the Minister).

Enquiries should be made to TBF Traffic. Tel: (01449) 490865.

TEMPORARY CLOSURE OF PART OF THE B1075 PRINCES STREET, IPSWICH

Suffolk County Council has made an order closing the B1075 Princes Street, Ipswich from Burrell Road to Civic Drive to facilitate preventing disorder and safely control crowd movement during a football game. Other co-ordinated works may also take place during this period.

Access will be open for pedestrians and cyclists.

The diversion route will be Burrell Road, Stoke Street, Bridge Street, Greyfriars Road, Franciscan Way, Civic Drive, Handford Road, Ranelagh Road and vice versa.

It is intended that the closure will operate on 11/02/2023 from 1pm to 6pm but, if necessary, the order may remain in force for 18 months (or longer if extended by the Minister).

Enquiries should be made to Suffolk Constabulary. Tel: 07583 018447.

TEMPORARY CLOSURE OF PART OF THE U3117 GLENFIELD AVENUE, FELIXSTOWE

Suffolk County Council has made an order closing the U3117 Glenfield Avenue, Felixstowe from the junction with High Road West for 30 metres northbound to facilitate duct and cabling works. Other co-ordinated works may also take place during this period.

Access will be open for pedestrians and cyclists.

The diversion route will be High Road, West, the A1021, Fairfield Avenue, Glenfield Avenue and vice versa.

It is intended that the closure will operate from 11/02/2023 - 18/02/2023 but, if necessary, the order may remain in force for 18 months (or longer if extended by the Minister).

Enquiries should be made to Power On Connections. Tel: (01277) 811735.

SUFFOLK COUNTY COUNCIL (PARISH OF DALHAM) (FOOTPATH 18) (TEMPORARY CLOSURE) ORDER 2023

This order, which came into effect on 20/09/2022 closing Footpath 18, Dalham from the junction with the C660 Denham Road to the junction with Footpath 8 has been extended in force by the Minister until 29/02/2024 or until the completion of the works, whichever is the earlier.

This closure remains required due to the interests of public safety, to enable transport and keeping of horses, bridge construction and tree clearance. Without extension the order would have been in effect until 28/02/2023.

The diversion route remains.

Enquiries should be made to Kevin Smith. Tel: (01638) 501512. Email: kevin.smith@apd.ltd.uk

Date: 10/02/2023
Nigel Inniss, Head of Legal Services, Suffolk County Council, Endeavour House, 8 Russell Road, Ipswich IP1 2BX

RICARDO CARLOS NAVARRO (Deceased)

Pursuant to the Trustee Act 1925 any persons having a claim against or an interest in the Estate of the above named, late of 80 Saxmundham Road, Aldeburgh IP15 5PD. Previous address 3 Heights Close, London SW20 0TH, who died on 20/10/2022, are required to send written particulars thereof to the undersigned on or before 11/04/2023, after which date the Estate will be distributed having regard only to the claims and interests of which they have had notice.

Angela Spray, c/o Fairweather Law, 14 Museum Street, Ipswich, IP1 1HT (Ref:AER/NA00531)

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EAST SUFFOLK COUNCIL LOCAL GOVERNMENT ACT 1972 PROPOSED APPLICATION FOR THE LOWESTOFT TIDAL BARRIER ORDER

NOTICE CALLING THE FIRST MEETING OF THE COUNCIL TO APPROVE THE SUBMISSION OF A TRANSPORT AND WORKS ACT ORDER

NOTICE IS HEREBY GIVEN pursuant to the provisions of section 239 of the Local Government Act 1972, as applied to the above proposed Order by section 20 of the Transport and Works Act 1992, that a meeting of East Suffolk Council ("the Council") will be held at Riverside, 4 Canning Road, Lowestoft, NR33 0EQ on Wednesday 15 March 2023 at 6.30pm for the purpose of taking into consideration and approving (if thought fit):

- 1 the promotion by the Council of an application to the Secretary of State for the Environment, Food and Rural Affairs for an Order made under the Transport and Works Act 1992 to authorise the proposed construction, operation and maintenance of a new tidal barrier with a moveable gate across the channel entrance to Lake Lothing on the seaward side of the Bascule Bridge in Lowestoft, East Suffolk. The Order (if made) would, amongst other things, confer powers on the Council to compulsorily acquire and temporarily use land and to carry out other works and include provisions necessary for the purposes of, or for purposes ancillary to, the construction, operation and maintenance of the proposed tidal barrier;
- 2 subject to the above, an appropriate officer, in consultation with the Executive Board, taking all such steps as may be necessary or expedient to carry the above Resolution into effect, including all those steps required for the Council to apply for and thereafter to promote its application for the Order; and;
- 3 the corporate seal of the Council being affixed to any documents required to be sealed in connection with the application for and subsequent promotion of the Order.

10 February 2023
Philip Ridley
Head of Planning and Coastal Management

PUBLIC NOTICE

WEST SUFFOLK COUNCIL

Town and Country Planning (Development Management Procedure) (England) Order 2015

Planning (Listed Building and Conservation Areas) ACT 1990

Town and Country Planning (General Permitted Development) (Amendment) Order

Advert types: EIA-Applications accompanied by an environmental statement; DP-Not in accordance with the Development Plan; PROW-Affecting a public right of way; M-Major development; LB-Works to a Listed Building; CLB-Within the curtilage of a Listed Building; SLB-Affecting the setting of a Listed Building; LBDC-Listed Building discharge conditions; C-Affecting a Conservation Area; TPO-Affecting trees protected by a Tree Preservation Order; LA- Local Authority Application; LC-listed building in a conservation area; CULBA-curtilage of a listed building and conservation area; PA-Prior notification application; PIP-permission in principle

Notice is given that West Suffolk Council have received the following application(s):

1. DC/22/2208/FUL - Planning application - change of use to cemetery/burial grounds, Cemetery Hengrave Hall, Bury Road (M)

2. DC/22/2228/FUL - Planning application - 10 dwellings with associated access and garages (following demolition of existing dwellings), Land Off Friday Street, West Row (TPO)

3. DC/23/0056/FUL - Planning application - change of use from farm building to two holiday lets (class C1), Littlemoor Hall Farm The Green, Bardwell (CULBCA)

4. DC/23/0111/FUL - Planning application - a. change of use of ground floor retail to a mixed use retail spaces for smaller units to be rented and b. change of use of upper levels into four residential units including extending the loft space at rear of building, 2-3 The Chauntry Centre High Street, Haverhill (SLB)

5. DC/23/0126/LB - Application for listed building consent - retention and replacement of two cellar vents to front elevation, 6 St Marys Square Bury St Edmunds, Suffolk (LC)

6. DC/23/0134/FUL - Planning application - alterations to allow for drive-thru facility at existing restaurant including single storey rear extension for collection window, drive-thru lanes, car park alterations and hard and soft landscaping, Pancake And Waffle Shack Millford Service Area, A11 Barton Mills South Bound (PROW)

7. DC/23/0135/VAR - Planning application - variation of condition two of DC/22/0989/HH to enable use of revised plans to allow for the a. material of single pitched roof of garage to be changed from a sedum roof to a single ply membrane b. change in position of door to the garden store from the side to the rear elevation, Jacobs Manor Church Street, Withersfield (CULBCA)(SLB)

8. DC/23/0136/FUL - Planning application - one storage container and 1.8 metre high security fencing, Telephone Exchange Queensway, Mildenhall (C)

9. DC/23/0144/LB - Application for listed building consent - solar panels to roof of rear extension, 32 St Andrews Street South Bury St Edmunds, Suffolk (LC)

10. DC/23/0148/VAR - Planning application - variation of condition 2 of DC/21/2428/FUL to allow use of revised drawing for one dwelling (following demolition of existing dwelling), 16A Church Walk Mildenhall, Suffolk (C) (SLB)

11. DC/23/0152/RM - Reserved matters application - partial submission of details under DC/14/2096/HYB - means of landscaping at western site boundary area for the construction of up to 375 dwellings (including 112 affordable homes), and the construction of a new primary school, land for ecological mitigation and open space and associated infrastructure (as amended). Land Off Station Road Station Road, Lakenheath (M)(TPO)

HOUSEHOLDER APPLICATIONS:

In the event of an appeal against refusal of planning permission for householder applications, which is dealt with on the basis of written representations, any representations made will be sent to the Secretary of State and there will be no further opportunity to comment at the appeal stage.

1. DC/23/0049/HH - Householder planning application - installation of 16 solar panels to rear roof, 5 St Marys View Pakenham, Suffolk (SLB)

2. DC/23/0130/HH - Planning application - replacement of existing gate with automated timber gates, Burnthouse Farm Cains Hill, Stoke By Clare (SLB)

West Suffolk Council, West Suffolk House, Western Way, Bury St. Edmunds IP33 3YU

The applications and associated documentation can be viewed via Public Access on our website <https://planning.westsuffolk.gov.uk/online-applications/>. Representations should be submitted within of 21 days of the date of this notice by using the online comment form on our website, by e-mail to planning.technical@westsuffolk.gov.uk or by post to - Planning & Growth, West Suffolk House, Western Way, Bury St. Edmunds IP33 3YU.

Representations received will be published on our website where they will be available for public inspection and copying and will be used in connection with any procedure associated with the determination of the application including an appeal.

10 October 2021
Julie Baird, Director (Planning & Growth)

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PROPERTY, LIFESTYLE, INTERIORS



Agenda Item 9
ES/1504

Could Omo spark bidding war?

Sport



Brutal street murder captured on camera

Hunt under way for killer

EXCLUSIVE

BRUNO BROWN
bruno.brown@newsquest.co.uk

This is the horrific moment a man was stabbed to death on a quiet street just yards from Great Yarmouth's Golden Mile.

The victim was approached by his killer on St Peter's Road, near to the seafront, at around 12.40pm on Wednesday.

The attacker was wielding a large knife, with which he stabbed the man.

The victim, 23, staggered to

nearby Wellington Road, where he collapsed.

Witnesses said members of the public made desperate attempts to save his life, but he was pronounced dead at the scene.

Police are hunting the killer but have yet to make any arrests.

Full story: Page 6



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ALCOHOL & Licensing

Notice of application for a premises licence

Notice is hereby given that DUARTE & COMPANHIA LTD has applied in respect of Duarte & Companhia, Unit 3 Hereward Way Business Park, Norwich, NR16 2SR for a Premises Licence under the Licensing Act 2003 to allow:

SALE OF ALCOHOL, OFF LICENSE, Mondays To Saturdays From 09:00 Am Until 19:00 and Sundays from 09:00 Am Until 17:00.

Representations to this application must be made in writing by 23/02/2023 to the Licensing Team, Breckland Council, Elizabeth House, Walpole Loke, Dereham, NR19 1EE where applications can be inspected during office hours.

It is an offence liable on summary conviction to a maximum fine of £5,000 to knowingly or recklessly make a false statement in connection with this application.

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OTHER

ROAD TRAFFIC REGULATION ACT 1984: SECTION 14 TEMPORARY CLOSURE OF PART OF THE C911 KIRKLEY RUN AND C913 LONG ROAD, LOWESTOFT

Suffolk County Council has made an order closing the:

1. C911 Kirkley Run, Lowestoft southbound from the junction with Long Road to no. 87A
2. C913 Long Road, Lowestoft westbound from the junction with Kirkley Run to the junction with Homefield Avenue.

This is to facilitate fibre ducting works. Other co-ordinated works may also take place during this period. Access will be open for pedestrians and cyclists. The diversion routes will be:

1. Northbound diversion for Southbound closure - Blackheath Road, Tom Crisp Way, Waveney Drive, Kirkley Run with no vice versa
2. Eastbound diversion for Westbound closure - Long Road, Westwood Avenue, Colville Road, Victoria Road, Waveney Drive, Tom Crisp Way, Blackheath Road, Long Road with no vice versa.

It is intended that the closures will operate from:

1. 11/02/2023 - 19/02/2023
2. 12/02/2023 - 19/02/2023.

If necessary, the order may remain in force for 18 months (or longer if extended by the Minister). Enquiries should be made to Pod-Trak. Tel: 0845 504190. Date: 10/02/2023

Nigel Inniss, Head of Legal Services, Suffolk County Council, Endeavour House, 8 Russell Road, Ipswich IP1 2BX

ROBERT GEORGE RAMM Deceased

Pursuant to the Trustee Act 1925 anyone having a claim against or an interest in the Estate of the deceased, late of 7 Old Vicarage Park, Narborough, King's Lynn, Norfolk, PE32 1TF, who died on 20/12/2022, must send written particulars to the address below by 11/04/2023, after which date the Estate will be distributed having regard only to claims and interests notified.

Anne King c/o Ward Gethin Archer, 10 Tuesday Market Place, King's Lynn, PE30 1JT. Ref R27935-1-0 EEW

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OTHER

EAST SUFFOLK COUNCIL LOCAL GOVERNMENT ACT 1972 PROPOSED APPLICATION FOR THE LOWESTOFT TIDAL BARRIER ORDER NOTICE CALLING THE FIRST MEETING OF THE COUNCIL TO APPROVE THE SUBMISSION OF A TRANSPORT AND WORKS ACT ORDER

NOTICE IS HEREBY GIVEN pursuant to the provisions of section 239 of the Local Government Act 1972, as applied to the above proposed Order by section 20 of the Transport and Works Act 1992, that a meeting of East Suffolk Council ("the Council") will be held at Riverside, 4 Canning Road, Lowestoft, NR33 0EQ on Wednesday 15 March 2023 at 6.30pm for the purpose of taking into consideration and approving (if thought fit):

- 1 the promotion by the Council of an application to the Secretary of State for the Environment, Food and Rural Affairs for an Order made under the Transport and Works Act 1992 to authorise the proposed construction, operation and maintenance of a new tidal barrier with a moveable gate across the channel entrance to Lake Lothing on the seaward side of the Bascule Bridge in Lowestoft, East Suffolk. The Order (if made) would, amongst other things, confer powers on the Council to compulsorily acquire and temporarily use land and to carry out other works and include provisions necessary for the purposes of, or for purposes ancillary to, the construction, operation and maintenance of the proposed tidal barrier;
- 2 subject to the above, an appropriate officer, in consultation with the Executive Board, taking all such steps as may be necessary or expedient to carry the above Resolution into effect, including all those steps required for the Council to apply for and thereafter to promote its application for the Order; and;
- 3 the corporate seal of the Council being affixed to any documents required to be sealed in connection with the application for and subsequent promotion of the Order.

10 February 2023

Philip Ridley
Head of Planning and Coastal Management

PLANNING

**THE NORFOLK COUNTY COUNCIL
(THETFORD, VARIOUS ROADS) (30 MPH SPEED LIMIT) ORDER 2023**

The Norfolk County Council has made the above Order under the Road Traffic Regulation Act 1984 on 7th February 2023, which comes into operation on 13th February 2023. The effect of the Order is to prohibit any vehicle from exceeding 30 miles per hour along the lengths of roads specified in the Schedule below. The following Orders are revoked in their entirety on the commencement of this Order:-

- i) The Norfolk County Council (Thetford, Mundford Road) 40mph Speed Limit Order 1993;
- ii) The Norfolk County Council (Norwich Road, Thetford/Kilverstone) 50mph Speed Limit Order 1995;
- iii) The Norfolk County Council (Thetford, Hurth Way) 40mph Speed Limit Order 1998;
- iv) The Norfolk County Council (Thetford, A1075 Norwich Road) 40mph Speed Limit Order 2003;
- v) The Norfolk County Council (Thetford, London Road) 40mph Speed Limit Order 2015; and
- vi) The Norfolk County Council (Thetford, Various Roads) 40mph Speed Limit Order 2019.

The descriptions of the lengths in the Schedule below of A1066 Hurth Way and C587 London Road have been updated for clarity, and the length of the A1066 Mundford Road has been shortened, from those advertised on 20th August 2021. A copy of the Order and a plan may be viewed online at <https://norfolk.citizenspace.com/>. Copies may also be available for inspection at Norfolk County Council, County Hall, Norwich and at the offices of Breckland District Council, Elizabeth House, Walpole Loke, Dereham during normal office hours. However, in office staffing levels have been reduced and viewing online would be recommended.

The Officer dealing with the public enquiries concerning this scheme is Mr C Queen, telephone 01603 223975 or 0344 800 8020.

SCHEDULE – In the Town of Thetford

30mph Speed Limit	
A1066 Hurth Way	from its junction with A1066 Mundford Road Roundabout, southwards, to its junction with A1088 Euston Road Roundabout, for a distance of 733m.
C148 Kilverstone Road	from its junction with A1075 Norwich Road for a distance of 317 metres eastwards to its joining with the C148 Brettenham Road.
C587 London Road	from a point 300 metres north of its junction with A134 Brandon Road to its junction with A11 Thetford Bypass South Roundabout (C587 junction) a distance of 2210m.
A1066 Mundford Road	from a point 35m north of the centreline of its junction with U30210 Station Lane, southwards, for its entire length of 1140m.
A1075 Norwich Road	from its junction with A1066 Mundford Road Roundabout to a point 370 metres north-east of the centreline of its junction with Kilverstone Road.
C587 Norwich Road	from its junction with A1066 Mundford Road Roundabout for a distance of 44 metres south westwards.
3P500/12 Victory Way (formerly referred to as West Main Street and Hoy Drive)	from its junction with A1075 Norwich Road for a distance of 30 metres north-westwards.

DATED this 10th day of February 2023
Katrina Hulatt, Assistant Director of Governance (Legal Services)
County Hall, Martineau Lane, Norwich NR1 2DH
Note: Information you send to the Council will be used for any purpose connected with the making or confirming of the Order and will be held as long as reasonably necessary for those purposes. It may also be released to others in response to freedom of information requests.
ALW/71628(Thetford)JA068Various Roads30mphSL0j23

PLANNING

SOUTH NORFOLK COUNCIL

TOWN AND COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (ENGLAND) ORDER 2015, NOTICE UNDER ARTICLE 13, PLANNING (LISTED BUILDING AND CONSERVATION AREAS) ACT 1990

The following applications have been submitted to the Council:

2023/0157 ALBURGH, Land West Of Long Bridge House, Burntoak Lane – Notification for Prior Approval for change of use and associated building works of an agricultural building to a dwelling house (QA and QB) **Reason(s)**: Listed Building and/or curtilage.

2023/0156 ALBURGH, Land West Of Pied Bridge Farm, Burntoak Lane – Notification for Prior Approval for change of use and associated building works of an agricultural building to a dwellinghouse (QA and QB) **Reason(s)**: Listed Building and/or curtilage.

2023/0140&2023/0141 TASBURGH, Old Hall Farm, Church Road – Removal of extension with new single storey rear extension **Reason(s)**: Listed Building and/or curtilage.

2023/0116 TACOLNESTON, Land At 59, Norwich Road – Variation of condition 1 of 2022/1963 – W/C to be wheelchair accessible **Reason(s)**: Listed Building and/or curtilage.

2023/0182 MORNINGTHORPE, The Old Rectory, Edges Lane – Variation of condition 2 of 2020/2460 – design and layout of new windows and french doors **Reason(s)**: Listed Building and/or curtilage.

2023/0032 BROCKDISH, Brockdish Hall, Hall Road – External works to include repairs to existing 2 windows and replacement of fireplace **Reason(s)**: Listed Building and/or curtilage.

2023/0162 THURTON, Land East Of Hillside Bungalow, Cookes Road – Single storey dwelling and detached double garage **Reason(s)**: Does not accord with development plan.

2022/2248 HARLESTON, Workshop At, Everson's Lane – Conversion of private workshop space to residential use. **Reason(s)**: Listed Building and/or curtilage, Affects a Conservation Area.

2023/0171 HINGHAM, Land South Of, Watton Road – Change of use of agricultural land to dog walking and activity area with fenced enclosures, hardstanding for vehicles and new two field shelters. **Reason(s)**: Major development.


2023/0147 WRENINGHAM, Fir Grove, Hethel Road – Upgrading and improvements to outbuildings, including replacement windows, doors and insertion of new openings. **Reason(s)**: Listed Building and/or curtilage.

2023/0148 HARDWICK, The Laurels, The Street – Replace windows, resize 1 of window and replace damaged beam **Reason(s)**: Listed Building and/or curtilage.

2023/0185 HINGHAM, Agricultural Building North Of The Old Dairy, Watton Road – Demolition of agricultural building with extant permission to convert to a single dwelling, two new dwellings and cartlidges, with associated change of use of land from agricultural to residential. **Reason(s)**: Listed Building and/or curtilage. Applications can be viewed at Thorpe Lodge 1 Yarmouth Road Norwich NR7 0DU or online at www.southnorfolkandbroadland.gov.uk. All comments must be received within **21 days** of this Notice (excluding Bank Holidays) and can be sent to planning@southnorfolkandbroadland.gov.uk. Comments made will be open to public inspection and available to view on the Council's website. They will be forwarded to the Planning Inspectorate in the case of an Appeal. Please see our Privacy Notice on our website for further details.

Helen Mellors AD Planning Dated: 9th February 2023

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The Journal LOWESTOFT

Friday February 10, 2023

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Agenda Item 9

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Page 3

ES/1504

Oscar scores winner

Pele masterpiece is in safe hands



Major milestone for third crossing



Diversions will be in place for the continuing construction of the Gull Wing bridge

Roundabout work starts next month

A significant milestone in the continuing construction of the £126.75m Gull Wing bridge in Lowestoft will see major works take centre stage from next month.

With a new roundabout to be built on the northern side of Lake Lothing, along with an approach road to the bridge, works lasting "no longer than six months" will start on March 1.

However, motorists are being

MARK BOGGIS

mark.boggis@newsquest.co.uk

warned to expect delays as sections of three busy roads "on the northern side of the project" are temporarily closed amid the continuing third crossing works.

A spokesman for the project said: "Denmark Road, Peto Way and the southern end of Rotterdam Road will be closed to

vehicles from 7am on Wednesday March 1 to allow for the building of the new northern roundabout and approach road to the bridge.

"The work is anticipated to take no longer than six months."

With "an official diversion route" in place, the spokesman added: "We apologise for any short term inconvenience this closure may cause."

Full story - Page 4

Win an August holiday



with Richardson's

Page 7

Town to bloom! Daffodils on their way



Page 17

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OTHER

EAST SUFFOLK COUNCIL

East Suffolk Council has received the following applications, which it is required to advertise. This is not a full list of all applications received. A full list including copies of the application, plans and other documents submitted with the application can be viewed using our Public Access website: <http://publicaccess.eastsuffolk.gov.uk/online-applications/>.

Any representations should be made in writing to this address within 15 working days of the publication of this notice. All representations will be recorded on a public file, be viewable on the council's website, and will be referred to by the Secretary of State's inspector in the event of an appeal.

DC/23/0142/FUL – Change of upvc white windows to new Chartwell green upvc with glazing bars at 9 The Street, Wissett. **Reason for advertising:** Conservation Area

DC/23/0271/FUL – Retrospective – Garden Timber Structure at Wortwell Mill, Low Road, Homersfield. **Reason for advertising:** Affects Setting of Listed Building, Public Right of Way Affected

DC/22/3275/FUL – Change of use from holiday let to C3 Residential at The Cabin Holiday Let, Park Farm, Kings Lane, Weston. **Reason for advertising:** Departure

DC/23/0300/LBC – Listed Building Consent – Change of use of the existing ground floor rear unit and garage building (Class E) to 1 no. dwelling (C3), and associated alterations at 17 Market Place, Southwold. **Reason for advertising:** Conservation Area, Listed Building

DC/23/0299/FUL – Change of use of the existing ground floor rear unit and garage building (Class E) to 1 no. dwelling (C3), and associated alterations at 17 Market Place, Southwold. **Reason for advertising:** Conservation Area, Listed Building

DC/23/0297/FUL – Change of use of ground floor from former bank (Class E) to 1 no. dwelling (C3) at 17 Market Place, Southwold. **Reason for advertising:** Conservation Area, Listed Building

DC/23/0298/LBC – Change of use of ground floor from former bank (Class E) to 1 no. dwelling (C3) at 17 Market Place, Southwold. **Reason for advertising:** Conservation Area, Listed Building

DC/23/0240/FUL – Replacement to street facing bedroom and lounge windows with high quality white upvc frames with sash like appearance. Replacement of front door with composite upvc navy door at 65 Grove Road, Beccles. **Reason for advertising:** Conservation Area

DC/22/1631/FUL – The proposed development comprises 8 x steel workshop buildings bolted down to an existing concrete runway. These are for use as business starter units and as such will require Planning Permission and Change of Use as their position on the runway at Ellough is outside the approved Employment Zone by around 50 metres. Seven of these units are 'Quonset' style semi-circular roofed corrugated steel buildings and one is a small portal frame steel clad shed style building. As these are currently in-situ they will be requiring retrospective approval at Hornbill Business Park, Hornbill Way, Ellough. **Reason for advertising:** Major Application, Public Right of Way Affected

DC/22/4398/FUL – Construction of 1 no. dwelling, alterations to boundary wall and formation of new access and revised parking layout for no.5 at Land To The Rear of 5 Ringsfield Road, Beccles. **Reason for advertising:** Conservation Area

DC/23/0246/VOC – Variation of Condition No. 2 of DC/21/2728/FUL – Change of use from place of worship to day care centre including internal alterations; extend to the rear to create three new offices and two new parking spaces; erect a detached shed to be used for storage; replace railings to the front and side – The new proposal is for a new first floor rather than a mezzanine at Halesworth Methodist Church, London Road, Halesworth. **Reason for advertising:** Conservation Area, Affects Setting of Listed Building

Philip Ridley BSc (Hons) MRTPI – Head of Planning & Coastal Management
East Suffolk Council

If you would like this document in large print, audio, Braille or an alternative format, please contact the Planning Support Team on 01394 444219.



EAST SUFFOLK COUNCIL

LOCAL GOVERNMENT ACT 1972

PROPOSED APPLICATION FOR THE LOWESTOFT TIDAL BARRIER ORDER

NOTICE CALLING THE FIRST MEETING OF THE COUNCIL TO APPROVE THE SUBMISSION OF A TRANSPORT AND WORKS ACT ORDER

NOTICE IS HEREBY GIVEN pursuant to the provisions of section 239 of the Local Government Act 1972, as applied to the above proposed Order by section 20 of the Transport and Works Act 1992, that a meeting of East Suffolk Council ("the Council") will be held at Riverside, 4 Canning Road, Lowestoft, NR33 0EQ on Wednesday 15 March 2023 at 6.30pm for the purpose of taking into consideration and approving (if thought fit):

- 1 the promotion by the Council of an application to the Secretary of State for the Environment, Food and Rural Affairs for an Order made under the Transport and Works Act 1992 to authorise the proposed construction, operation and maintenance of a new tidal barrier with a moveable gate across the channel entrance to Lake Lothing on the seaward side of the Bascule Bridge in Lowestoft, East Suffolk. The Order (if made) would, amongst other things, confer powers on the Council to compulsorily acquire and temporarily use land and to carry out other works and include provisions necessary for the purposes of, or for purposes ancillary to, the construction, operation and maintenance of the proposed tidal barrier;
- 2 subject to the above, an appropriate officer, in consultation with the Executive Board, taking all such steps as may be necessary or expedient to carry the above Resolution into effect, including all those steps required for the Council to apply for and thereafter to promote its application for the Order; and;
- 3 the corporate seal of the Council being affixed to any documents required to be sealed in connection with the application for and subsequent promotion of the Order.

10 February 2023

Philip Ridley
Head of Planning and Coastal Management

MARGARET ELLEN MARTIN (Deceased)

Pursuant to the Trustee Act 1925 any persons having a claim against or an interest in the Estate of the above named, late of 1 Wainwright Close, Lowestoft, Suffolk, NR32 4WG, who died on 02/05/2022, are required to send written particulars thereof to the undersigned on or before 11/04/2023, after which date the Estate will be distributed having regard only to the claims and interests of which they have had notice.

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Lowestoft Flood Risk

Economic Footprint and Impact Report

May 2022

Mott MacDonald
10 Fleet Place
London EC4M 7RB
United Kingdom

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mottmac.com

Lowestoft Flood Risk

Economic Footprint and Impact Report

May 2022

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
1	01/02/2022	NH, KB	MM SD	OS	Draft report
2	31/05/2022	NH, KB	MM SD	OS	2 ND Draft report

Document reference: 100105708 | 2

Information class: Standard

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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.

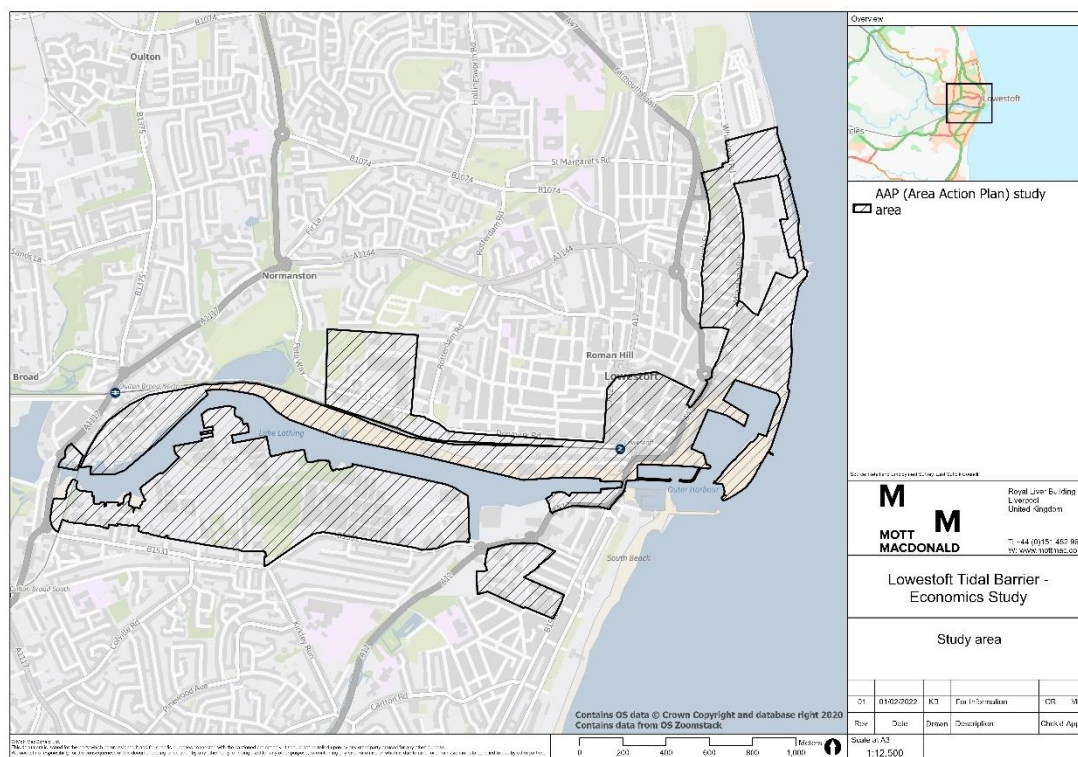
The study has been commissioned because existing methods of supporting the case for investment in flood defences do not capture the economic benefits from employment land, jobs and Gross Value Added (GVA) nor do they include development on land that is presently vacant or under-utilised. The methods 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 study³. 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



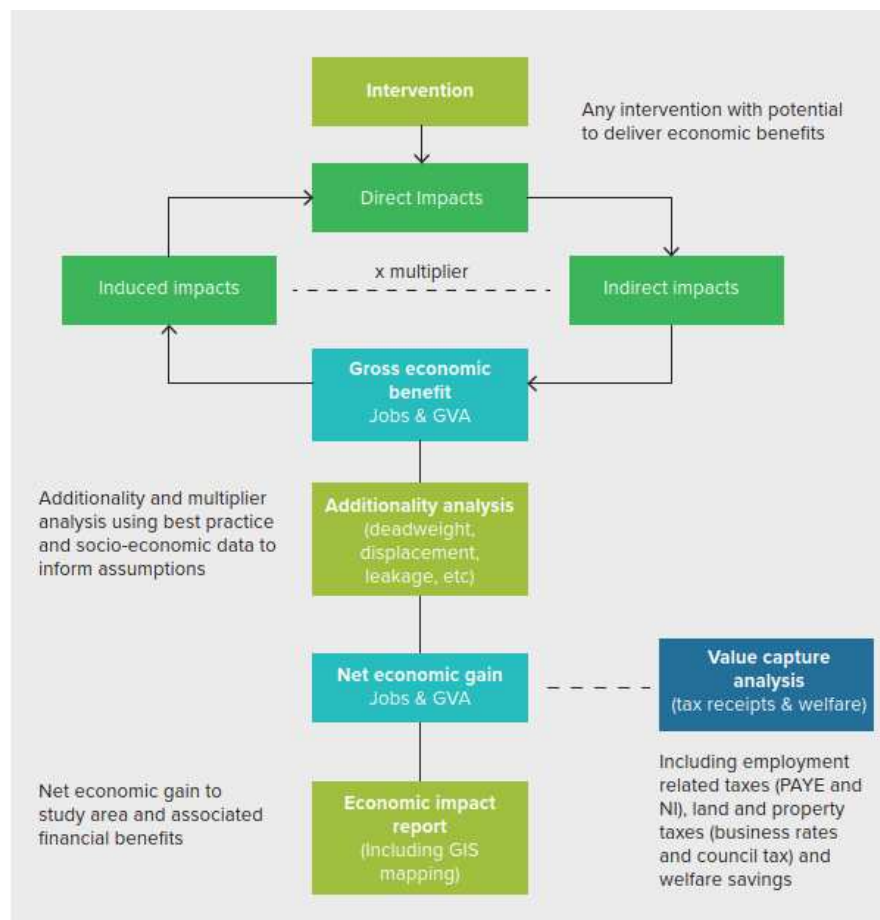
Source: Mott MacDonald

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 Waveney⁴ 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 \(publishing.service.gov.uk\)](https://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

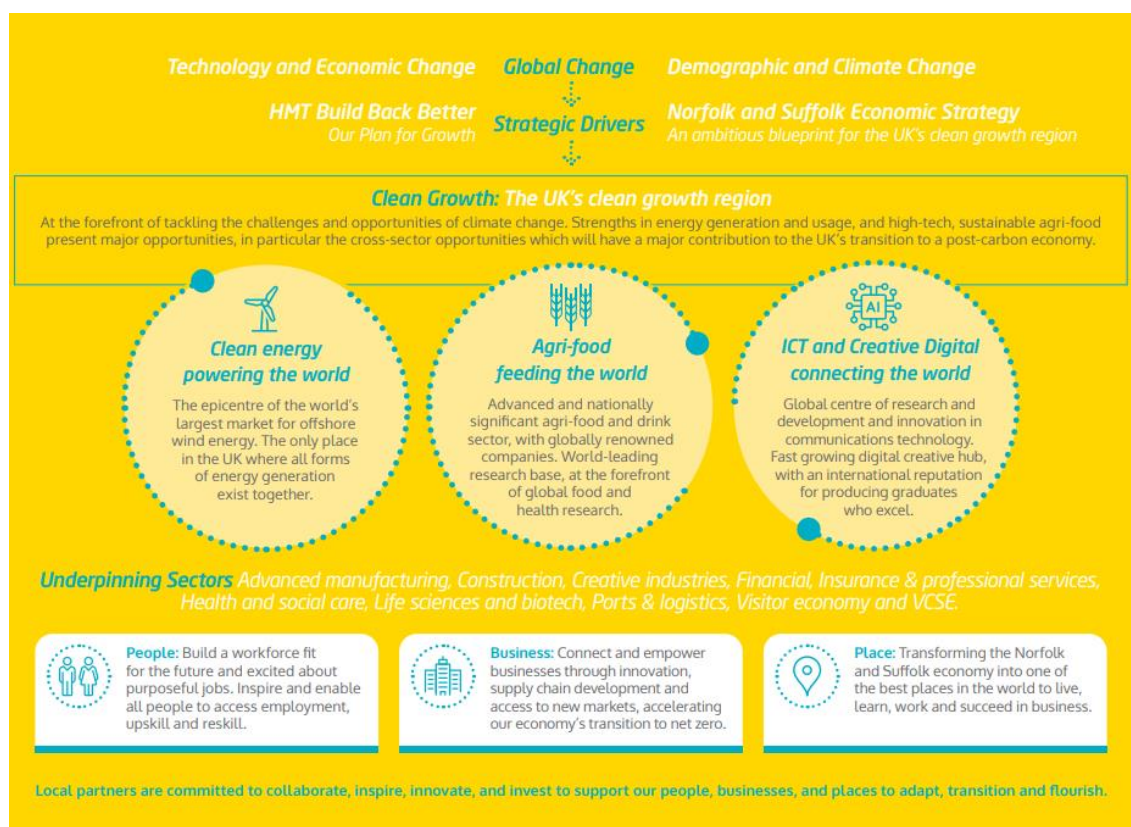
The New Anglian LEP Economic Strategy was published in 2022 and builds on the COVID-19 Economic Recovery Restart Plan. It also replaces the old Economic Strategy published in 2017 and the Local Industrial Strategy published in 2019.

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 \(newanglia.co.uk\)](https://www.newanglia.co.uk/~/media/Files/2022/01/FINAL-Norfolk-and-Suffolk-economic-strategy-Jan-2022.pdf)

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

- **Clean growth**
 - o 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**
 - o 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 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**
 - o 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.

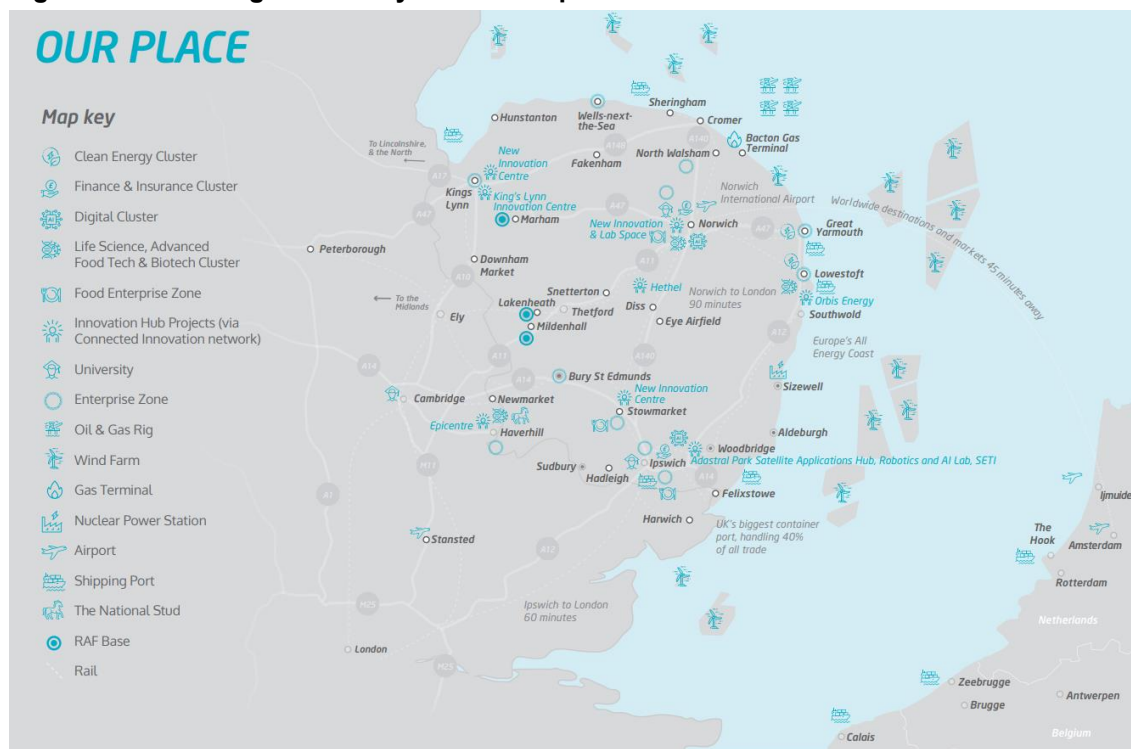
In addition to these sector specialisms the strategy identifies the following underpinning sectors as being key to supporting the region's growth potential.

- **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 Zone⁵. 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.

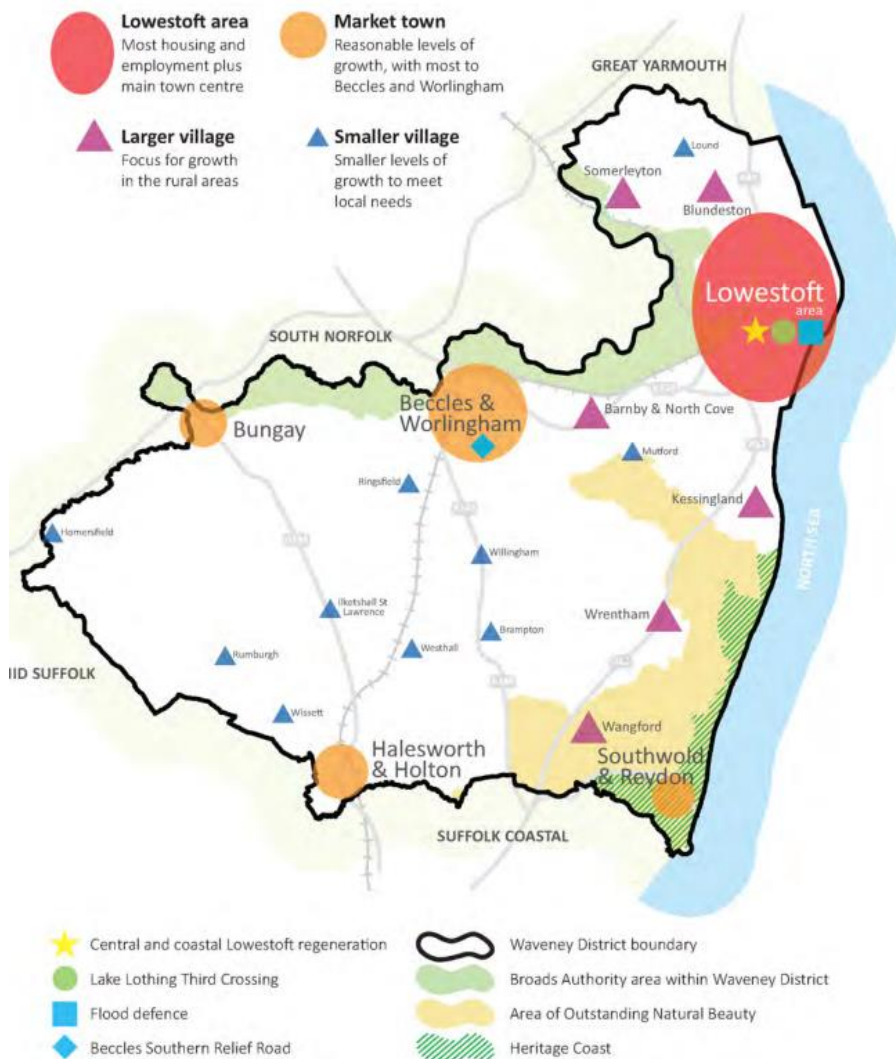
The Local Plan acknowledges 10 strategic priorities as follows:

- 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

Figure 5 - Key Diagram



Source: Waveney Local Plan 2019 [Item-11-APPENDIX-A-Waveney-Local-Plan.pdf \(eastsuffolk.gov.uk\)](https://www.eastsuffolk.gov.uk/Item-11-APPENDIX-A-Waveney-Local-Plan.pdf)

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 regeneration⁶ 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.

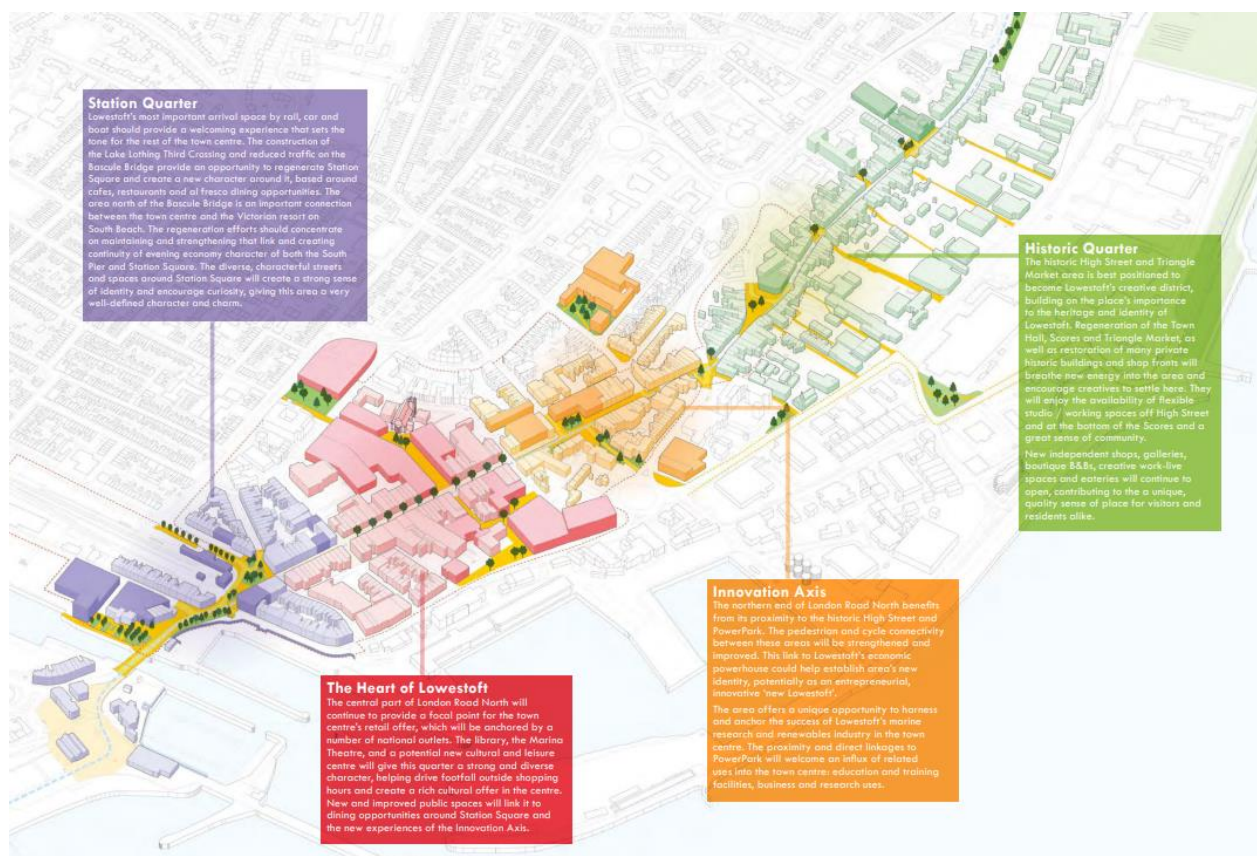
The masterplan identifies a development framework of four distinctive character areas within the town centre set out in Table 2.3 below and shown spatially in Figure 2.6.

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&b's and hotels.

Source: Town Centre Masterplan 2020 [LDA 09 Submission Plain A4 P \(eastsoffolk.gov.uk\)](#)

Figure 2.6: Town Centre Masterplan Character Areas



Source: Town Centre Masterplan 2020 [LDA 09 Submission Plain A4 P \(eastsoffolk.gov.uk\)](#)

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 	<p>The Seafront vision is a programme of projects set to improve the seafront. The changes include:</p> <ul style="list-style-type: none"> • 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.

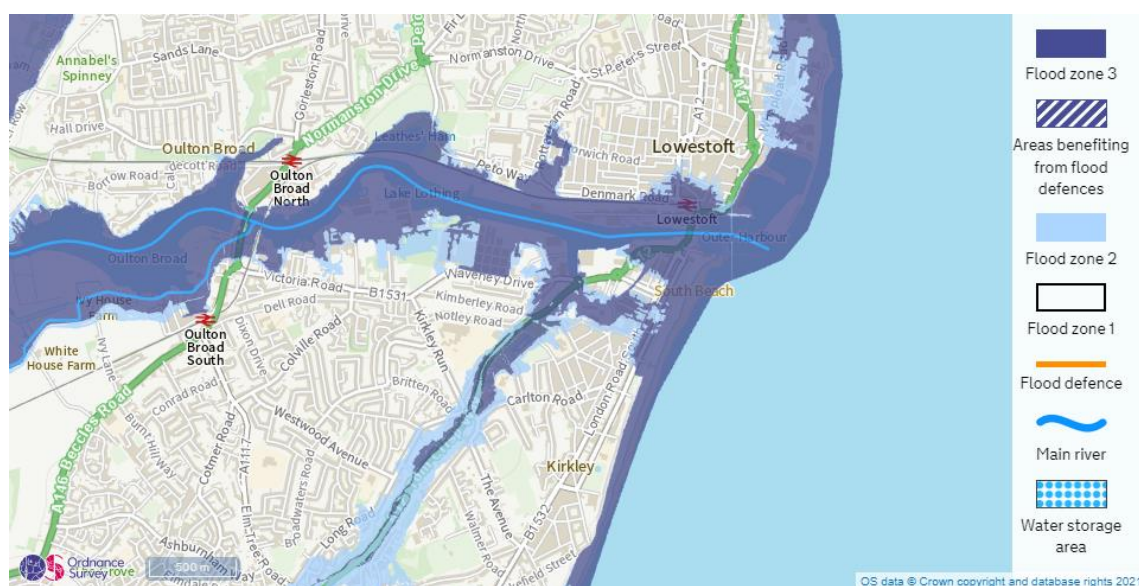
3 Flooding and Flood Risk

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 events⁷; 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.

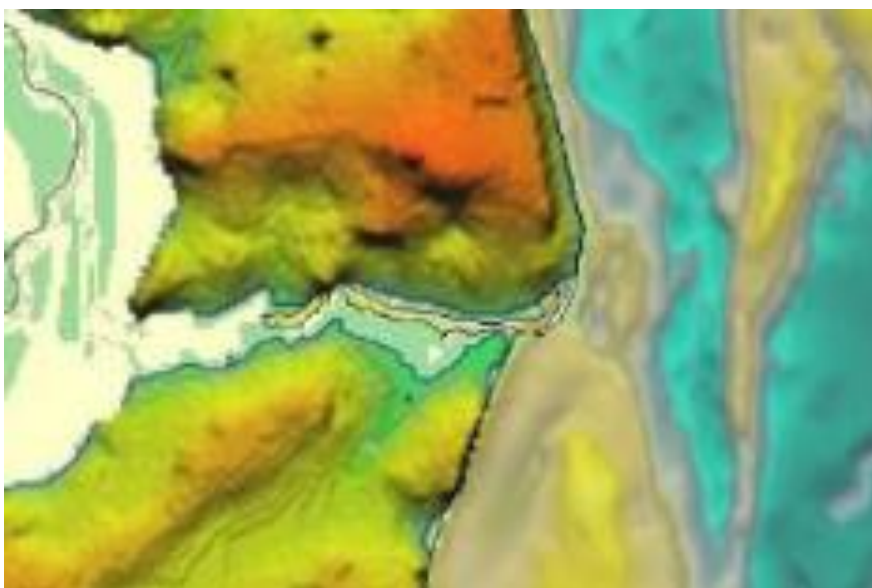
⁷ Note the map does not distinguish between the two types of flooding

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, Tanning 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)
<i>1953 Storm Surge</i>	3.35	28 January 1994	2.41
<i>5th December 2013</i>	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	<i>Highest Astronomical tide (HAT)</i>	1.4
3 January 1976	2.68	<i>Mean High Water Spring (MHWS)</i>	0.9
9 November 2007	2.63	<i>Mean High Water Neap (MHWN)</i>	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 (shown 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).

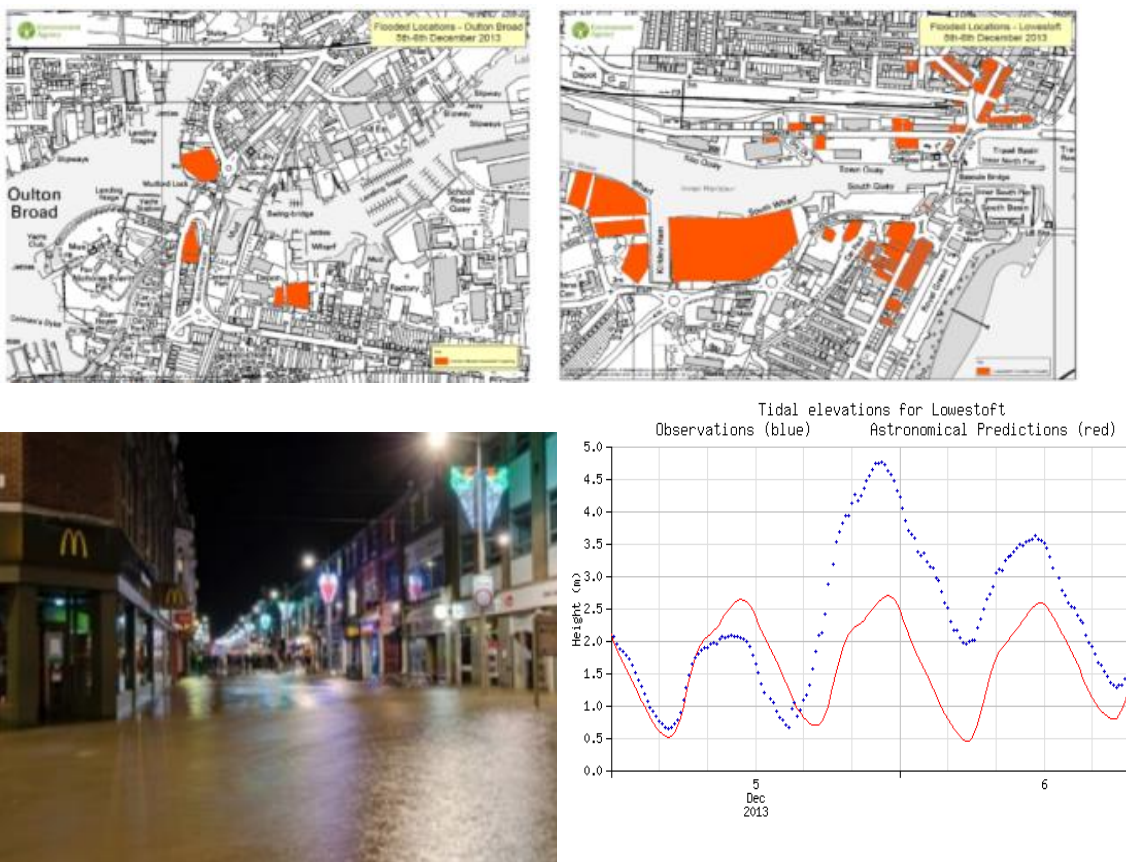
Figure 3.3 shows flooding in 2007. Water levels recorded were estimated to have a probability of occurring of 7% (i.e. a 1 in 15 year RP). The flood event caused limited flooding to the Lowestoft area but critically, highlighted the risk to flood waters outflanking the tidal defences at Mutford Lock (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, 2013 Water 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

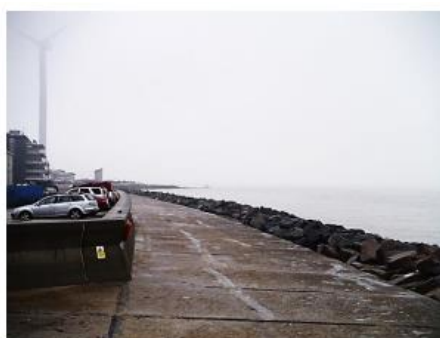
flood defences structures include concrete seawalls, sheet pile quay walls and *ad-hoc* flood walls. However, it is identified in the SFRA that there are no “formal” flood defences protecting the area, although it is noted that the extensive lengths of hard engineered riverbanks and seawalls do provide 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)

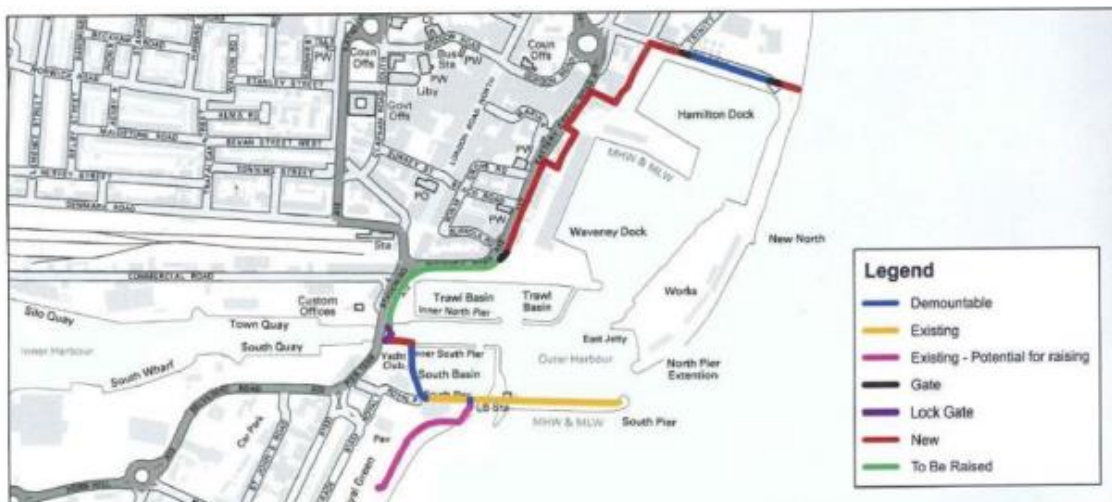


Source: Suffolk and Waveney, DC, 2008

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

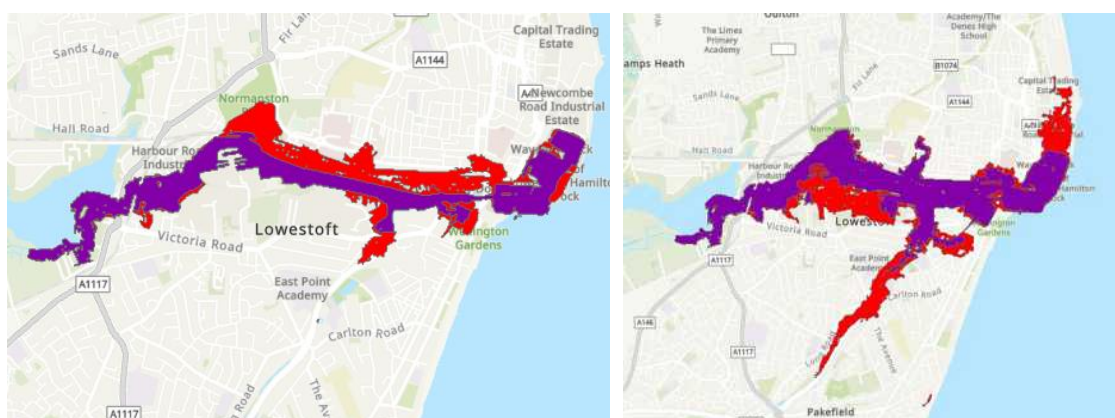
3.1.5 Lowestoft flood risk studies and flood maps

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 year 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.

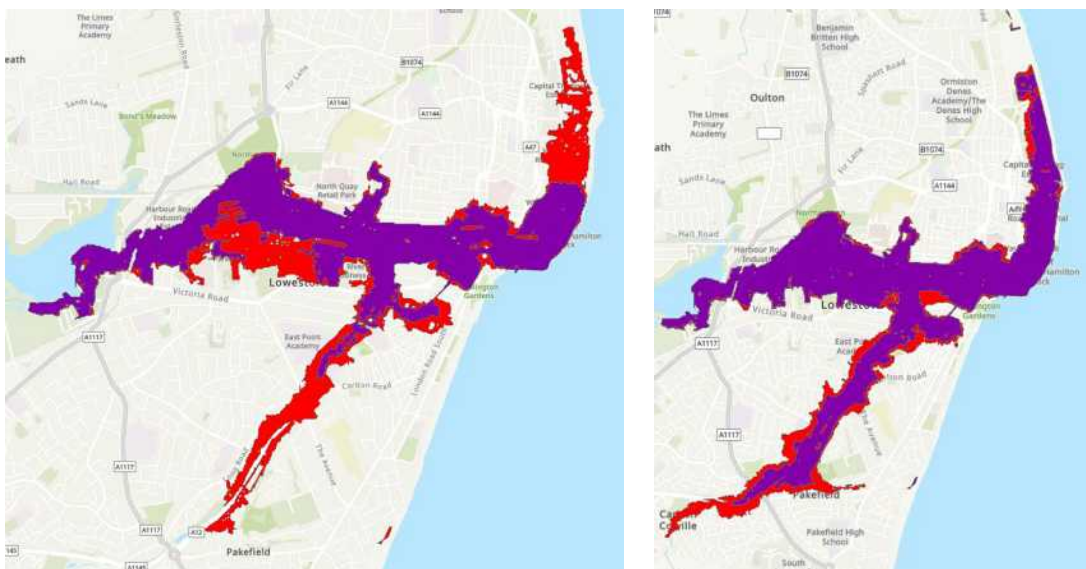
3.1.5.2 Future Flood Risk estimates

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 years⁸.

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 Plan⁹ 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.

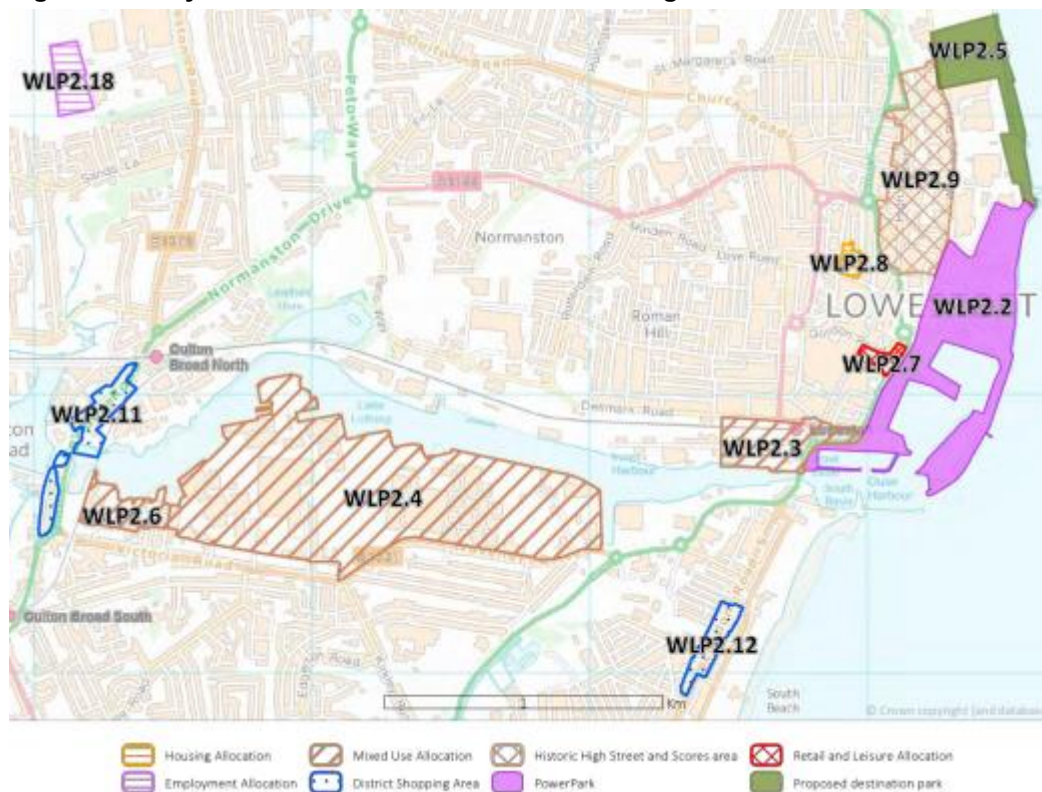
The key allocated development sites identified in the Local Plan are:

- 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

The 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 units¹⁰. 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 units¹¹ 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 scenarios¹²:

- **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 analysis¹³
 - 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 scenario¹⁴.
 - 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)

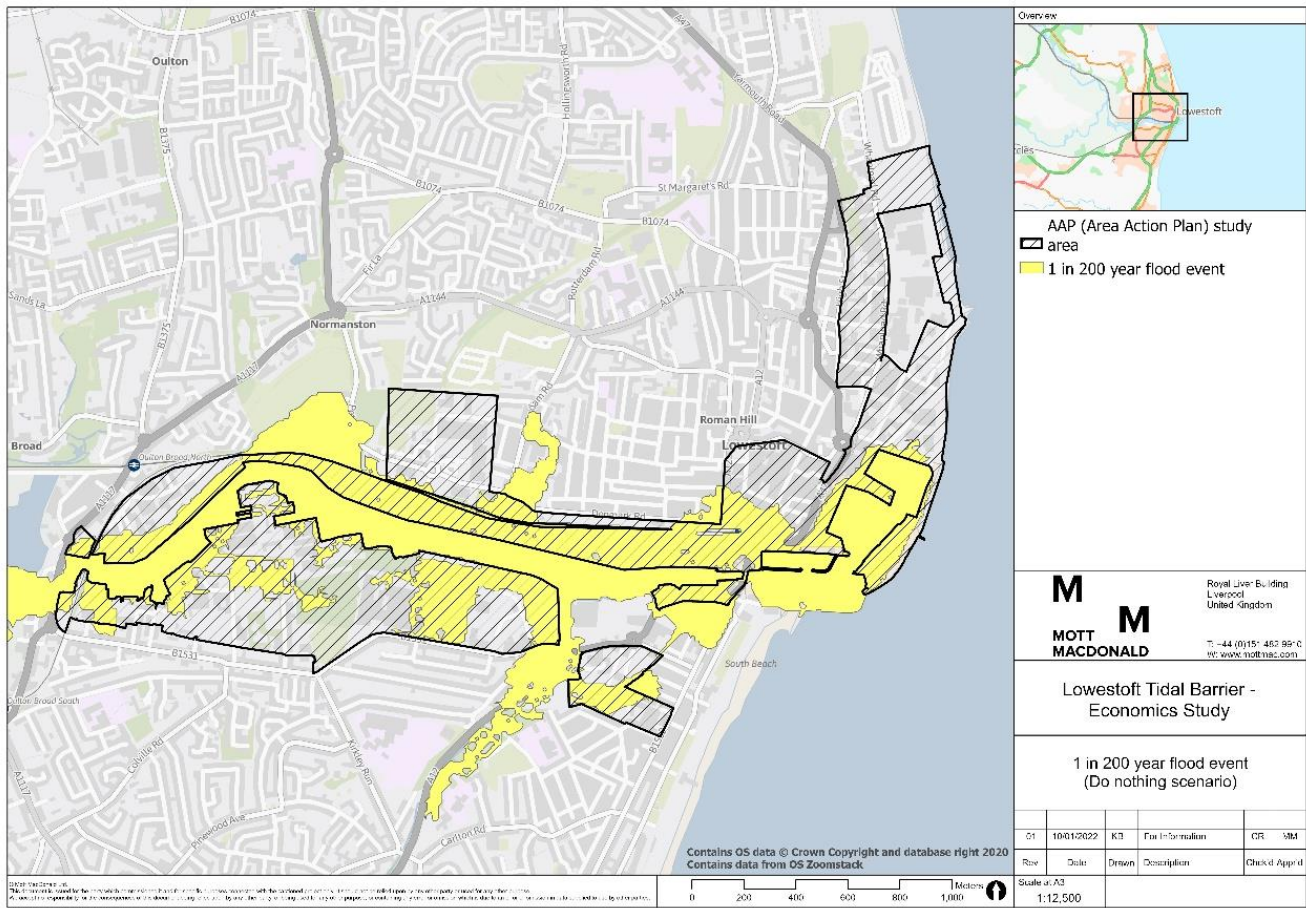
¹² As previously noted, the analysis produced here is set at the gross level. No conversion to net through allowances for deadweight, displacement and leakage is required. An average GVA per worker figure for East region has been utilised of £53,392 for all jobs.

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)

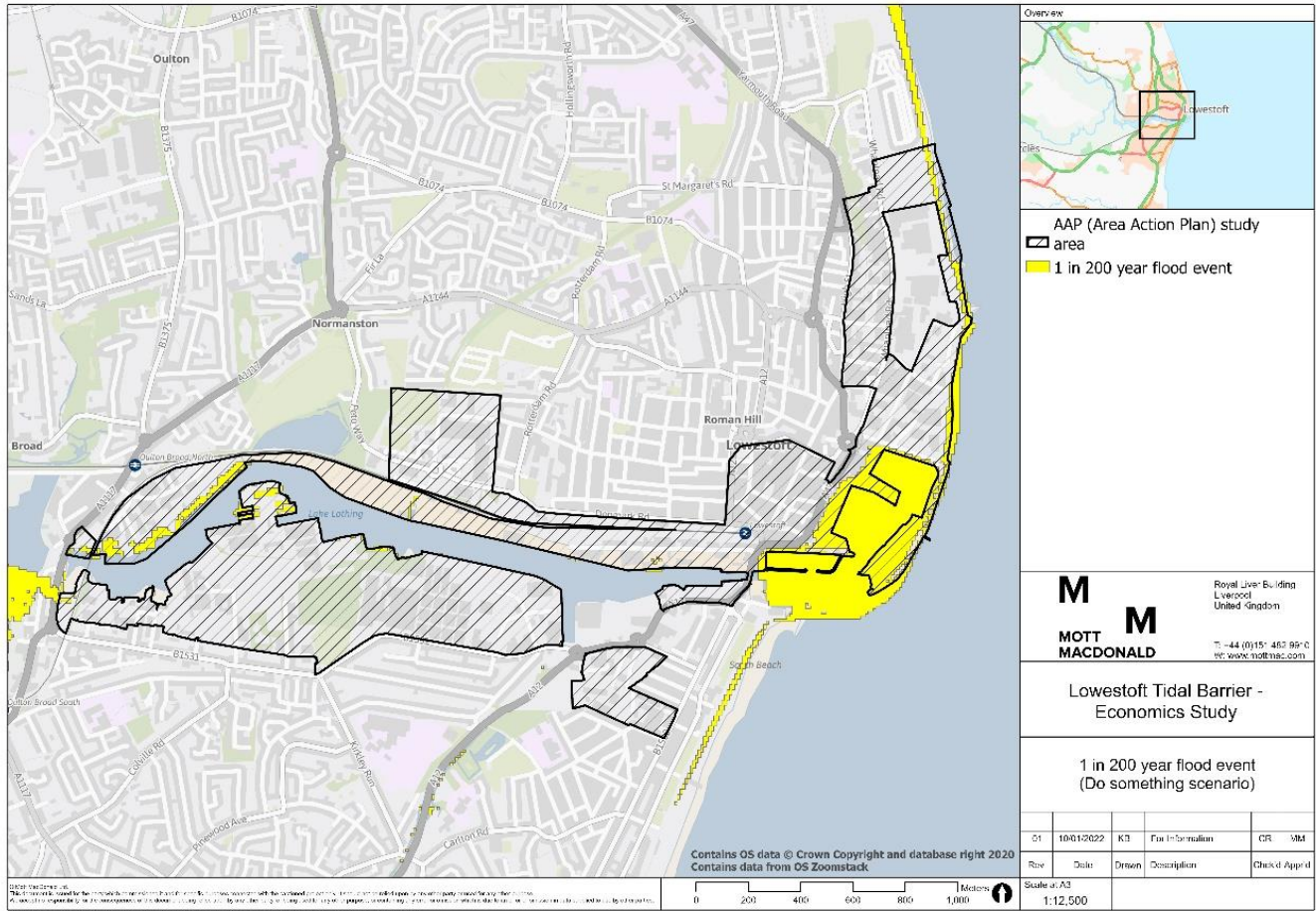
Figure 4.13: Do Nothing 1 in 200-year flood extent



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



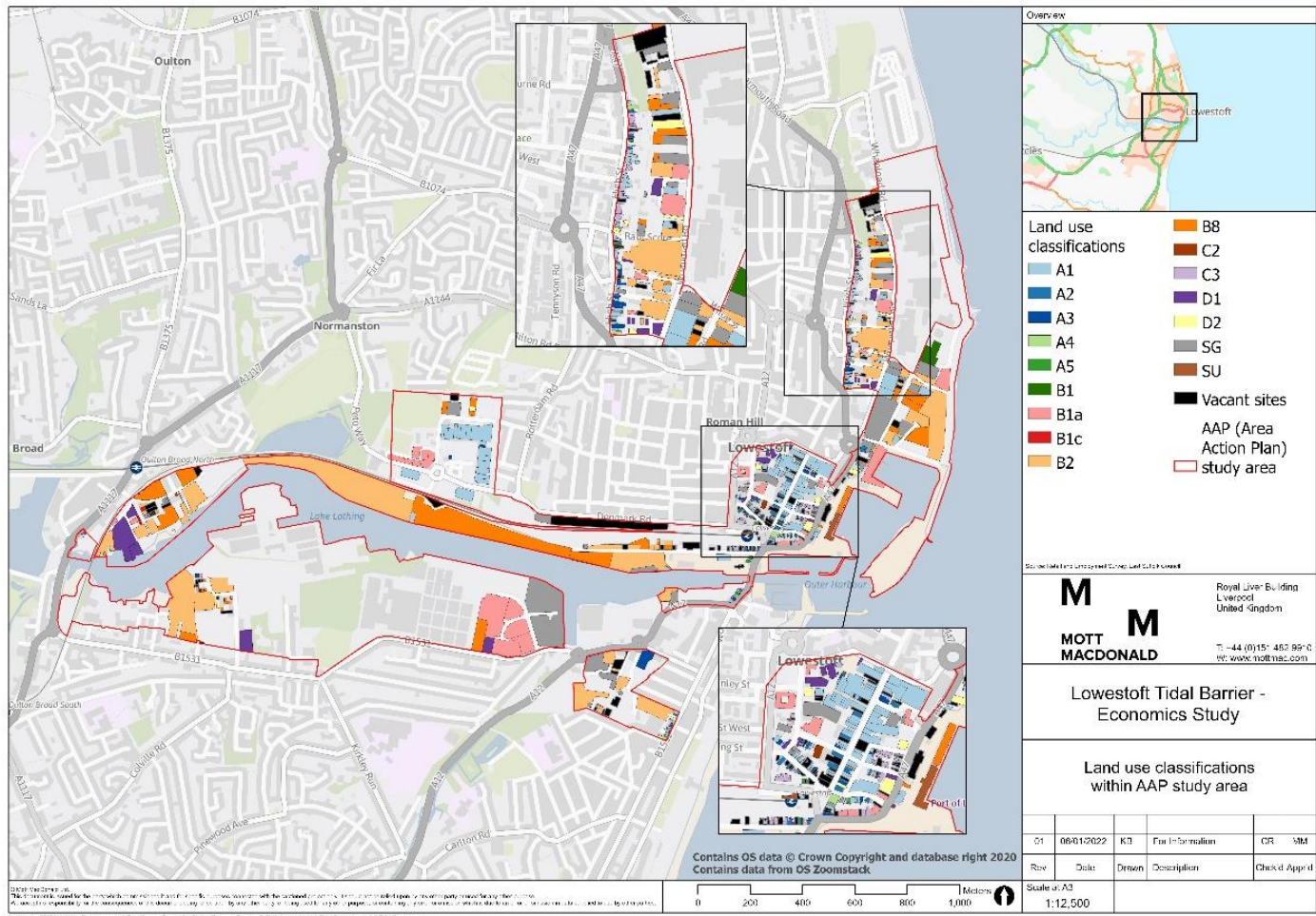
Source: Mott MacDonald

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 GVA¹⁵ 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 pa¹⁷**. In turn this supports an additional **1,900 indirect and induced jobs** that generates an additional **£101m GVA pa for the economy¹⁸**. 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 counting¹⁹. 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.

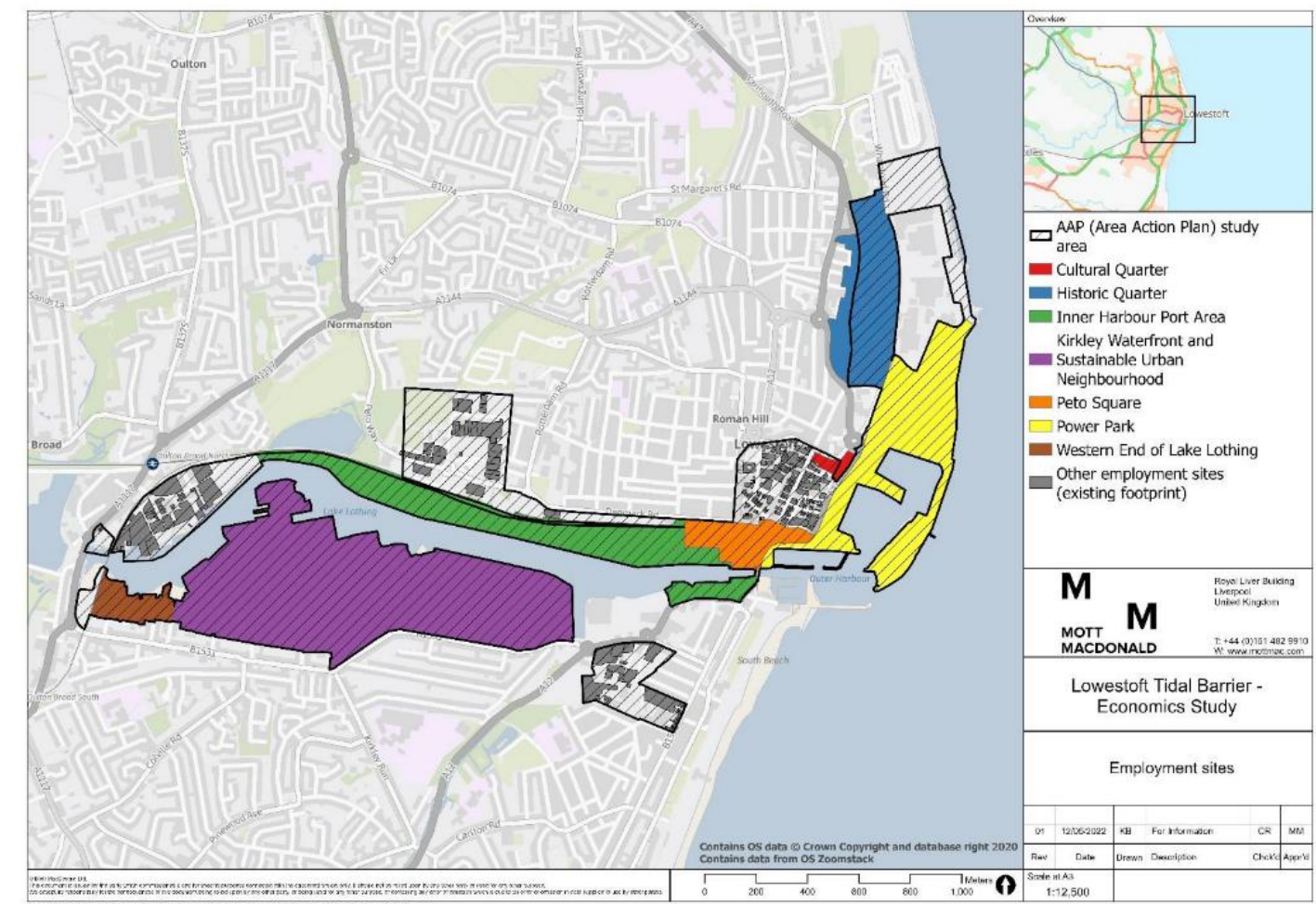
Table 4.4: Future employment site summary

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 GVA²⁰ 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.

£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 extent
- 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

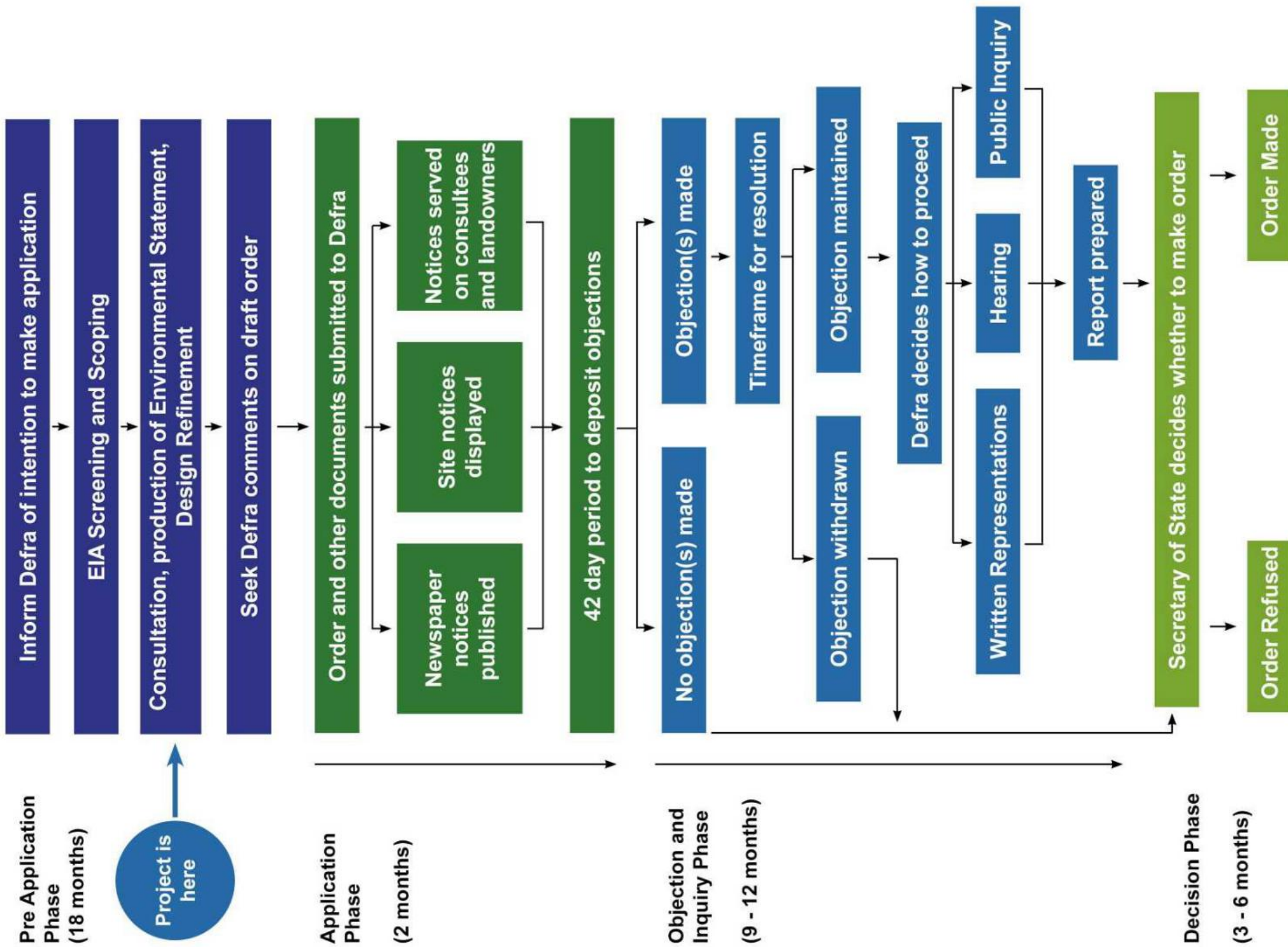
Figure 5.2: TEAM Economic Impact Assumptions

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









FULL COUNCIL

Wednesday, 15 March 2023

Subject	Code of Corporate Governance
Report by	Councillor Cook, Cabinet Member with responsibility for Resources Councillor Back, Assistant Cabinet Member for Resources
Supporting Officer	Mrs Siobhan Martin Head of Internal Audit siobhan.martin@east Suffolk.gov.uk 01394 444254

Is the report Open or Exempt?	OPEN
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Category of Exempt Information and reason why it is NOT in the public interest to disclose the exempt information.	Not applicable
Wards Affected:	All Wards

Purpose and high-level overview

Purpose of Report:

The Audit and Governance Committee reviewed the refreshed Code of Corporate Governance at its meeting of 12 September 2022, and in accordance with the Committee's terms of reference 'To review the Council's corporate governance arrangements against the good governance framework and consider annual governance reports and assurances'.

The Code of Corporate Governance follows the most recent guidance issued by CIPFA/SOLACE 2016 and entitled "Delivering Good Governance in Local Government".

The Committee received report ES/1272 of Councillor Maurice Cook, the Cabinet Member with responsibility for Resources and Councillor Edward Back, the Assistant Cabinet Member for Resources, which detailed the refreshed Code of Corporate Governance.

Minutes of the Audit and Governance Committee held on 12 September 2022:

The Head of Internal Audit summarised the report and highlighted the seven core principles of public sector governance and how they related to one another. The Head of Internal Audit noted that the format of the Code of Corporate Governance had changed to show which of the Councils documents and governance arrangements supported each principle.

The Chairman stated that this was an important document for the Council to ensure good governance and invited questions and comments.

Councillor Gooch referred to the principle concerning openness and comprehensive stakeholder engagement and asked how the Council was engaging with stakeholders who did not have access to the internet or social media. Officers confirmed that the Council did not solely rely on online engagement, and action was being taken in this area particularly with regards to cost of living projects.

Councillor Gooch asked if the connection between these principles and the Nolan Principles could be made clearer. Officers confirmed that the Nolan Principles underpinned everything in the document, and they would amend the document to make this clearer.

There being no further questions, on the proposal of Councillor Cloke and seconded by Councillor Gooch it was by a unanimous decision.

Following the Audit and Governance Committees request to reference the Seven Principles of Public Life, known as the Nolan Principles, these are now specifically referenced under Section 3, Core Principles and Good Governance, and within Principle A.

Options:

No further options have been considered.

Recommendation:

That having commented upon the refreshed Code of Corporate Governance, Full Council adopts the refreshed Code of Corporate Governance attached at Appendix A of this report.

Corporate Impact Assessment

Governance:

The Code of Corporate Governance is a key document, setting out the Council's overarching corporate governance arrangements.

ESC policies and strategies that directly apply to the proposal:

The Code of Corporate Governance sets out how all ESC policies and strategies support the Council's good governance.

Environmental:

The Code of Corporate Governance sets out how all ESC policies and strategies support the Council's good governance, including any that impact on the environment.

Equalities and Diversity:

The Code of Corporate Governance sets out how all ESC policies and strategies support the Council's good governance, including any that relate to equalities and diversity.

Financial:

The Code of Corporate Governance sets out how all ESC policies and strategies support the Council's good governance, including financial governance.

Human Resources:

The Code of Corporate Governance sets out how all ESC policies and strategies support the Council's good governance, including those relating to staff management and the HR function.

ICT:

The Code of Corporate Governance sets out how all ESC policies and strategies support the Council's good governance, including technical governance.

Legal:

The Code of Corporate Governance sets out how all ESC policies and strategies support the Council's good governance, including any that ensure legal compliance.

The Accounts and Audit Regulations 2015 require the Council prepares an Annual Governance Statement each financial year. The Code of Corporate Governance sets out the framework used to assess corporate governance arrangements within the Annual Governance Statement and is an integral part of the governance review process.

Risk:

The Code of Corporate Governance sets out how all ESC policies and strategies support the Council's good governance, including risk and opportunity management.

External Consultees:	None applicable
Internal Consultees:	Audit and Governance Committee, Senior Management Team, S151 Officer, Monitoring Officer, and Corporate Governance Group

Strategic Plan Priorities

Select the priorities of the Strategic Plan which are supported by this proposal: (Select only one primary and as many secondary as appropriate)		Primary priority	Secondary priorities
T01	Growing our Economy		
P01	Build the right environment for East Suffolk	<input type="checkbox"/>	<input type="checkbox"/>
P02	Attract and stimulate inward investment	<input type="checkbox"/>	<input type="checkbox"/>
P03	Maximise and grow the unique selling points of East Suffolk	<input type="checkbox"/>	<input type="checkbox"/>
P04	Business partnerships	<input type="checkbox"/>	<input type="checkbox"/>
P05	Support and deliver infrastructure	<input type="checkbox"/>	<input type="checkbox"/>
T02	Enabling our Communities		
P06	Community Partnerships	<input type="checkbox"/>	<input type="checkbox"/>
P07	Taking positive action on what matters most	<input type="checkbox"/>	<input type="checkbox"/>
P08	Maximising health, well-being and safety in our District	<input type="checkbox"/>	<input type="checkbox"/>
P09	Community Pride	<input type="checkbox"/>	<input type="checkbox"/>
T03	Maintaining Financial Sustainability		
P10	Organisational design and streamlining services	<input type="checkbox"/>	<input type="checkbox"/>
P11	Making best use of and investing in our assets	<input type="checkbox"/>	<input type="checkbox"/>
P12	Being commercially astute	<input type="checkbox"/>	<input type="checkbox"/>
P13	Optimising our financial investments and grant opportunities	<input type="checkbox"/>	<input type="checkbox"/>
P14	Review service delivery with partners	<input type="checkbox"/>	<input type="checkbox"/>
T04	Delivering Digital Transformation		
P15	Digital by default	<input type="checkbox"/>	<input type="checkbox"/>
P16	Lean and efficient streamlined services	<input type="checkbox"/>	<input type="checkbox"/>
P17	Effective use of data	<input type="checkbox"/>	<input type="checkbox"/>
P18	Skills and training	<input type="checkbox"/>	<input type="checkbox"/>
P19	District-wide digital infrastructure	<input type="checkbox"/>	<input type="checkbox"/>
T05	Caring for our Environment		
P20	Lead by example	<input type="checkbox"/>	<input type="checkbox"/>
P21	Minimise waste, reuse materials, increase recycling	<input type="checkbox"/>	<input type="checkbox"/>
P22	Renewable energy	<input type="checkbox"/>	<input type="checkbox"/>
P23	Protection, education and influence	<input type="checkbox"/>	<input type="checkbox"/>
XXX	Governance		
XXX	How ESC governs itself as an authority	<input checked="" type="checkbox"/>	<input type="checkbox"/>

How does this proposal support the priorities selected?

The corporate governance arrangements of the Council are integral to delivering the Council's vision and objectives. All Strategic Plan priorities are supported by this report.

Background and Justification for Recommendation

1 Background facts

1.1	Governance is about how the Council ensures that it is doing the right things, in the right way, for the right people, in a timely, inclusive, open, honest and accountable manner. It comprises the systems and processes, and cultures and values, by which such bodies are directed and controlled and through which they account to, engage with, where appropriate, lead their communities.
1.2	The Council strives to meet the highest standards of corporate governance to help ensure it meets its objectives. Members and officers are responsible for putting in place proper arrangements for the governance of the Council's affairs and the stewardship of the resources at its disposal.

2 Current position

2.1	The most recent publication providing local authorities with guidance on good governance was "Delivering Good Governance in Local Government" (CIPFA / SOLACE 2016), which built on principles previously set out in the "International Framework: Good Governance in the Public Sector" (CIPFA/IFAC 2014) publication.								
2.2	<p>The importance of local authority governance and culture has been highlighted due to a series of high-profile failings and government interventions. A series of recent reports and publications draw attention to the current governance challenges facing all local authorities:</p> <table><tr><td>2019</td><td>Local authority governance (National Audit Office)</td></tr><tr><td>2019</td><td>Local Government Governance and Accountability (Committee of Public Accounts)</td></tr><tr><td>2020</td><td>Addressing cultural and governance failings in local authorities: lessons from recent interventions (MHCLG)</td></tr><tr><td>2022</td><td>Understanding the challenge to local authority governance (CIPFA)</td></tr></table>	2019	Local authority governance (National Audit Office)	2019	Local Government Governance and Accountability (Committee of Public Accounts)	2020	Addressing cultural and governance failings in local authorities: lessons from recent interventions (MHCLG)	2022	Understanding the challenge to local authority governance (CIPFA)
2019	Local authority governance (National Audit Office)								
2019	Local Government Governance and Accountability (Committee of Public Accounts)								
2020	Addressing cultural and governance failings in local authorities: lessons from recent interventions (MHCLG)								
2022	Understanding the challenge to local authority governance (CIPFA)								
2.3	The Code of Corporate Governance sets out how East Suffolk Council applies good governance principles and was last formally refreshed in December 2020.								

3 How to address current situation

3.1	In order to ensure the Annual Governance Statement's annual review of governance arrangements is effective, the Council needs to ensure its governance framework as set out in the refreshed Code of Corporate Governance is up to date and fit for purpose.
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4 Reasons for recommendation	
4.1	By reviewing and considering the revised Code in accordance with best practice the Audit and Governance Committee fulfilled its responsibility within its terms of reference.
4.2	Full Council must receive the Code of Corporate Governance following the Audit and Governance Committee's review and consider the Committee's recommendations in accordance with the Councils Constitution.

Appendices

Appendices:	
Appendix A	Code of Corporate Governance – September 2022

East Suffolk Council

Code of Corporate Governance

September 2022

1. Introduction

This document sets out how East Suffolk Council intends to apply the principles of corporate governance in the way it operates and conducts its business. It has been developed in accordance with the principles outlined in the framework and guidance notes by the Chartered Institute of Public Finance and Accountancy (CIPFA) and the Society of Local Authority Chief Executives (SOLACE) “Delivering Good Governance in Local Government” (2016).

In order to demonstrate its approach to good governance, this Council maintains an up to date local Code of Corporate Governance (“the Code”) and prepares an Annual Governance Statement. These two documents together set out respectively the arrangements for ensuring ongoing effectiveness and publicly reporting on compliance with the Council’s governance framework.

2. What is Governance?

The CIPFA / IFAC guidance “International Framework: Good Governance in the Public Sector” (2014) defines governance as follows:

Governance comprises the arrangements put in place to ensure that the intended outcomes for stakeholders are defined and achieved.

Governance is about how the Council ensures that it is doing the right things, in the right way, for the right people, in a timely, inclusive, open, honest and accountable manner. It comprises the systems and processes, cultures and values by which the organisation is directed and controlled and through which it is accountable to, engages with, where appropriate, and leads its communities.

Good governance enables the Council to define and pursue its vision more effectively. It leads to improvements in management, performance, stewardship of public money and public engagement and outcomes for individuals and the community. It ensures that appropriate mechanisms for control are in place and that risks and opportunities are managed effectively.

3. Core Principles of Good Governance

East Suffolk Council recognises and adheres to the following core principles taken from the “International Framework: Good Governance in the Public Sector” (CIPFA/IFAC 2014) and the “Delivering Good Governance in Local Government” (CIPFA/SOLACE 2016), which encapsulate the Seven Principles of Public Life, known as the Nolan Principles.

Overarching principles for acting in the public interest:

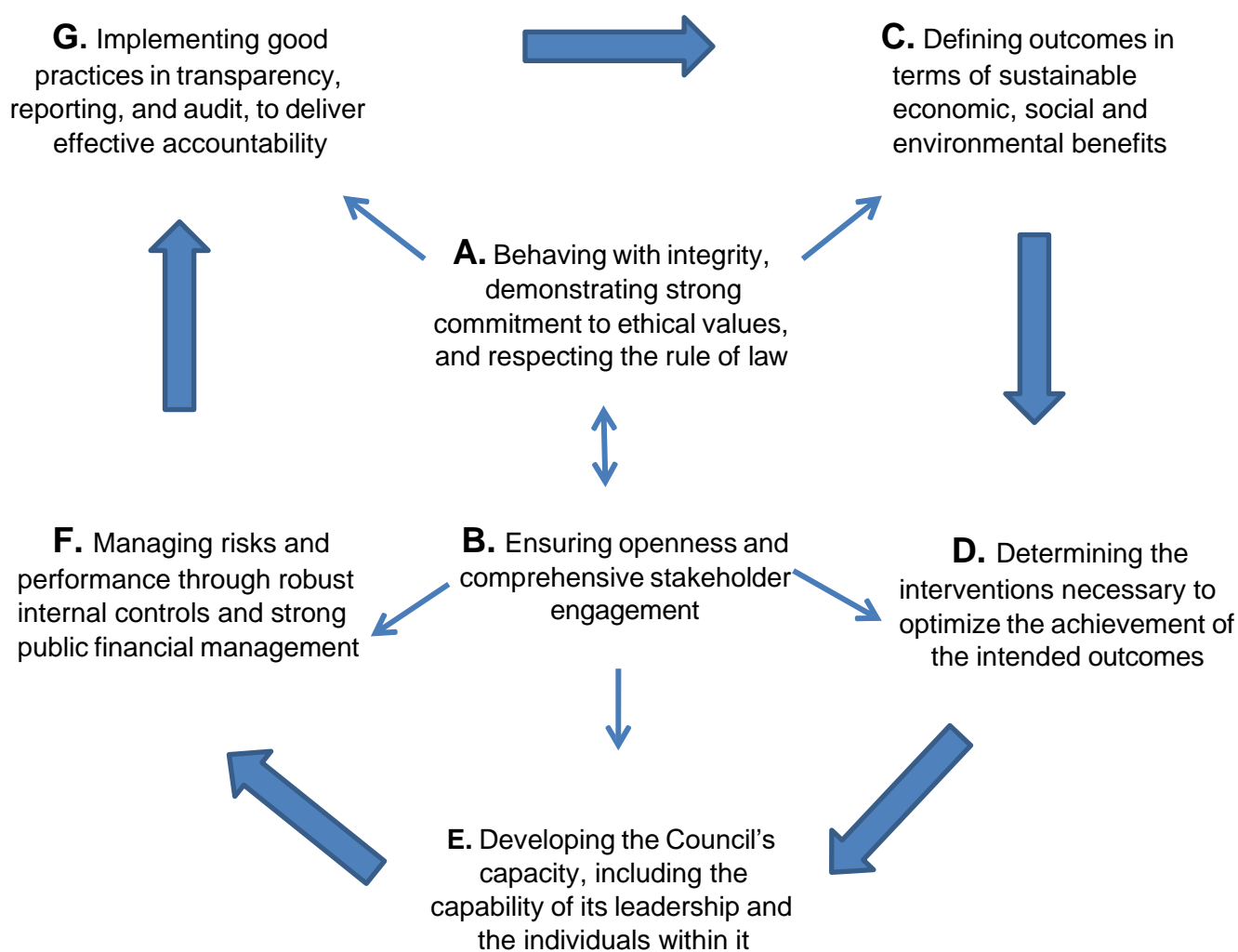
- A. Behaving with integrity, demonstrating strong commitment to ethical values, and respecting rule of law.
- B. Ensuring openness and comprehensive stakeholder engagement.

Additional principles for good public sector governance:

- C. Defining outcomes in terms of sustainable economic, social, and environmental benefits.
- D. Determining the interventions necessary to optimise the achievement of the intended outcomes.
- E. Developing the Council’s capacity, including the capability of its leadership and the individuals within it.

- F. Managing risks and performance through robust internal control and strong public financial management.
- G. Implementing good practices in transparency reporting, and audit to deliver effective accountability.

Principles A and B underpin the governance framework and implementation of principles C to G. The diagram below shows how the principles relate to each other.



4. Applying the Principles of Good Governance

Each of the seven core principles above has a number of sub principles, which in turn, translate into a range of specific policies, behaviours and actions that apply across the various aspects of the Council's business that demonstrate good governance. The tables below (extracted from the CIPFA/SOLACE framework) show how each of these principles should be applied.

Principle A: Behaving with integrity, demonstrating strong commitment to ethical values, and respecting the rule of law

Sub Principles	Governance arrangements in place at East Suffolk Council (not an exhaustive list)
<p>Behaving with integrity</p> <p>Ensuring members and officers behave with integrity and lead a culture where acting in the public interest is visibly and consistently demonstrated thereby protecting the reputation of the organisation.</p> <p>Ensuring members take the lead in establishing specific standard operating principles or values for the organisation and its staff and that they are communicated and understood. These should build on the Seven Principles of Public Life (the Nolan Principles).</p> <p>Leading by example and using the above standard operating principles or values as a framework for decision making and other actions.</p> <p>Demonstrating, communicating and embedding the standard operating principles or values through appropriate policies and processes which are reviewed on a regular basis to ensure that effectively.</p>	<p>Anti-Bribery Policy and Procedure Anti-Fraud and Corruption Strategy Anti-Money Laundering Policy Assurance Statements Audit & Governance Committee Code of Conduct for employees Constitution Contract Procedure Rules Corporate induction process Customer Feedback Policy Financial Management Financial Procedure Rules Head of Paid Service defined responsibilities Internal Audit Charter Member Development Strategy Our Behaviours Our Values People Strategy Professional memberships Register of Councillors' interest Registers of staff interests, gifts and hospitality Scrutiny Committee Staff Surveys Suffolk Code of conduct for members Whistleblowing Policy</p>
<p>Demonstrating strong commitment to ethical values.</p> <p>Seeking to establish, monitor and maintain the organisation's ethical standards and performance.</p> <p>Underpinning personal behaviour with ethical values and ensuring they permeate all aspects of the organisation's culture and operation.</p> <p>Developing and maintaining robust policies and procedures which place emphasis on agreed ethical values.</p> <p>Ensuring that external providers of services on behalf of the organisation are required to act with integrity and in compliance with ethical standards expected by the organisation.</p>	<p>Code of Conduct for employees Contract Procedure Rules Corporate induction process Financial Procedure Rules Freedom of Information processes Legal services and advice Our Behaviours Our Values Publication Scheme Recruitment Policy Register of Councillors' interest Registers of staff interests, gifts and hospitality Standard Terms and Conditions for Supplying to the Council Suffolk Code of conduct for members Supplier contracts and Contract Management procedures</p>

<p>Respecting the rule of law.</p> <p>Ensuring members and staff demonstrate a strong commitment to the rule of the law as well as adhering to relevant laws and regulations.</p> <p>Creating the conditions to ensure that the statutory officers, other key post holders, and members are able to fulfil their responsibilities in accordance with legislative and regulatory requirements.</p> <p>Striving to optimise the use of the full powers available for the benefit of citizens, communities and other stakeholders.</p> <p>Dealing with breaches of legal and regulatory provisions effectively.</p> <p>Ensuring corruption and misuse of power are dealt with effectively.</p>	<p>Anti-Bribery Policy and Procedure Anti-Fraud and Corruption Strategy Anti-Money Laundering Policy Audit & Governance Committee terms of reference Code of Conduct for employees Compliance and Enforcement Policy Constitution Customer Feedback Policy Data Protection Policy Designated Officers Group Legal services and advice Local Planning Enforcement Plan Monitoring Officer defined responsibilities Professional memberships Protocol on Member/Officer relations Recruitment Policy Scrutiny Committee Staff Job descriptions Suffolk Code of conduct for members Whistleblowing Policy</p>
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Principle B: Ensuring openness and comprehensive stakeholder engagement

Sub Principles	Governance arrangements in place at East Suffolk Council
<p>Openness</p> <p>Ensuring an open culture through demonstrating, documenting and communicating the organisation's commitment to openness.</p> <p>Making decisions that are open about actions, plans, resource use, forecasts, outputs and outcomes. The presumption is for openness. If this is not the case, a justification for the reasoning for keeping a decision confidential should be provided.</p> <p>Providing clear reasoning and evidence for decisions in both public records and explanations to stakeholders and being explicit about criteria, rationale and considerations used. In due course, ensuring that the impact and consequences of those decisions are clear.</p> <p>Using formal and informal consultation and engagement to determine the most appropriate and effective interventions/course of action.</p>	<p>Committee meetings open to the public</p> <p>Committee reports, agendas and minutes</p> <p>Constitution</p> <p>Consultation exercises</p> <p>Decision Notices</p> <p>External Audit Annual letters</p> <p>Freedom of Information processes</p> <p>Publication Scheme</p>
<p>Engaging comprehensively with institutional stakeholders</p> <p>Effectively engaging with institutional stakeholders to ensure that the purpose, objectives and intended outcomes for each stakeholder relationship are clear so that outcomes are achieved successfully and sustainably.</p> <p>Developing formal and informal partnerships to allow for resources to be used more efficiently and outcomes achieved more effectively.</p> <p>Ensuring that partnerships are based on trust, a shared commitment to change, a culture that promotes and accepts challenge among partners and that the added value of partnership working is explicit.</p>	<p>Our Behaviours</p> <p>Our Values</p> <p>Partnership agreements and collaborative working arrangements</p> <p>People Strategy</p> <p>Planning consultations</p> <p>Supplier contracts and Contract Management procedures</p>

Principle B: Ensuring openness and comprehensive stakeholder engagement

Sub Principles	Governance arrangements in place at East Suffolk Council
<p>Engaging with individual citizens and service users effectively.</p> <p>Establishing a clear policy on the type of issues that the organisation will meaningfully consult with or involve communities, individual citizens, service users and other stakeholders to ensure that service (or other) provision is contributing towards the achievement of intended outcomes.</p> <p>Ensuring that communication methods are effective and that members and officers are clear about their roles with regard to community engagement.</p> <p>Encouraging, collecting and evaluating the views and experiences of communities, citizens, service users and organisations of different backgrounds including reference to future needs.</p> <p>Implementing effective feedback mechanisms in order to demonstrate how views have been taken into account.</p> <p>Balancing feedback from more active stakeholder groups with other stakeholder groups to ensure inclusivity.</p> <p>Taking account of the impact of decisions on future generations of tax payers and service users.</p>	<p>Committee meetings open to the public</p> <p>Committee reports, agendas and minutes</p> <p>Consultation exercises</p> <p>Council newsletter / magazine</p> <p>Council website and social media</p> <p>Customer Feedback Policy</p> <p>Developers Forum</p> <p>Enabling Communities Strategy</p> <p>Freedom of Information processes</p> <p>Local Plan</p> <p>Neighbourhood Plans</p> <p>Publication Scheme</p> <p>Social Media Policy</p>

Principle C: Defining outcomes in terms of sustainable economic, social, and environmental benefits

Sub Principles	Governance arrangements in place at East Suffolk Council
<p>Defining outcomes</p> <p>Having a clear vision, which is an agreed formal statement of the organisation's purpose and intended outcomes containing appropriate performance indicators, which provide the basis for the organisation's overall strategy, planning and other decisions.</p> <p>Specifying the intended impact on, or changes for, stakeholders including citizens and service users. It could be immediately or over the course of a year or longer.</p> <p>Delivering defined outcomes on a sustainable basis within the resources that will be available.</p> <p>Identifying and managing risks to the achievement of outcomes.</p> <p>Managing service users' expectations effectively with regard to determining priorities and making the best use of the resources available.</p>	<p>Committee reports, agendas and minutes</p> <p>Corporate performance management framework</p> <p>Corporate Risk Register</p> <p>Medium Term Financial Strategy</p> <p>Performance Reports</p> <p>Risk and Opportunities Management Strategy</p> <p>Risk management process</p> <p>Strategic Plan (2020-2024)</p>
<p>Sustainable economic, social and environmental benefits</p> <p>Considering and balancing the combined economic, social and environmental impact of policies and plans when taking decision about service provision.</p> <p>Taking a longer-term view with regard to decision making, taking account of risk and acting transparently where there are potential conflicts between the organisation's intended outcomes and short-term factors such as the political cycle or financial constraints.</p> <p>Determining the wider public interest associated with balancing conflicting interests between achieving the various economic, social and environmental benefits, through consultation where possible, in order to ensure appropriate trade-offs.</p> <p>Ensuring fair access to services.</p>	<p>Asset Management Strategy 2019-24</p> <p>Budget process</p> <p>Business case appraisal process</p> <p>Capital Programme</p> <p>Capital Strategy</p> <p>Committee reports, agendas and minutes</p> <p>Contaminated Land Strategy</p> <p>Corporate Risk Register</p> <p>Digital Strategy</p> <p>Economic Growth Plan 2018-2023</p> <p>Efficiency Plan</p> <p>Enabling Communities Strategy</p> <p>Environmental Policy</p> <p>Equality & Diversity Policy</p> <p>Financial Procedure Rules</p> <p>Housing Asset Management Strategy</p> <p>Housing Development Strategy</p> <p>Housing Strategy 2017-2023</p> <p>Local Plan</p> <p>Medium Term Financial Strategy</p> <p>Modern Slavery and Human Trafficking Statement</p> <p>Private Sector Housing Strategy</p> <p>Risk and Opportunities Management Strategy</p> <p>Risk management process</p> <p>Safeguarding Policy</p>

Principle D: Determining the interventions necessary to optimise the achievement of the intended outcomes

Sub Principles	Governance arrangements in place at East Suffolk Council
<p>Determining interventions</p> <p>Ensuring decision makers receive objective and rigorous analysis of a variety of options indicating how intended outcomes would be achieved and associated risks. Therefore, ensuring best value is achieved however services are provided.</p> <p>Considering feedback from citizens and service users when making decisions about service improvements or where services are no longer required in order to prioritise competing demands within limited resources available including people, skills, land and assets and bearing in mind future impacts.</p>	<p>Committee reports, agendas and minutes</p> <p>Constitution</p> <p>Customer Feedback Policy</p> <p>Our Values</p> <p>Procurement Strategy</p> <p>Risk and Opportunities Management Strategy</p> <p>Risk management process</p> <p>Staff Job descriptions</p>
<p>Planning interventions</p> <p>Establishing and implementing robust planning and control cycles that cover strategic and operational plans, priorities and targets.</p> <p>Engaging with internal and external stakeholders in determining how services and other courses of action should be planned and delivered.</p> <p>Considering and monitoring risks facing each partner when working collaboratively, including shared risks.</p> <p>Ensuring arrangements are flexible and agile so that the mechanisms for delivering goods and services can be adapted to changing circumstances.</p> <p>Establishing appropriate key performance indicators (KPIs) as part of the planning process in order to identify how the performance of services and projects is to be measured.</p> <p>Ensuring capacity exists to generate the information required to review service quality regularly.</p> <p>Preparing budgets in accordance with objectives, strategies and the medium-term financial plan.</p> <p>Informing medium and long term resource planning by drawing up realistic estimates of revenue and capital expenditure aimed at developing a sustainable funding strategy.</p>	<p>Budget process</p> <p>Capital Programme</p> <p>Capital Strategy</p> <p>Committee reports, agendas and minutes</p> <p>Constitution</p> <p>Corporate performance management framework</p> <p>Customer Feedback Policy</p> <p>Joint Emergency Response Plan</p> <p>Medium Term Financial Strategy</p> <p>Partnership agreements and collaborative working arrangements</p> <p>Performance Reports</p> <p>Procurement Forward Plan</p> <p>Procurement Strategy</p> <p>Risk and Opportunities Management Strategy</p> <p>Risk management process</p> <p>Strategic Plan (2020-2024)</p> <p>Supplier contracts and Contract Management procedures</p> <p>Workforce development processes</p>

Principle D: Determining the interventions necessary to optimise the achievement of the intended outcomes

Sub Principles	Governance arrangements in place at East Suffolk Council
<p>Optimising achievement of intended outcomes</p> <p>Ensuring the medium term financial strategy integrates and balances service priorities, affordability and other resource constraints.</p> <p>Ensuring the budgeting process is all-inclusive, taking into account the full cost of operations over the medium and longer term.</p> <p>Ensuring the medium term financial strategy sets the context for ongoing decision on significant delivery issues or responses to changes in the external environment that may arise during the budgetary period in order for outcomes to be achieved while optimising resource usage.</p> <p>Ensuring the achievement of “social value” through service planning and commissioning.</p>	<p>Budget process</p> <p>External Audit Annual Letters</p> <p>Medium Term Financial Strategy</p> <p>Procurement Strategy</p> <p>Risk and Opportunities Management Strategy</p> <p>Risk management process</p> <p>Social Value Policy</p>

Principle E: Developing the entity's capacity, including the capability of its leadership and the individuals within it	
Sub Principles	Governance arrangements in place at East Suffolk Council
<p>Developing the entity's capacity</p> <p>Reviewing operations, performance and use of assets on a regular basis to ensure their continuing effectiveness.</p> <p>Improving resource use through appropriate application of techniques such as benchmarking and other options in order to determine how resources are allocated so that defined outcomes are achieved effectively and efficiently.</p> <p>Recognising the benefits of partnerships and collaborative working where added value can be achieved.</p> <p>Developing and maintaining an effective workforce plan to enhance the strategic allocation of resources.</p>	<p>Asset Management Strategy 2019-24</p> <p>Assurance Statements</p> <p>Corporate performance management framework</p> <p>Partnership agreements and collaborative working arrangements</p> <p>Performance Reports</p> <p>Supplier contracts and Contract Management procedures</p> <p>Workforce development processes</p>
<p>Developing the capability of the entity's leadership and other individuals.</p> <p>Developing protocols to ensure that elected and appointed leaders negotiate with each other regarding their respective roles early on in the relationship and that a shared understanding of roles and objectives is maintained.</p> <p>Publishing a statement that specifies the types of decisions that are delegated and those reserved for the collective decision making of the governing body.</p> <p>Ensuring the leader and the chief executive have clearly defined and distinctive leadership roles within a structure whereby the chief executive leads in implementing strategy and managing the delivery of services and other outputs set by members and each provides a check and a balance for each other's authority.</p> <p>Developing the capabilities of members and senior management to achieve effective leadership and to enable the organisation to respond successfully to changing legal and policy demands as well as economic, political and environmental changes and risk by:-</p> <ul style="list-style-type: none"> - Ensuring members and staff have access to appropriate induction tailored to their role and that ongoing training and development matching individual and organisational requirements is available and encouraged. - Ensuring members and offices have the appropriate skills, knowledge resources and support to fulfil their roles and responsibilities and ensuring that they are able to update their knowledge on a continuing basis. - Ensuring personal, organisational and system-wide development through shared learning, including lessons learnt from governance weaknesses both internal and external. 	<p>Assurance Statements</p> <p>Code of Conduct for employees</p> <p>Committee reports, agendas and minutes</p> <p>Constitution</p> <ul style="list-style-type: none"> - Part 2: Functions and responsibilities (including Scheme of Delegation) - Part 2: Terms of reference for committees <p>Corporate induction process</p> <p>Customer Feedback Policy</p> <p>Decision Notices</p> <p>Designated Officers Group</p> <p>External Peer and Specialist reviews</p> <p>H&S: internal policies</p> <p>Health and Safety Officer defined responsibilities</p> <p>Health and Safety Policy</p> <p>Member training and development</p> <p>Performance Management (business) framework</p> <p>Staff employment policies</p> <p>Staff Job descriptions</p> <p>Staff performance (My Conversation)</p> <p>Suffolk Code of conduct for members</p> <p>Workforce development processes</p>

<p>Ensuring that there are structures in place to encourage public participation.</p> <p>Taking steps to consider the leadership's own effectiveness and ensuring leaders are open to constructive feedback from peer review and inspections.</p> <p>Holding staff to account through regular performance reviews which take account of training or development needs.</p> <p>Ensuring arrangements are in place to maintain the health and wellbeing of the workforce and support individuals in maintaining their own physical and mental wellbeing.</p>	
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Principle F: Managing risks and performance through robust internal control and strong public financial management	
Sub Principles	Governance arrangements in place at East Suffolk Council
<p>Managing Risk</p> <p>Recognising that risk management is an integral part of all activities and must be considered in all aspects of decision making.</p> <p>Implementing robust and integrated risk management arrangements and ensuring that they are working effectively.</p> <p>Ensuring that responsibilities for managing individual risks are clearly allocated.</p>	<p>Audit & Governance Committee terms of reference</p> <p>Committee reports, agendas and minutes</p> <p>Corporate Governance Group</p> <p>Corporate Risk Register</p> <p>Internal Audit Charter</p> <p>Risk and Opportunities Management Strategy</p> <p>Risk management process</p>
<p>Managing performance</p> <p>Monitoring service delivery effectively including planning, specification, execution and independent post implementation review.</p> <p>Making decisions based on relevant, clear objective analysis and advice pointing out the implications and risks in inherent in the organisation's financial, social and environmental position and outlook.</p> <p>Encouraging effective and constructive challenge and debate on policies and objectives to support balanced and effective decision making.</p> <p>Providing members and senior management with regular reports on service delivery plans on progress towards outcome achievement.</p> <p>Ensuring there is consistency between specification stages (such as budgets) and post implementation reporting (e.g., financial statements).</p>	<p>Committee reports, agendas and minutes</p> <p>Corporate Management Team</p> <p>Corporate performance management framework</p> <p>Decision Notices</p> <p>Efficiency Plan</p> <p>External Audit Annual letters</p> <p>Medium Term Financial Strategy</p> <p>Performance Reports</p> <p>Scrutiny Committee terms of reference</p> <p>Statement of Accounts</p> <p>Strategic Plan (2020-2024)</p>

<p>Robust internal control</p> <p>Aligning the risk management strategy and policies on internal control with achieving objectives.</p> <p>Evaluating and monitoring risk management and internal control on a regular basis.</p> <p>Ensuring effective counter fraud and anti-corruption arrangements are in place.</p> <p>Ensuring additional assurance on the overall adequacy and effectiveness of the framework of governance, risk management and control is provided by the internal auditor.</p> <p>Ensuring an audit committee or equivalent group/function, which is independent of the executive and accountable to the governing body:</p> <ul style="list-style-type: none"> - Provides a further source of effective assurance regarding arrangements for managing risk and maintaining an effective control environment - That its recommendations are listened to and acted upon. 	<p>Annual Audit Opinion</p> <p>Anti-Bribery Policy and Procedure</p> <p>Anti-Fraud and Corruption Strategy</p> <p>Anti-Money Laundering Policy</p> <p>Audit & Governance Committee terms of reference</p> <p>Constitution</p> <p>Corporate Risk Register</p> <p>Internal Audit Charter</p> <p>Risk and Opportunities Management Strategy</p> <p>Risk management process</p> <p>Risk toolkit</p> <p>Whistleblowing Policy</p>
<p>Managing data</p> <p>Ensuring effective arrangements are in place for the safe collection, storage, use and sharing of data, including processes to safeguard personal data.</p> <p>Ensuring effective arrangements are in place and operating effectively, when sharing data with other bodies.</p> <p>Reviewing and auditing regularly the quality and accuracy of data used in decision making and performance monitoring.</p>	<p>Data Protection Officer defined responsibilities</p> <p>Data Protection Policy</p> <p>Data Quality and Management Policy</p> <p>Digital Strategy</p> <p>Freedom of Information</p> <p>ICT Acceptable Use Policy</p> <p>ICT Security Policy</p> <p>Information and Records Management Policy</p> <p>Internal Audit Charter</p> <p>Legal services and advice</p>
<p>Strong public financial management</p> <p>Ensuring financial management supports both long term achievement of outcomes and short-term financial and operational performance.</p> <p>Ensuring well-developed financial management is integrated at all levels of planning and control, including management of financial risks and controls</p>	<p>Budget process</p> <p>Capital Programme</p> <p>Capital Strategy</p> <p>Medium Term Financial Strategy</p> <p>S151 Officer (Chief Finance Officer) defined responsibilities</p> <p>Treasury Management Strategy</p>

Principle G: Implementing good practices in transparency, reporting, and audit to deliver effective accountability	
Sub Principles	Governance arrangements in place at East Suffolk Council
<p>Implementing good practice in transparency</p> <p>Writing and communicating reports for the public and other stakeholders in a fair, balanced and understandable style appropriate to the intended audience and ensuring that they are easy to access and interrogate.</p> <p>Striking a balance between providing the right amounts of information to satisfy transparency demands and enhance public scrutiny while not being too onerous to provide and for users to understand.</p>	<p>Communications Team defined responsibilities Officer guidance for completion of report template Publication Scheme Style Guide</p>
<p>Implementing good practices in reporting</p> <p>Reporting at least annually on performance, value for money and stewardship of resources to stakeholders in a timely and understandable way.</p> <p>Ensuring members and senior management own the results reported.</p> <p>Ensuring robust arrangements for assessing the extent to which the principles contained in the Framework have been applied and publishing the results on this assessment, including an action plan for improvement and evidence to demonstrate good governance (the annual governance statement).</p> <p>Ensuring that the Framework is applied to jointly managed or shared service organisations as appropriate.</p> <p>Ensuring the performance information that accompanies the financial statements is prepared on a consistent and timely basis and the statements allow for comparison with other, similar organisations.</p>	<p>Annual Governance Statement Cabinet terms of reference Partnership agreements and collaborative working arrangements Statement of Accounts</p>

<p>Assurance and effective accountability</p> <p>Ensuring that recommendations for corrective action made by external audit are acted upon.</p> <p>Ensuring an effective internal audit service with direct access to members is in place, providing assurance with regard to governance arrangements and that recommendations are acted upon.</p> <p>Welcoming peer challenge, reviews and inspections from regulatory bodies and implementing recommendations.</p> <p>Gaining assurance on risks associated with delivering services through third parties and that this is evidenced in the annual governance statement.</p> <p>Ensuring that when working in partnership, arrangements for accountability are clear and the need for wider public accountability has been recognised and met.</p>	<p>Assurance Statements</p> <p>Audit & Governance Committee terms of reference</p> <p>Corporate Governance Group</p> <p>Corporate Risk Register</p> <p>External Audit Annual letters</p> <p>External Peer and Specialist reviews</p> <p>Internal Audit Charter</p> <p>Partnership agreements and collaborative working arrangements</p> <p>Risk and Opportunities Management Strategy</p> <p>Risk management process</p> <p>S151 Officer (Chief Finance Officer) defined responsibilities</p> <p>Supplier contracts and Contract Management procedures</p>
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5. Ongoing effectiveness and Governance Reporting

Good governance is an ongoing process: integral to demonstrating the Council's commitment to achieving good governance a continuing cycle of improvement is reported publicly via the Annual Governance Statement.

The Annual Governance Statement is a high-level strategic document that sets out:

- how the effectiveness of governance arrangements has been monitored and evaluated
- how planned outcomes are being achieved
- specific challenges and issues
- future plans for improvements and changes

The Annual Governance Statement is reported publicly via the Committee system and also published on the Council's website.



FULL COUNCIL

Wednesday, 15 March 2023

Subject	Scrutiny Committee Annual Report 2022/23
Report by	Councillor Stuart Bird Chairman of the Scrutiny Committee
Supporting Officer	Sarah Davis Democratic Services Officer Sarah.davis@eastsuffolk.gov.uk 01502 523521

Is the report Open or Exempt?	OPEN
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Category of Exempt Information and reason why it is NOT in the public interest to disclose the exempt information.	Not applicable
Wards Affected:	All Wards

Purpose and high-level overview

Purpose of Report:

This report provides a formal summary on the activities and achievements of the Scrutiny Committee during the 2022/23 Municipal Year.

Options:

No other options were considered.

Recommendation/s:

That Full Council receives and notes the Scrutiny Committee's Annual Report.

Corporate Impact Assessment

Governance:

In accordance with 6.3 of the Scrutiny Committee Procedure Rules within the Constitution, the Scrutiny Committee is required to report annually to Full Council on its activities.

ESC policies and strategies that directly apply to the proposal:

The policies and strategies that directly apply to this proposal depends on the contents of the Scrutiny Committee's Work Programme.

Environmental:

Not applicable

Equalities and Diversity:

Not applicable

Financial:

Not applicable

Human Resources:

Not applicable

ICT:

Not applicable

Legal:

Not applicable

Risk:

Not applicable

External Consultees:	Not Applicable
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Strategic Plan Priorities

Select the priorities of the Strategic Plan which are supported by this proposal: (Select only one primary and as many secondary as appropriate)		Primary priority	Secondary priorities
T01	Growing our Economy		
P01	Build the right environment for East Suffolk	<input type="checkbox"/>	<input type="checkbox"/>
P02	Attract and stimulate inward investment	<input type="checkbox"/>	<input type="checkbox"/>
P03	Maximise and grow the unique selling points of East Suffolk	<input type="checkbox"/>	<input type="checkbox"/>
P04	Business partnerships	<input type="checkbox"/>	<input type="checkbox"/>
P05	Support and deliver infrastructure	<input type="checkbox"/>	<input type="checkbox"/>
T02	Enabling our Communities		
P06	Community Partnerships	<input type="checkbox"/>	<input type="checkbox"/>
P07	Taking positive action on what matters most	<input type="checkbox"/>	<input type="checkbox"/>
P08	Maximising health, well-being and safety in our District	<input type="checkbox"/>	<input type="checkbox"/>
P09	Community Pride	<input type="checkbox"/>	<input type="checkbox"/>
T03	Maintaining Financial Sustainability		
P10	Organisational design and streamlining services	<input type="checkbox"/>	<input type="checkbox"/>
P11	Making best use of and investing in our assets	<input type="checkbox"/>	<input type="checkbox"/>
P12	Being commercially astute	<input type="checkbox"/>	<input type="checkbox"/>
P13	Optimising our financial investments and grant opportunities	<input type="checkbox"/>	<input type="checkbox"/>
P14	Review service delivery with partners	<input type="checkbox"/>	<input type="checkbox"/>
T04	Delivering Digital Transformation		
P15	Digital by default	<input type="checkbox"/>	<input type="checkbox"/>
P16	Lean and efficient streamlined services	<input type="checkbox"/>	<input type="checkbox"/>
P17	Effective use of data	<input type="checkbox"/>	<input type="checkbox"/>
P18	Skills and training	<input type="checkbox"/>	<input type="checkbox"/>
P19	District-wide digital infrastructure	<input type="checkbox"/>	<input type="checkbox"/>
T05	Caring for our Environment		
P20	Lead by example	<input type="checkbox"/>	<input type="checkbox"/>
P21	Minimise waste, reuse materials, increase recycling	<input type="checkbox"/>	<input type="checkbox"/>
P22	Renewable energy	<input type="checkbox"/>	<input type="checkbox"/>
P23	Protection, education and influence	<input type="checkbox"/>	<input type="checkbox"/>
XXX	Governance		
XXX	How ESC governs itself as an authority	<input checked="" type="checkbox"/>	<input type="checkbox"/>
How does this proposal support the priorities selected? The Scrutiny Committee Annual Report is part of the Council's good governance arrangements.			

Background and Justification for Recommendation

1 Background facts	
1.1	In accordance with the Constitution, the Scrutiny Committee is required to provide Full Council with an annual report of its activities and achievements.
2 Current position	
2.1	The Scrutiny Committee reviewed and approved the draft Annual Report for the 2022/23 Municipal Year at its meeting on 2 March 2023 and granted delegated authority to the Chairman to finalise the Report once details of the review undertaken earlier in the meeting on 2 March had been included.
3 How to address current situation	
3.1	Not applicable
4 Reason/s for recommendation	
4.1	To ensure that Full Council has an opportunity to review and comment on the Scrutiny Committee's activities and achievements.

Appendices

Appendices:	
Appendix A	Annual Report 2022/23
Background reference papers:	
None	



SCRUTINY COMMITTEE

ANNUAL REPORT 2022/23



March 2023

Our Vision for Scrutiny Activity

Scrutiny at East Suffolk Council aims to enhance the quality of life for all who live and work in the District by ensuring the provision of a safe, clean, attractive and prosperous environment for our communities.

Scrutiny aims to be objective, evidence-based, transparent and constructive and to reflect the interests and concerns of local communities.

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- The principles of good public scrutiny
- What we do not do

Scrutiny Committee	Page 6
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- Membership (2022/23 Municipal Year)
- Roles and responsibilities
- The Scrutiny Committee's Work Programme 2022/23
- Member Working Groups/Task and Finish Groups
- Membership of Outside Bodies
- Call-ins and Councillors' Calls for Action
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- Budget

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Foreword by the Chairman

**Councillor Stuart Bird,
Scrutiny Committee Chairman 2022/23**

As Chairman of the Scrutiny Committee, I am delighted, once again, to be able to present the Annual Report of East Suffolk Council's Scrutiny Committee, the last for this term of office. This Report provides a retrospective record of the work undertaken by the Committee, its activities, and achievements in the 2022/23 Municipal Year as well as details of how the Committee will reflect on activities over the whole term with a view to suggesting possible improvements for the new Scrutiny Committee in the next term of office 2023-2027.

I continue to be supported by Councillor Mike Deacon, a very experienced and enthusiastic Vice-Chairman, as well as the other 11 dedicated Members of the Committee. We all work together, cross-party, to support and facilitate this extremely important statutory function.

The Committee's main priorities each year are as follows:

1. To act as a counterbalance that complements the decision-making powers of Cabinet in terms of the strategic direction of the Council.
2. To examine various areas of the Council's work and, in some cases, the work of partner organisations that have significance for our local communities and residents.
3. To scrutinise as a "critical friend" individual Cabinet Members on their key deliverables for the year, thereby enabling the Committee to identify if they can add any value to the pre-decision stages and the ultimate outcomes for the Council.

The Committee scrutinised all the Cabinet Members on their portfolios as well as reviewing specific topics, both those matters that affected internal Council services and also those it felt were particularly important to communities and residents such as:

- The Planning Enforcement Process
- The Council's Progress Following the Declaration of a Climate Emergency
- How the Council Engages with Housing Tenants
- Democratic Accountability within the Planning Process

I would like to take this opportunity to acknowledge and thank everyone who has participated in this year's Scrutiny process.

Lastly, I hope this Report reflects what I feel has been a very productive year in Scrutiny and that you find it informative and interesting.

Stuart Bird

THE ROLE OF SCRUTINY

What we do

The Local Government Act 2000 introduced a new set of “political management arrangements” for the running of Councils, including the formalising of executive arrangements for local government to be balanced by a strong scrutiny function to ensure decision-makers were held to account.

To carry out this scrutiny function, the arrangements included the power to do *anything they consider likely to promote or improve the economic, social, or environmental well-being of the area.*

The role and purpose of scrutiny is to add value to the delivery of public services through providing strong but measured challenge both to the Cabinet and to external organisations where there are issues of public concern. It acts as a 'critical friend' to decision makers by beneficially examining the Council's policies, key decisions, and service provision to ensure they are appropriate, efficient, transparent, accountable and in the best interests of the District's residents. Since 2010, several pieces of legislation have further emphasised the value of scrutiny within modern and effective government, including reviewing issues which lie outside the Council's responsibilities. This is achieved by having co-operative relationships between scrutinised bodies and the Committee.

Scrutiny is led by local, elected Councillors working with other local bodies and local communities to help the constructive improvement of services. Scrutiny uses open and transparent processes and is an influencing, rather than a decision-making, body. It provides co-ordinated reviews of policy and service performance in line with strategic objectives and corporate priorities. Its challenges are constructive and purposeful. It is objective, focused, and realistic in its reviews. These are evidence-based so demonstrating that scrutiny is credible and useful at adding value.

Scrutiny is a catalyst for positive change, promotes and acknowledges good practice and challenges under-performance.

Meetings of the Committee are open to the public and mostly held in the evenings. The Committee has endeavoured to engage with the wider community and to involve stakeholders at its meetings, as appropriate.

The Scrutiny Committee is also the Council's designated **Crime and Disorder Committee** for the purposes of the Police and Social Justice Act 2006 (s19-22) and this requires the Committee to review community safety issues annually.

The Health and Social Care Act 2012 (s190) gave Councils powers to scrutinise local NHS trusts, including Primary Care Trusts. The Local Government and Public Involvement in Health Act 2007 gave more powers to local government to scrutinise other public organisations, including bodies such as, for example, the Environment Agency. In 2022/23, the Committee did not specifically review any aspects of health provision other than the impact the new Integrated Care System will have on our own Council Services, but the power remains available to do so as considered necessary.

The Scrutiny Committee conducts its proceedings in accordance with its Terms of Reference (as set out in Part 2, Section C, Functions and Responsibilities of the Constitution) and the Scrutiny Procedure Rules (as set out in Part 3, Procedure Rules, of the [Constitution](#)).

The Principles of Good Public Scrutiny

The Centre for Governance and Scrutiny promotes the value of scrutiny in modern and effective government and has identified the following four principles of good public scrutiny:

- ***To provide a critical friend “challenge” to executive policymakers and decision-makers***
 - ***To enable the voice and concerns of the public***
- ***To be carried out by “independent minded governors” who lead and own the scrutiny role; and***
 - ***To drive improvement in public services***

What we do not do

The Scrutiny Committee does not deal with quasi-judicial matters such as Planning or Licensing, except if there were to be a significant system issue. It does not deal with issues that are, or should be, resolved by the separate corporate complaints procedure or through internal systems within Service Teams. The Committee does not deal with vexatious or discriminatory issues or matters that are not of wider community significance, the latter being more appropriately pursued through the relevant Service Team, Ward Councillor or Cabinet Member with responsibility for the area in question.

Scrutiny does not become involved where there would be duplication of existing work, or if its review would be untimely or would not lead to effective outcomes.

SCRUTINY COMMITTEE

Membership 2022/23

The Committee comprises 13 Members and is politically balanced with 9 Conservatives, 2 Labour and 2 GLI Members. The Membership has slightly changed over the past year and I would like to thank Councillors Gandy and Gee for their valued contribution to the Committee. The current membership is as follows:



Stuart Bird (Chairman) (CON)
Chairman since May 2019



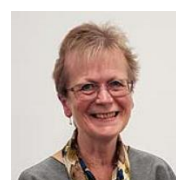
Mike Deacon (Vice-Chairman) (LAB)
Vice-Chairman since May 2019



Edward Back (CON)
Member since May 2019



David Beavan (GLI)
Member since May 201



Judy Cloke (CON)
Member since May 2019



Linda Coulam (CON)
Member since May 2019



Tony Goldson (CON)
Member since May 2022



Louise Gooch (LAB)
Member from May 2019 to
May 2022 & from
December 2022



Tracey Green (CON)
Member since May 2019



Colin Hedgley (CON)
Member since May 2021



Geoff Lynch (CON)
Member since May 2019



Keith Robinson (CON)
Member since May 2019



Caroline Topping (GLI)
Member since May 2019

Roles and Responsibilities

The Council's Constitution contains detailed role descriptions outlining the purpose, duties, and responsibilities of the various members of the Committee, as well as the qualities and skills required. They are designed to be used as a guide and a working document but are not intended to be prescriptive or exclusive. These can be found within [Part 2, Functions and Responsibilities](#), of the Constitution on our website, but a brief summary is also provided below.

Chairman and Vice Chairman of the Committee

At East Suffolk, the Chairman is a member of the Administration Group of the Council; the Vice-Chairman is a member of an Opposition Group.

The Chairman provides leadership and ensures the Committee is Member-led and has ownership of its work programme. S/he aims to develop positive relationships and encourages contributions from Members. The Chairman also ensures the Committee works inclusively and that the role of scrutiny is conducted in an enabling environment.

Committee Members

Members of the Committee contribute actively at the meetings with fairness and impartiality. They will participate, as appropriate, in the collection and assessment of evidence to produce effective recommendations and follow up on any recommendations made. Committee members take an overview of all the activities the Council is involved in and can decide to scrutinise issues.

Partner and public involvement

The views of local people are of importance to the primary aim of scrutiny – *improving the quality of life for the local community*. Partners and the public can contribute specific expertise to topics being examined from the perspective of either a service provider or a service user. Their involvement adds value and strengthens the links with stakeholders.

The work of the Scrutiny Committee also provides Members with additional opportunities to engage with groups within the community who may not readily get involved directly in the work of the Council. Therefore, it remains important for the Scrutiny Committee to be outward-looking and to consider how partners and the public might be involved in its work.

Such involvement may be through formal 'co-option' or invitations to representatives of groups to contribute expert knowledge or evidence, or to members of the public to contribute their views.

Scrutiny welcomes and encourages our Partners as well as members of the public who live or work in the District to get involved and suggestions for the work of our Committee will be considered for their suitability. Please email our Scrutiny Support Officer Sarah.Davis@eastsuffolk.gov.uk in the first instance.

The Committee's Work Programme 2022/23

The Committee decided to continue scheduling 11 meetings per year in its Work Programme as it enabled Members to focus on one topic per meeting and avoided the need to arrange ad-hoc meetings. Meetings were held on the following dates:

19 May 2022
16 June 2022
14 July 2022
29 September 2022
27 October 2022
17 November 2022
15 December 2022
19 January 2023
26 January 2023
16 February 2023
2 March 2023

Each year, the Committee has a number of reviews it must carry out such as the Budget (19 January 2023) as well as a requirement to sit at least once a year in its statutory role as the Council's Crime and Disorder Committee (15 December 2022).

For the remainder of its meetings in 2022/23, Members decided to focus primarily on reviewing matters that affected Council Services and those issues that were deemed to be of particular importance to the District's communities and residents. Below is a brief summary of the key highlights of the Committee's discussions - the related full formal Committee reports and resulting minutes may also be viewed on the Council's [website](#):

19 May 2022 – The impact of flexible working on the workforce, Council resources and productivity

Key points discussed:

- Whether the Council was meeting its statutory obligations
- The Agile Working Guide produced
- Savings brought about by flexible working in time and cost
- The ability to relocate staff to East Suffolk House and Riverside from other sites no longer fit for purpose, instead of considering new office space
- The initial adaption to working from home as a result of national lockdowns and the Council maintaining services following this change
- Support put in place by the IT department to successfully enable home working on a larger scale
- DSE self-assessment for officers working from home
- The role of managers in ensuring correct DSE practices when working from home
- Staff survey completed on flexible working arrangements and its results
- The long-term effects of working from home during national lockdowns on working practices and employee expectations
- The impact of working from home on absence rates
- The additional costs placed on employees when working from home
- The impact of flexible working on new starters and apprentices

- Line management of employees working from home
- The impact on employees whose roles did not allow them to work from home
- Health and safety risks working from home
- Minimising the risk of employees working excessive hours from home
- Access to health and wellbeing support
- Impact of working from home on employees with caring responsibilities
- The Council's responsibility and liability for accidents occurring when employees work from home
- Unison input and its own staff survey, with its results detailed

Resolution(s)
1. That Council Officers ensure that staff and Members were sent regular reminders on the best practice for WFH and agile working.
2. That a suggestion be made to the 2023 Scrutiny Committee that they might want to review the position in relation to agile working.

16 June 2022 – Review of the Planning Enforcement process

Key points discussed:

- The current quarterly reporting to the Strategic Planning Committee
- The current monthly reporting to the Planning Committees North and South
- Internal Audit's involvement in reviewing systems and processes for Planning Enforcement
- Changes to the management structure
- The Enforcement Action Plan to be presented to Strategic Planning Committee in September 2022, in response to the recommendations of Internal Audit
- The impact of COVID-19 on the work of the team
- The role of the Planning Enforcement Policy in how complaints are investigated
- Changes introduced in recent years to speed up processes
- Whether outsourcing Planning Enforcement had been considered
- The need for a seamless Planning Authority
- Enforcement of major planning breaches
- Whether the team had the appropriate resources
- Comparisons between the Council's Planning Enforcement service and similar Council Planning departments
- The process when enforcement cases are passed to the Council's legal team
- Whether legal action could be sped up
- The performance of the Council in relation to legal action on enforcement
- The possibility of introducing a Compliance Officer
- Time limits for legal proceedings

Resolution(s)
That the Cabinet Member with responsibility for Planning and Coastal Management note that the Scrutiny Committee would support the principle of exploring opportunities for additional resource in the compliance and monitoring area to support and improve the Enforcement Service.

14 July 2022 – Review of the Council’s progress following the Declaration of a Climate Emergency

Key points discussed:

- Three main areas of focus – reduction of carbon footprint, communicating to the outside world, biodiversity
- Embedding the environment in the Council’s decision making
- Various guidance documents authored to support the Council’s environmental focus
- Running front-line services environmentally whilst ensuring value for money and meeting residents’ expectations
- Member/officer collaboration on environment and climate change
- The Environment as a core theme of the Council’s strategic plan
- The Environment theme delivery plan
- The Environment Task Group
- Key Performance Indicator dashboard tracking progress
- Solar panel installation on Council buildings
- Tetrapak recycling
- Rates of recycling against general waste per household
- Contamination of household recycling bins
- Campaigns on recycling
- Bin inspection process during collections, to avoid contamination
- Meeting the Council’s CO² emissions target by 2030
- The conversion of waste trucks to run on hydro-treated vegetable oil (HVO) and the impact of this on the Council’s carbon footprint
- Measuring the Council’s carbon emissions
- Encouraging manufacturers to reduce packaging
- How money raised by green charges/taxes is spent
- Low carbon energy
- Environmental protection within Planning – heating systems in new builds and sustainable construction
- Retrofitting the Council’s housing stock with energy efficient heating systems
- The impact of the cost of living crisis on fuel efficiency
- Engagement with town and parish councils in relation to flytipping and littering
- Availability of electric vehicle charging points in East Suffolk
- Recycling electric vehicle batteries
- Air quality

Resolution(s)
<p>That the Cabinet Member with responsibility for the Environment and Officers provide the following information to the Scrutiny Committee to be reported to the next meeting on 29 September 2022:</p> <p>Updates:</p> <ul style="list-style-type: none"> • What happened to the batteries of scrapped electric vehicles? • What was the latest situation in relation to the problem with contaminated Blue Bins in previously identified streets in Lowestoft? <p>Information Notes:</p> <ul style="list-style-type: none"> • What were the practicalities and costings of providing more publicly accessible electric vehicle charging points on Council owned land? • What was the proposed plan for retrofitting the Council's Housing Stock including indicative timescales and costings, and would this be achieved in time to meet this Council's target to be carbon neutral by 2030?

29 September 2022 – Review of the Sale and Disposal of Council Assets Procedure

Key points discussed:

- Process of all disposals going through Cabinet per the Constitution, with some exceptions
- The notification process to Members when assets disposed of in their Ward(s)
- Process of selling land for garden extensions
- Valuation process
- Internal and external checks
- Loss of asset value and future maintenance liability
- Mapping of assets on Uniform
- Asset transfers
- The Council's Asset Strategy and if should be reviewed
- HR resources for Asset Management
- Use of external valuers
- Surplus assets
- New properties built by the Council
- Subsidy Control
- The sale of the former Suffolk Coastal District Council Melton Hill offices
- Commercial tenants and rent arrears
- C2 category properties owned by the Council and their state of repair
- Protecting assets from negative equity
- The Right To Buy (RTB) process

Resolution(s)
<p>That the report be noted and the Deputy Leader and Cabinet Member with responsibility for Economic Development and Officers be asked to report back to Members on the following queries:</p> <ul style="list-style-type: none"> • Are there any C2 category properties in such a poor state of repair that they need to be disposed of? • Would the Council lose a lot of money if the value of a Council House dropped and the tenants then put in an RTB? • What are the latest performance figures regarding the KPI – 5% surplus for more than 12 months? • What is the RTB process and how are valuations done, including how can we protect the Council and ensure any upgrade investments in individual properties were reflected in the valuation? • A link to the Uniform asset map and the name of team members Councillors could contact for assets within their Ward.

17 November 2022 – Review of How the Council Engages with Housing Tenants

Key points discussed:

- Methods of collecting rents from tenants, utilising modern methods
- The ongoing production of a Tenancy Engagement Strategy, including the creation of a Residents Board and a Tenant Scrutiny function consisting of tenants and residents (leaseholders)
- Annual visits for gas and electrical maintenance testing
- Engagement being targeted and prioritised according to risk
- A programme of stock condition surveys coming forward through the new Asset Management Plan
- Design of the Survey of Tenants and Residents (STAR), future questions and sample size
- Options for elderly tenants to downsize
- The Council's role in promoting retired living schemes and offering support for wellbeing
- The risk of digital exclusion during the STAR survey
- The commissioning of the Tenants Participation Advisory Service (TPAS) report to provide a catalyst and framework for the Council to develop its Tenant Participation Strategy
- Safeguarding vulnerable tenants
- The out of hours service
- Tenant engagement
- The Annual Report to tenants
- The Officer Board, comprising officers from the Council's Communities and Housing Teams, to ensure alignment on community projects
- Resources

Resolution(s)
<p>That the report be noted and the Cabinet Member with responsibility for Housing and Officers report back to Members on the following Matters Arising:</p> <ul style="list-style-type: none"> • Can the Ward Members be briefed on the outcome of Tenant Engagement workshops that take place in their Ward? • What information about tenants do the Out of Hours call responders hold? Particularly with regard to vulnerable tenants. • The Head of Housing to consider feedback from Councillors Deacon and Green about their recent interactions with the out of hours service.

15 December 2022 – East Suffolk Crime & Disorder Committee: Review of the East Suffolk Community Safety Partnership

Key points discussed:

- The refreshing of the Community Safety Partnership (CSP) Action Plan between March and November 2022
- The CSP's primary topics – Violence against Women and Girls (VAWG) and Anti-Social Behaviour and work with partner agencies to address these issues
- Funding for the CSP
- Funding for infrastructure improvements such as lighting, fencing and CCTV
- The "Ask for Angela" activity and its effectiveness
- Domestic Abuse champions
- The number of Independent Domestic Abuse Advisors available in Suffolk
- Work to change the behaviour of men regarding VAWG
- The Crucial Crew project
- Reporting anti-social behaviour
- Co-ordination of publicity on how to report anti-social behaviour
- The new Anti-Social Behaviour Action Plan, including KPIs to enable monitoring the effectiveness of interventions
- The proposed Criminal Exploitation Hub, to be located in Lowestoft
- The Criminal Exploitation (previously County Lines) priority
- The Police and Crime Commissioner providing updates by Ward as part of reporting to outside bodies

Resolution(s)
<p>That the Scrutiny Committee note the current position of the CSP, including the CSP Action Plan and the priority areas Violence Against Women and Girls and Anti-Social Behaviour.</p>

19 January 2023 – The Council’s Budgets

Capital Programme 2022-23 to 2026-27

Key points discussed:

- The decline in the number of public conveniences in Lowestoft Town Centre
- The value for money of the Southwold Enterprise Hub
- The number of housing completions achieved in 2022/23 and the reasons the budget for new builds had been reduced
- The Earmarked Reserves for capital projects
- The procurement of swimming pool covers to help reduce energy costs
- The variation of the Environment and Port Health expenditure line
- The expenditure to date for the refurbishment of St Peter’s Court in Lowestoft

Resolution(s)
That Cabinet be recommended that: 1. The General Fund capital programme for 2022/23 to 2026/27 including revisions as shown in Appendix B. 2. The Housing Revenue Account capital programme for 2022/23 to 2026/27 including revisions as shown in Appendix G.

Housing Revenue Account (HRA) Budget Report 2023/24 to 2026/27

Key points discussed

- The value for money of retrofitting the Council’s housing stock
- The size of the wall insulation budget
- The condition of the Council’s housing stock including works required to ensure all Council properties had at least an Energy Performance Certificate rating of C
- Council house rents including the level of rent arrears and refunds of overcharged rent

Resolution(s)
That Cabinet be recommended that: 1. The draft HRA budget for 2023/24, and the indicative figures for 2024/25 to 2026/27. 2. Movements in HRA Reserves and Balances 3. Proposed rent increase of up to 6%. 1% less than the Government 7% rent Cap for 2023/24 rent setting. 4. Service charges and associated fees for 2023/24 5. Rent and Service Charges to be charged over a 50-week period unless being used for Temporary Accommodation when a 52-week period will be applied. 6. A report be made to the Environment Task Group within 12 months setting out a detailed programme to deliver HRA Housing Stock retrofitting projects. To note the following: 1. Revised outturn position for 2022/23. 2. Changes affecting public and private sector housing and welfare to be noted. 3. Effects of the cost-of-living crisis to the HRA to be noted.

Draft General Fund Budget and Council Tax Report 2023/24

Key points discussed

- The Second Homes premium
- The disposal of Council assets
- The investment of land for economic development
- The achievability of the Council's ambition to be carbon neutral
- The levels of green waste and the increase in subscription charges
- The reduction in parking income
- The cost and use of agency staff at the Council

Resolution(s)
That Cabinet be recommended: 1. To approve the 2023/24 General Fund Revenue Budget as set out in the report and summarised in Appendix A5 and notes the budget forecast for 2024/25 and beyond; 2. To approve the reserves and balances movements as presented in Appendix A7; and 3. To approve a proposed Band D Council Tax for East Suffolk Council of £181.17 for 2023/24, an increase of £4.95 or 2.81%.

26 January 2023 – The Review of Governance Arrangements for the Council's Local Authority Trading Company (LATCO) Group Structure

Key points discussed

- The overall Group structure
- The definition of a "Teckal" company and how activities would be monitored to ensure our companies met the criteria to be a Teckal company
- The nature of the Council's shareholding and opportunities to expand in the future
- Accountability and review mechanisms, including by the Scrutiny Committee
- Contract management including key performance indicators
- The access rights of Councillors to information about a LATCO and attendance at meetings
- How the change will affect existing Norse staff, including TUPE and pay negotiations, and staff training to ensure good customer service was provided

Resolution(s)
That the report and responses to the questions raised by Members, be noted.

16 February 2023 – The impact of the new Integrated Care Systems (ICS) on Council Services

Key points discussed:

- The ICS structures varied between the north and the south of the district and the Suffolk and North East Essex System had been established earlier than the Norfolk and Waveney System
- Opportunities for ESC Officers to engage with and influence matters that related to ESC priorities
- Past imbalances in how Members had engaged in strategic health matters between the north and south of the district

- Alignment with Strategic Plan priorities and the priorities of the eight Community Partnerships, such as mental health support for young people
- The role of the Integrated Care Board (ICB) and the allocation of funding
- Having a 'seat at the table' enabled the Council to influence health matters strategically
- There were review and accountability mechanisms built-in to the governance arrangements of the ICSs through progress monitoring against their 5-year plans and through Board oversight
- Two new staff had been recruited to increase preventative health capacity using funding in part from the NW ICS
- The role of Financial Inclusion Officers in promoting exemptions and pre-payment certificates to those that needed support
- Social prescribing was delivered in partnership with the voluntary sector

Resolution(s)
1. That a table setting out the prevalence of smoking in each of the East Suffolk ICS areas alongside the preventative reduction target for that cohort, be reported as a Matter Arising to the next suitable meeting of the Committee.
2. That the report and the responses to the questions raised by Members, be noted.

2 March 2023 – Review of Democratic Accountability within the Planning Process

Key points discussed:

- The role of the Referral Panel in only determining the route of an application
- The composition of the Referral Panel and if a Member should have a casting vote if the four person Panel is tied 2-2 rather than an Officer deciding
- If Ward Councillors should be allowed to speak at the Referral Panel and receive the paperwork to enable them to confirm its accuracy
- The Government target for applications being dealt with under delegated powers, the consequences for not meeting the target and if having a target to delegate decisions could lead to some applications being delegated rather than being considered by a Committee
- The need to encourage Ward Councillors to attend Referral Panels to get an understanding of the process and to attend Planning training
- The need to highlight that Ward Councillors and objectors can speak to case officers and members of the Planning Committee, as well as submitting a formal written representation
- If 3 minutes was sufficient time for an objector to speak at Committee
- The need for more training for Town and Parish Councils
- The need for simpler guidance on the website, a YouTube video or QR code on the site notice of what constitutes a valid objection on planning grounds
- The weight given to Neighbourhood Plans when deciding applications
- The consultation period for Town and Parish Council's to respond
- The process other Local Authorities use
- The outcome of the SALC survey and the Council's response to it
- The impact of Covid on the planning process and in particular the temporary pausing of site visits
- If there should be a call-in procedure to enable some specific applications to be considered by a Committee rather than having to go through the Referral Panel process

Resolution(s)
<ol style="list-style-type: none"> 1. That the Strategic Planning Committee in June 2023 be recommended to change the Planning Procedure Rules to allow an application to bypass the Referral Panel process and automatically be considered by the Planning Committee in the event of a “triple lock” style request being received by ALL of the following: <ul style="list-style-type: none"> • A Ward Councillor • The Town/Parish Council • A Member of the Planning Committee, unless they are also the same Ward Councillor in which case it would be two (Ward Councillor and Town/Parish Council). 2. That, as agreed by the Cabinet Member with responsibility for Planning and Coastal Management, the Strategic Planning Committee in June 2023 also consider amending the Planning Procedure Rules to allow the following: <ul style="list-style-type: none"> • If a Member should have a casting vote if the four person Referral Panel is tied 2-2 rather than an Officer deciding. • If 3 minutes was sufficient time for an objector to speak at Committee. 3. That the Cabinet Member with responsibility for Planning and Coastal Management and Officers provide the Scrutiny Committee with a written response to the following two questions ASAP: <ul style="list-style-type: none"> • If it is possible to have another QR code on site notices to take members of the public to a simple guide on what constitutes a relevant planning objection? • What was the outcome, and are there any further actions arising, from the recent meeting between Officers and SALC in relation to their survey?

Cabinet Member Scrutiny Sessions

In addition to the above reviews, the Committee held scrutiny sessions of the Cabinet Members regarding elements of their portfolios as follows:

- 16 June 2022 – Cllr David Ritchie – Cabinet Member with responsibility for Planning and Coastal Management – Development Management and Local Plan
- 14 July 2022 – Cllr James Mallinder – Cabinet Member with responsibility for the Environment – Waste Management and Environmental Protection
- 29 September 2022 – Cllr Craig Rivett – Deputy Leader and Cabinet Member with responsibility for Economic Development – Energy/Renewables and Economic Development
- 27 October 2022 – Cllr Norman Brooks – Cabinet Member with responsibility for Transport – Civil Parking Enforcement and Transport & Infrastructure
- 27 October 2022 – Cllr Letitia Smith – Cabinet Member with responsibility for Communities, Leisure and Tourism – Tourism/Grants
- 15 December 2022 – Cllr Stephen Burroughes – Cabinet Member with responsibility for Customer Experience, ICT and Commercial Partnerships – Leisure Commercial Partnership and Customer Services

Member Working Groups/Task and Finish Groups

There were no Task and Finish Groups held during the period of this report.

Membership of Outside Bodies

The Leader of the Council has requested that the Scrutiny Committee decide on the appointment of representatives to external forums with a scrutiny function. In July 2022, the Committee considered and appointed the following for the 2022/23 Municipal Year:

- **Suffolk County Council Joint Health Scrutiny Committee** – Cllr Ed Back as the named representative with Councillor Colin Hedgley as the nominated Substitute.
- **Suffolk County Council Joint Flood Risk Management Scrutiny Committee** – Cllr Judy Cloke as the named representative with Councillor Keith Robinson as the nominated Substitute.

Call-ins and Councillors' Calls for Action

There have been no Call-ins or Calls for Action in the period of this report.

Training and Development

Whilst Scrutiny Committee Members feel that training developed specifically for them is vitally important to support the continued development of the Committee, they did not feel it was necessary to have any specific training in 2022/23, following the excellent session they had in 2021 entitled "Developing Scrutiny and Building the Team" and the Away Evening in February 2022.

Budget

The Scrutiny Committee has an annual budget of £6000, however, none was spent in the 2022/23 Municipal Year.

LOOKING AHEAD

The Scrutiny Committee continues to evolve by regularly reviewing its processes and procedures to identify any areas for development so that we continue to focus on the ‘big things’ where a positive impact may be delivered for the Council and residents.

Following the review of Committee procedures at the beginning of 2022, a number of changes were made and implemented in the 2022/23 Municipal Year, principally the abolishing of Scoping Forms, slightly changing the Cabinet Member Sessions to make them more targeted and effective, together with the provision of an Away Evening to develop the Annual Work Programme.

An Away Evening has been organised for April 2023 to review not only these changes but also the effectiveness of the Committee over the past four year term with a view to making some recommendations for the new Scrutiny Committee to consider in 2023/24. The review will involve previous Members of the Committee, together with regular Substitutes, as well as obtaining the views of Cabinet Members and Senior Officers involved in the Scrutiny process.

As membership of the Committee will possibly change following the elections in May 2023, an Away Evening will be held in June 2023 to enable the new Scrutiny Committee to formulate their 2023/24 Work Programme using the following as a basis:

Key features of an effective work programme

A Member led process, shortlisting and prioritising topics – with support from officers – that:

- **reflects local needs and priorities – issues of community concern as well as Corporate Plan and Medium Term Financial Strategy priorities**
 - **prioritises topics for scrutiny that have most impact or benefit**
 - **involves local stakeholders**
 - **is flexible enough to respond to new or urgent issues**



FULL COUNCIL

Wednesday, 15 March 2023

Subject	Cabinet Members' Report and Outside Bodies Representatives' Report to Council
Report by	Councillor Steve Gallant Leader of the Council

Is the report Open or Exempt?	OPEN
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Category of Exempt Information and reason why it is NOT in the public interest to disclose the exempt information.	Not applicable.
Wards Affected:	All Wards
Purpose of Report: To receive the Cabinet Members' Report and the Outside Bodies Representatives' Report to Council, for information.	
Options: Not applicable.	

Cabinet Members' Reports to Council

Cabinet Member:	Councillor Mary Rudd, Cabinet Member with responsibility for Community Health
Contact Details:	mary.rudd@eastsoffolk.gov.uk Tel: 07867 372976

Health and Wellbeing

There have been significant changes in health and wellbeing structures nationally over the lifetime of this Council, with Clinical Commissioning Groups replaced by Integrated Care Systems and their sub-structures, including the Great Yarmouth and Waveney Place Board and the Ipswich and East Suffolk Alliance. East Suffolk is covered by two different ICSs – Norfolk & Waveney and Ipswich & North East Essex. To find out more, please see last month's Scrutiny Report: [Decision Details: Integrated Care Systems \(cmis.uk.com\)](https://cmis.uk.com)

I Chair the new Waveney Health and Wellbeing Partnership as Cabinet Member, which also involves the three north Community Partnership Chairs and Communities Officers, and the three Integrated Neighbourhood Teams in the south of the District, under which our five south Community Partnerships nest, continue to evolve and grow.

Connect Spaces have been introduced across the three INT areas in the south of the district which create opportunities for statutory and VCSE sector organisations to work collaboratively to deliver programmes of work which are having a positive impact on people's health and wellbeing. This has included work with schools to address concerns with accessing mental health support for the wider community, supporting people to live well with dementia, supporting the most vulnerable members of the community through the cost of living, and developing a new wellbeing hub which will see a range of non-clinical services be delivered by statutory and VCSE sector groups for people of all ages to address concerns around local health challenges and inequalities.

The Integration and Partnerships Manager (hosted by ESC and funded by the ICB) has led the development of targeted and sustainable partnership working between the INTs, Connects, Community Partnerships, and other health and wellbeing related networks to ensure joined up working and sharing of resources when addressing health and wellbeing priorities and to avoid duplication.

An key issue across East Suffolk is health inequalities – differences between health outcomes in different parts of the District and the differences in healthy life expectancy between our most affluent and our poorest communities. Specific challenges for the East Suffolk population including diabetes, smoking, hypertension, obesity and overweight, physical activity levels and mental health and wellbeing.

Clearly the most significant health challenge during the last four years has been the Covid-19 pandemic, and slides presented at the Community Partnership Forum meeting earlier

this month by Anna Crispe from the Knowledge and Insight Team summarise the impact on Suffolk, including the pandemic's role in exacerbating health inequalities:



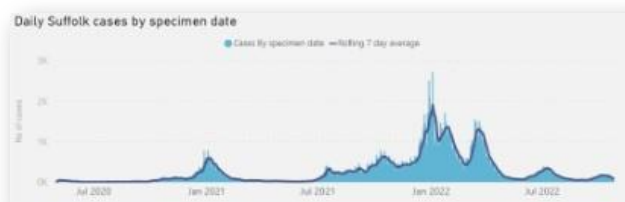
Public Health
& Communities

The Covid-19 pandemic began in early 2020 – and by the Spring, much of the world was in lockdown as we tried to work out how to combat the effects of the virus.

239,043 people tested positive for COVID-19 in Suffolk between May 2020 and Oct 2022

People from Suffolk's more socioeconomically deprived communities are **more likely** to catch COVID-19 - and are **less likely** to be vaccinated

In mid January 2021, COVID-19 patients in Suffolk were occupying **835** general hospital beds and **104** HDU/ITU beds



Over **55,000** people in Suffolk were on the Clinically Extremely Vulnerable list

2,303 people have died from COVID-19, **557** of whom lived in care homes (at 12 January 2023, deaths within 28 days of a positive test)

While only **17.6%** of cases have occurred in people aged over 60 in Suffolk, approximately **95%** of deaths have occurred in this age group – and there are still deaths from Covid in Suffolk occurring every week
Please continue to get vaccinated and to support people you know to do the same!

Source: Public Health Suffolk analysis

The Well Minds East Suffolk programme funded by the Community Partnership Board has delivered 31 theatre performances for schools in East Suffolk, trained more than 100 representatives of community groups and voluntary organisations in 'The Essentials' of mental health, enabled a new Cuppa and Chat project run by Communities Together East Anglia and supported seven courses (to date) focussing on emotional wellbeing in classrooms and youth settings.

Other highlights include:

- Worked with Ipswich and East Suffolk CCG (now the Ipswich and East Suffolk Alliance) and led the tender process for the Connect for Health social prescribing contract in the south of the District to March 2024 across the whole Alliance area. Shaw Trust were the successful provider for the three Integrated Neighbourhood Teams in the south of East Suffolk
- Provision of 20 Robopets – robot cats and dogs - for people with dementia in care homes and at home
- Funded a social prescribing project for carers with complex needs, delivered by Suffolk Family Carers. Also worked with SFC on a project focussing on young adult carers which was co-produced following a joint workshop with seven young people who are all caring for a close relative
- ESC is part of the Suffolk Dementia Partnership and 27 members of staff from 17 different teams were trained in Dementia Awareness through sessions delivered by Sackford Foundation

- We are working with St Elizabeth's Hospice and Pear Tree Centre to promote Compassionate Communities to support communities to discuss and think about life, death and loss and with the Deben Peninsula Compassionate Companions project, which is now being rolled out Suffolk wide
- Work with both Places Leisure and Everyone Active to develop projects to support people with Long Covid
- More than £120k of Boost funding allocated for projects focussing on dementia, healthy eating, keeping active, people with disabilities and their carers and mental health and wellbeing
- A programme of free 'supporting people in distress' training for VCSE organisations
- Seven Health and Wellbeing Roadshows around the District
- CP Board funding agreed for Student Life pilot peer ambassador programme in 6 East Suffolk Schools
- Work in partnership to develop a new Healthy Behaviours service focussing on smoking, healthy weight and physical activity
- An emerging strength and balance service in the south of the District
- £200k secured through the Suffolk COMF programme for work in Beccles, Lowestoft, Aldeburgh, Leiston and Saxmundham CP area and Felixstowe (£50k each area) on the back of the Emotional Needs Audit results.

Community Safety and Anti-Social Behaviour

The East Suffolk Community Safety Partnership was refreshed during the priority of this Council and the CSP Action Plan was revised and relaunched to better reflect both Suffolk and East Suffolk priorities.

Key to the strength of the CSP is the Responsible Authorities, those agencies who must co-operate as part of the partnership. These are:

- Suffolk Constabulary
- Suffolk and Norfolk Probation Trust
- Suffolk Fire and Rescue Service
- Suffolk County Council
- The District Council
- Public Health

The East Suffolk CSP action plan closely mirrors the strategic objectives set out by Suffolk County Council and the Safer Stronger Communities Board but focusses on opportunities for new activity and collaboration. The priorities for East Suffolk are:

- Hate Crime
- Preventing Radicalisation
- Modern Slavery
- Anti-social behaviour
- Criminal Exploitation (formerly known as County Lines)
- Violence against women and girls (VAWG)
- Volume crime
- Fraud

There is a broad range of activity being delivered under each of these headings. The Communities Team at East Suffolk Council plays both a co-ordinating role and a delivery role, centrally promoting collaboration between partners and working to find gaps in existing activity, and also delivering on-the-ground projects to address the concerns of local communities.

Fraud is a new priority included in the action plan, based on a growing threat to community safety. Volume Crime has been added at a local East Suffolk level on the basis of its visibility to local communities and the effect it has on community confidence. It includes crimes such as burglary and car crime.

The CSP has also added three underlying themes to the Action Plan:

Data: where the focus is on identifying and sharing as much useful data as possible to help maximise the impact of all Partners' work

Reporting: where all Partners work together to understand, optimise and promote reporting routes for all our Priorities, to reduce the underreporting of crime

Digital: where all Partners share intelligence and insight into the intersection between the Priorities and the digital world, to increase understanding and mitigate the outsize effect digital has on many of the Priorities in the action plan

A key priority for East Suffolk Council is Anti-social behaviour (ASB), which can affect anyone at any time and can range from annoying other people to serious violence and criminal activities, including but not limited to substance misuse, drunkenness, vandalism, graffiti, assault and threatening behaviour, harassment of residents or passers-by, intimidating groups of young people in public places, criminal damage.

The specific areas of focus identified in the workshop to develop the new CSP action plan were:

- Increase reporting of ASB
- Align existing activity with diversionary activity
- Reduce incidence of ASB

To continue to increase ASB reporting, the CSP will engage with communities who traditionally are reluctant to report ASB. A good example of this is this summer's CSP-funded events, delivered by the Police and the ESC Communities team, on the Gunton and Whitton estates. In total, 58 sessions were delivered over the 2 venues, with 87 hours of activities being offered in Lowestoft during this period, including four mobile climbing walls, the SOS bus, Catch 22 and the fire service. The project attracted 156 different young people, with 1343 visits from those young people and some fantastic feedback on increased feelings of confidence and a likelihood to engage.

We will also continue to deliver regular ASB roadshows and intend to build on the success of our 23 roadshows held in 2022, for ASB Awareness Week 2023. Rachel Tucker in the Communities Team has led a year long ASB transformation project, with the aim of reviewing and updating our policies and procedures around ASB and creating a standardised and effective approach across the District. She is working closely with the Police and Suffolk County Council, using her knowledge to identify areas for improvement but also of local best practice.

This has included the development of a comprehensive training programme for the eight Communities Officers to enable them to better support ASB victims (and perpetrators) in each of the eight Community Partnership areas. The focus has been on appropriate use of powers under the Anti Social Behaviour Police and Crime Act 2014 with use of Community Protection Notices, (CPN's), Community Behaviour Orders (CBO's) and other relevant tools under the act. There has also been work around the use of less formal approaches such as acceptable behaviour and neighbourhood agreements. Learning and polices have been developed in East Suffolk in relation to the Community Trigger which has been adopted at a Suffolk level and vice versa. [Community Trigger \(ASB Case Review\) » East Suffolk Council](#)

Multi Agency Criminal Exploitation (MACE) panels – these are Suffolk County Council and Suffolk Constabulary lead and work with key partners, voluntary groups, communities, children and families to support, disrupt, protect and empower children and communities from the risk of criminal exploitation. As a team we collate information around individuals, properties and areas from our own ASB case management system (E-cins), Environmental Protection, our Housing Team and House Associations. This provides the MACE panel with a very good insight into current activity in the area and what's being done already. In return, this provides us as an organisation a very good insight into other intelligence about what's going on within the District.

Holiday Activities and Food (HAF) Programme – HAF is backed by funding from the Department of Education, and East Suffolk receives almost £500k per year to deliver provision in Easter, Summer and December half terms. In 2022, we funded over 12,600 places across the District and saw roughly 81% uptake for these places. Moving into the 2023, we have had confirmation from Suffolk County Council that we will receive £458,635 funding this year.

Environmental Health

I am pleased to report that delivery of services against the Food and Health and Safety Service Plan for 2021/23 approved by full council on 23 November 2021 are on track. The Food and Safety Team has also been involved significant Health and Safety reactive work, including a prosecution, and a number of ongoing fatality investigations. The outdated Skin Piercing byelaws have been consolidated and updated into a single East Suffolk byelaw and advice and guidance to operators revised and issued. As well as reactive work the team are engaged in proactive work including being part of a multi-agency road traffic checks in Lowestoft where the Food and Safety team discovered over two kilograms of illegally imported pork in a van which was voluntarily surrendered and safely disposed of.

The Port Health service has engaged with an exceptionally wide range of issues from the delivery of business as usual, both in a COVID and COVID recovery environment. Four years ago, Port Health was gearing up to implement controls on EU goods entering GB alongside its existing service. Because of a political decision in April 2022, it then had to close the proposed EU service. However, since November 2022 the Port Health authority have been searching traffic entering the ports at Felixstowe and Harwich in a joint operation with Border Force for illegally imported pork to reduce the risk of an African Swine Fever outbreak. They have already seized over one tonne of pork. The Port Health service are actively involved with policy shaping and design activities including the development of the

future Target Operating Model (TOM) for checks which is anticipated to be released for consultation late March 2023.

The Corporate Health and Safety Team has been focused on supporting team leaders across the organisation to effectively manage health, safety and welfare. Policies relating to the management of asbestos and the growth of legionella have been revised. The Council has renewed its contract to provide a technology based lone worker protection system and over 250 staff now have been issued with a new device with the most up to date software.

Cabinet Member:	Councillor Norman Brooks – Cabinet Member with responsibility for Transport
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1. Headline statistics for CPE administration, which started in June 2020:

- a. The statistics reveal:
 - i. The PCNs served indicate more non-compliance is being detected, although compliance is achieved for some locations.
 - ii. The percentage of challenges accepted is reducing due to better evidence collection, and resolution of some TRO and lines and signs installation issues.
 - iii. The proportion of representations is reducing due to improved responses to challenges via a letter writing tool that provides consistent decision making and plain English replies to challenges and representations.
 - iv. The percentage of cases accepted by the Traffic Penalty Tribunal (TPT) is reducing and the proportion of PCNs considered by TPT remains at less than 0.2% of all PCNs served.

Statistics to date	2020-21	2021-22	2022-28/02/2023
PCNs served	13,324	21,404	26,564
Challenges	1,592 (50.8% accepted)	3,631 (45.2% accepted)	2,186 (23.4% accepted)
Representations	374 (37.2% accepted)	1,043 (57.4% accepted)	995 (64.0% accepted)
Appeals to TPT	15 (86.7% accepted)	33 (60.6% accepted)	35 (37.1% accepted)
All contact channels (PCN)	10,032	10,993	9,342
Phone calls (all parking services)	Not recorded	6,892	3,667

2. Parking sessions and revenue:

	2018-19	2020-21	2021-22	2022- 31/12/2022
Total sessions	2,908,992	676,109	2,762,856	2,206,741
RingGo penetration (sessions)	3.5%	47%	40%	37%
Total revenue	£4,163,885	£1,177,093	£3,979,782	£3,032,203
Reduced cash collection	-	£555,670	£1,593,069	£1,410,170

- a. The statistics to the end of Q3 reveal:
- The number of recorded parking sessions appear to be returning to pre-covid levels.
 - The RingGo penetration rate by session is 37%, but 46.5% by revenue meaning reduced cash-collection requirements is saving on CO2 emissions.
 - The number of RingGo parking sessions has risen from 150k in 2018/19 to 1.3M thus far in 2022/23, and there are now 1.2M repeat user sessions.
 - In the first three-quarters of 2022/23, 21,274 RingGo parking sessions were extended, and these drivers may have cut short their trips if they had to returned to their vehicle to purchase another P&D ticket – extended and longer stays benefit the local economy.

3. TSRGD (Traffic Signs Regulations and General Directions 2016) compliance and area reviews:

- At its meeting 05/07/2022, Cabinet resolved the creation of Highways Engineer role so TSRGD compliance could be properly achieved, and area reviews completed with recommendations made.
- ESC's Highways Engineer has completed the on-street validations of Buchanan Order Management's pre-CPE review. (BOM identified approximately 4,500 lines of discrepancies for administration area of East Suffolk including missing, faded, and dirty signs, and non-compliant, faded, and missing line markings.
- SCC is liaising with ESC (and the other districts) to agree the process so districts can complete 'minor works' i.e., correct lines and signs for CPE administration.
- Senior officers and Cabinet Member to review and approve a proposals to discuss the parking management requirements of towns and parishes with ward councillors and town and parish councils, and a time line agreed.

4. OSPA schemes:

- The On-Street Parking Account (OSPA) schemes for new parking management schemes in Framlingham, Lowestoft, and Southwold has now been technically

reviewed by SCC and the necessary 'written consent' provided. Council officers are to programme liaison with the respective ward councillors, town councils and specifically identified 'local' groups and an optimised timeline agreed for the statutory TRO process which includes public consultation.

5. Car park improvements:

- a. Autumn 2022: Blyburgate, Beccles, had redundant infrastructure removed, drainage gullies cleaned, and it was resurfaced in its entirety. Pedestrian walkways and crossing points, and wider parking bays and manoeuvring spaces were installed along with new cycle parking, bollards, and litter bins.
- b. Autumn/winter: A programme of work is being completed to appropriately maintain hedges and trees alongside verge maintenance to make accessible again long hidden footways and parking bays, across our car parks.
- c. Autumn/winter: General maintenance including surfaces, boundaries, bollards, and lining works are being expedited by the Parking Services team.

ESC has introduced two Demand Responsive Bus routes, one in the Northern parishes around Somerleyton into North Lowestoft and this runs two days per week during the trial. We have also reintroduced the Katch service, which was stopped by SCC in December 2022, and the service will restart in early April. This will run 7 days a week serving Wickham Market, Framlingham, Campsea Ashe and Snape area. East Suffolk Council is working with CATS, the local community transport operator to develop the on-demand minibus service that can be booked either by phone or via a new mobile app.

Cabinet Member:	Councillor Stephen Burroughes – Cabinet Member with responsibility for Customer Experience, ICT and Commercial Partnerships
Contact Details:	stephen.burroughes@eastsuffolk.gov.uk Tel: 07783 357940

We are only weeks away from the end of our 4-year administration, and I would like to share with you some highlights of what has been achieved within my portfolio over the last 4 years. Firstly, where has the time gone!

We have had a world pandemic thrown at us which impacted on all our lives, global financial turbulence caused by the war in Ukraine and the political ups and downs at home. It must be said that at East Suffolk Council we rose to the challenge, and I want to personally thank all our amazing staff and partners for getting us through a very challenging and demanding period.

So, what are some of the highlights?

- **CUSTOMER SERVICES & EXPERIENCE TEAMS**

- ✓ During Covid, workstreams worked to reduce demand and free up capacity with Interactive Voice Response to inform customers of relevant service changes and divert resources as needed.
- ✓ Successfully managing on average over 175,000 phone calls and over 22,000 emails per year. Mostly around Council Tax, Garden Waste, and ESC tenant enquiries.
- ✓ During the pandemic over 2,000 vulnerable residents were assisted including 1,800 community referrals.
- ✓ Implemented a brand-new Customer Service Delivery Model (known as our One Front Door) – designed be more flexible and making ‘every contact count’.
- ✓ Created Digital Champions - To encourage and inform residents about online services. Over 11 million people lacking digital skills, and 3.6 million are completely offline altogether.
- ✓ Evolved our customer access and digital coaching approach and as a result we now have a presence in more locations across the district than ever before. We now operate 2 days a week in at the Marina CS Centre in Lowestoft, but also now in Aldeburgh, Felixstowe, Halesworth, Leiston, Saxmundham & Woodbridge Libraries.
- ✓ Delivering customer support to our Housing Repairs Teams.
- ✓ Updating and evolving our Marina Centre HQ in Lowestoft.

- **COMMERCIAL PARTNERSHIPS**

- ✓ Completed the £15m refurbishment and upgrade to our leisure centres across the entire district with the last to be delivered at Waveney Valley Leisure Centre in Bungay.
- ✓ Welcomed our new operating partner, Everyone Active, to the assets in the north of the district who compliment and add to the service provided by Places Leisure who operate in the south.
- ✓ Changing our contractual relationship and journey with Norse around waste collection, grounds maintenance and street cleansing by venturing out on our own with East Suffolk Services Ltd to ensure elements are firmly in place for 1st July. This council should be proud in the fact that it is our ambition to establish a true flagship commercial business organisation, delivering a quality service throughout East Suffolk.
- ✓ Increasing oversight and performance across all our main commercial contracts through individual management boards with EA and Places, and increased influence through the JV Company board with Norse.

- **ICT & DIGITAL**

- ✓ Delivered free public Wi-Fi to all our 12 market towns throughout East Suffolk.
- ✓ Increased the number of residents now using our online services.
- ✓ Becoming ‘Digital by Default’ as the norm.
- ✓ Increased detailed performance management intelligence across the council.
- ✓ Successfully delivered systems and upgrades to Microsoft Office 365, Citrix and Uniform.
- ✓ Increasing efficiency by interacting across all service areas with greater use of laptops, tablets.
- ✓ Enabled greater flexibility through innovative hybrid working.

There is much more that we have delivered and the ambition to continue at pace will carry on into the next administration. I am proud and humbled to have been the cabinet member for the last 4 years and have worked with some incredible officers during this time.

Cabinet Member:	Councillor James Mallinder, Cabinet Member with responsibility for the Environment
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The environment is a key principle of the strategic plan, we declared a climate emergency so this proved a strong mandate to develop a vision and deliver the same for our residents.

Over the last four years we made sure the environment is embedded into the decision making process. Decisions are made taking into account impact to residents, financial impact and, now, environmental impact. Through the adoption of the Climate Emergency Motion, one of our aims is to reduce the carbon footprint and we are working hard to reach carbon neutrality by 2030. However, I do add we should not lose sight that we are a dynamic, ambitious council so this will not be linear, as we adapt to the changing needs of our residents and invest in projects, we should only look at the carbon footprint through the prism of services we deliver. But such services should be provided with the minimum of carbon production. Our migration to HVO for our waste trucks clearly made a big impact on our carbon reduction.

East Suffolk produces less than 1 pct of the carbon footprint of Suffolk so I have placed much emphasis on outreach work, supporting the Greenprint forum and the tremendous work of Daniel Wareing.

Small Changes can make a big difference and I do believe, as we encourage our residents to do their bit, it will make a big difference. The Greenprint form has had many successful projects, anti-idling campaigns, yellow fish, bin the butt and its hugely successful 'Quiet Lanes' is a clear example of making meaningful change. Recently, we have introduced funding to allow grants to be awarded, supporting our communities to make that difference.

As your Cabinet Member for the Environment, I have made a deliberate decision to focus on our biodiversity and the concept of living with nature, not removing it. I am delighted to announce the launch of the 2023 'Pardon the weeds, we are feeding the bees campaign,' now with over 135 sites. This has been an anchor for our other campaigns, our recent East Suffolk Blooms - the gifting of spring bulbs in September for Spring 2024. Presentation of an oak tree to every Parish council for the Queen's Jubilee and reduction of glyphosate spraying by over 45 pct. As you have seen, I have tried to showcase how easy it is to introduce nature to our lives by making sure East Suffolk House in Melton is landscaped, taking into account nature. Our wildflower boarder at the main entrance, bird boxes, insect house and the planting of nectar rich flowers.

On behalf of this Council and largely through the Environment Task Group (ETG), we have written many letters lobbying our MP's , Minsters and, recently, Anglian Water. Much legislation is needed to protect our nature and although this is lacking, this hasn't stopped us from providing many strategies and guidance papers. With regards to Planning, we try and encourage developers to think about carbon and the impact to nature and I am particularly proud of our Air Quality Strategy.

I would like to thank Fiona Quinn, Head of Environmental Services and Port Health, recently retired Andrew Reynolds and the whole of the Environmental Protection Team, who work tirelessly supporting our residents and making sure that where there is legislation to protect our environment this is enforced. Environmental Protection has developed over the last four years into a strong department and, when appropriate, contributes to the planning decision process.

I have been the Council's representative at the Suffolk Waste Partnership (SWP) and the majority of that time I have been Chair. It has been a real pleasure to understand the waste disposal mechanism across Suffolk and to make sure we are as efficient as possible. Thanks go to Rob Cole as Principal Officer for this group, for his dedication and commitment. Although we are not able to make any fundamental changes to what and how we collect as we wait for government legislation, we constantly run campaigns. Week beginning the 6th March saw the launch of a new food waste campaign, encouraging all of us to think about reducing food waste.

Domestic bin collections continue to be efficiently provided but we have a number of pressure points, regarding the emptying of dog poo bins and pavement bins. This service is constantly reviewed and we make sure resources are allocated where needed. We have introduced a number of innovations and I hope these can be developed and expanded in the next administration eg curb side recycling bins, micro-chip bins and even investigations into different designed bins. Work continues and I am delighted to announce the introduction of a pilot scheme of 'bins' to collect small electrical items. These new bright pink bins, which can't be missed, are situated in Martlesham, Kesgrave and Saxmundham. Many thanks go to Kerry Blair, Rob Stammers, Kate McFarland and Laura Hack, who are dedicated and focused on our bin collections.

The Environment focus by this Council has only been successful due to the commitment of all officers at every level. And I need to thank every Head of Department and officer for focusing on this issue, in particular Andrew Jarvis, who has worked closely with me over the last four years. Without his guidance and support we wouldn't have achieved as much as we have and his articulation of my ideas has seen projects developed and delivered.

And our newest member of our Environmental Team , Paul Mackie, who has one of the most important roles at East Suffolk and, perhaps one of the most important tasks, of bringing all our environmental projects and focus together, so we can have an over view across all departments. We thank Paul for his hard work and focus.

Through my report today, I am trying to clearly illustrate by working together we can focus on the environment and deliver this focus. I have listened to Ward Member's and I have tried to answer any questions, even adapting some of your ideas and it has been such a pleasure to have served this Council. Through the commitment of the Council and, in particular, Councillor Gallant and his support, we have achieved a huge amount of which we should be proud.

Outside Bodies Representatives' Reports

East Suffolk Travellers Association (ESTA)	
Representative:	Councillor Alison Cackett
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Please see ESTA's Winter 2022/23 newsletter at Appendix A to this report.

Appendices

Appendices:	
Appendix A	ESTA News Issue 163 (Winter 2022/23)

Background reference papers:	
None.	

ESTA



NEWS

ISSUE 163
Winter 2022/23

President: Rod Lock, The Beehive, Hall Road, Oulton Broad, Lowestoft, NR32 3AW T: 01502-511715

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EAST SUFFOLK LINE – A RAILWAY FOR ALL PURPOSES

This is the title of an 18-page discussion paper being launched by ESTA on 6th December to mark the tenth anniversary of the inauguration of a passing loop at Beccles and introduction of an hourly service between Ipswich and Lowestoft.

This and other improvements (such as a fleet of new trains in 2019) led to an increase in passengers including daily or frequent commuters, day trippers, weekenders and holidaymakers, as well as people making personal, family or business visits or travelling to and from meetings and events.

Our discussion paper aims to stimulate debate among all decision-makers about the development of the line over the next decade and beyond, to cater for a growing population and to meet the challenges of climate change.

In particular we examine how to reduce end-to-end journey time; cater for increased population such as at Ipswich Garden Suburb and Saxmundham; better integration with other public transport services; enhanced ticketing and information; the case for some through services to and from London and as a general rule running through trains between Ipswich and Norwich via Lowestoft. Our paper also examines the challenge of freight and the differing needs of Felixstowe, Sizewell and Lowestoft.

We show how it should be possible, with the modern Stadler trains, to cover the Ipswich – Lowestoft journey in 75 minutes. Sometimes this is by “quick wins” by raising line speed on certain sections, and in other cases it would mean upgrading certain level crossings.

Our paper is available in print from our Chairman, and digitally, including on our website. We look forward to lively constructive debate in the coming months and to detailed research. That is why the executive summary at the end of the paper also forms a set of “recommendations for further research”

OVER A HUNDRED RESPONSES TO TRAIN AND BUS SURVEY

Thank you to everyone who completed one or more of our survey forms about a local public transport journey which they made during the month of October. Our President received 127 (almost the same number as last year) and has been busy analysing these. 81 of them report on train journeys and 46 on bus journeys. We shall issue a report after Christmas.

The report will then be sent to relevant politicians and operators, and of course to the news media, and be accessible via our website.

ESTA CHRISTMAS LUNCH takes place on December 10th at the Coach & Horses, Melton. Bookings closed on November 24th and we look forward to a relaxing and enjoyable event. Thank you especially to David Smith for organising it this year.

ESTA SPRING MEETING

This will take place on Saturday March 4th in St Mary’s Church, Halesworth, starting at 14.00. We shall welcome as guest speaker Mr Alan Neville, Customer & Community Engagement Manager of Greater Anglia. There will also be updates and discussion on bus issues.

St Mary’s is the Parish Church in the centre of Halesworth. You can see its tower ahead of you when you leave the railway station or the Saxons Way bus shelter. The church now hosts public events as well as services, rather than the church hall which is currently used for other purposes. Tea/coffee should be available. Toilets and car parking are nearby.

Halesworth’s pedestrianised Thoroughfare has an attractive range of independent shops, eating and drinking establishments.

Further meetings as planned as follows:

- Committee meeting – Wednesday January 11th in the evening.
- Annual General Meeting Saturday May 20th at Oulton Broad
- Summer buffet, preceded by short committee meeting – Wednesday July 12th
- Autumn meeting in Aldeburgh or Leiston – Saturday October 14th

Full details will be in our next ESTA NEWS and announced on our website.

BUS FOCUS AT OUR SAXMUNDHAM MEETING

The main topic at ESTA’s autumn meeting was on the future of local buses, when 40 people gathered in Saxmundham Market Hall. Two Suffolk County Councillors and a senior officer addressed the meeting and formed a panel to deal with comments and questions.

Councillor Richard Smith, Cabinet Member for Transport, said that the authority had “no spare funds” to support new bus services but would do its best to support what was already there. Bus patronage was still considerably below pre-pandemic levels.

The Council had produced a Bus Service Improvement Plan, as required by the Government, but – in common with 40 other authorities – had not received any extra funding to implement it.

His colleague, Councillor Alexander Nicoll, drew attention to the recent report on transport by Transport East, and to other possible sources of transport funding, and the work of the Public Transport Consortium of which he is National Chair.

Mr Simon Barnett explained the County Council’s transport remit and the Enhanced Partnership which he headed. The Council could not tell operators what to do but it could bid for Department for Transport funding for improvements.

Members raised many issues, including the transport of workers to the Sizewell C site if that project goes ahead. We were told that any extra bus services for the works would probably not be for the general public. SCC was pressing for the vehicles to be electric or hydrogen powered.

The question of delays to buses because of roadworks was also raised and there were calls for a stricter system when utility companies wanted to dig up roads. There was a call for a mechanism for funding highway improvements to help public transport.

On bus shelters, Mr Barnett said that these could be funded by anybody. The design could take a while. It had recently taken three years to install island refuges in the Woodbridge area. Campaigners were advised to seek funding for such measures through Neighbourhood Plans. Another potential source was County Councillors’ locality budgets.

One example of an improvement (and transport integration) was the recent installation of a cycle rack behind the bus shelter in Pettistree. On the other hand, Greater Anglia had banned National Express buses from the station forecourt at Ipswich.

Thanks were expressed to Messrs Smith, Nicoll and Barnett for giving up their Saturday afternoon to take part in our meeting, and we look forward to ongoing dialogue with them and their colleagues.

BorderBus service 522 was revised in September and now has only one daily trip to Peasenhall (now running as 522A) but instead more to Halesworth, where it terminates by the Water Tower, also passing over Norwich Rd bridge, near the station. Kelsale, Darsham and Bramfield now also benefit from this revised service, Monday to Friday. Information: www.Border-Bus.co.uk

BY BUS TO MARTHAM?

This article by Trevor Garrod first appeared in the newsletter of our sister organisation, the East Norfolk Transport Users’ Association (www.entua.org.uk). It is slightly abridged.

At Lowestoft bus station we constantly see double decker buses with “Martham” on the front.

To my shame, I had never been to this Norfolk village by bus – indeed, I only once recall, as a teenager, cycling through it. My only other connection with Martham was that my maternal grandmother had been born there in 1895.

It was time to put this matter right and so on a wet autumn Sunday I caught the hourly “Coastal Clipper” (services 1 and 1A) for a journey of just under 20 miles. On weekdays the service is half hourly.

I was very familiar with the journey through Corton, Hopton and Gorleston; noted progress on the Great Yarmouth Third Crossing (one span of which is now in position over Southtown Road) but the trip north along the straight wide Caister Road is one I make less often.

Caister, Ormesby and Hemsby are villages which have expanded over the past 50 years but which still have some areas of open country in between, and are fortunate to have a frequent bus service.

Winterton, dominated by its tall slim church tower (like so many on our east coast a landmark for mariners) is a peaceful village with views across the Broads National Park to the north. The country road turns inland towards Martham, a substantial village of 3,500 with picturesque cottages around a large green and, in the background, a church tower with a small steeple.

Martham has a number of shops, a cafe and a cosy pub, the King’s Arms, serving Adnams (among other ales) and home-cooked meals. There is a large wooden bus shelter (with no seats) and next to it are bus stop flags but no timetable for the Coastal Clipper and only a generic Norfolk County Council notice and a timetable for the local Our Bus service.

First Eastern Counties publishes an attractive timetable for services 1/1A (both of which terminate in Martham) also giving ideas for exploring the area. Obviously, these buses are important for commuters into Great Yarmouth and for holidaymakers, but in good weather they also tempt us to explore coast and countryside. The timetable leaflet tempts you to take a walk across the fields to Caister Castle or along the coast path and famous Winterton Dunes.

Ideas for a spring or summer day?

Note: “Coastal Clipper” is also the brand name covering the service 99 from Southwold to Lowestoft and you can buy a Coastal Zone ticket covering all of the 99 and 1/1A routes.

If coming to Lowestoft by train, you normally have a 5-minute walk to the bus station if going towards Great Yarmouth.

NORWICH – LIVERPOOL TRAINS

From Lowestoft, Beccles and Halesworth it is often handy to use the Norwich – Liverpool service to reach the Midlands and the North. It is also important for visitors from those regions who want to travel by rail to this part of Suffolk.

Over a number of years there have been mutterings about cutting the service in two. We therefore welcome the news, sent to us by the Peterborough & Norwich Rail Users’ Group, that the through Norwich – Liverpool service (via Peterborough, Nottingham, Sheffield and Manchester) will be retained until at least December 2023. The Franchising Director’s proposal to cut these popular trains is “off the table for the moment.”

Let’s keep up the pressure to ensure that it stays off the table!

RENEWING TRACK IN THE WOODBRIDGE AREA

Network Rail states that some of the track in the Woodbridge area is 100 years old. It needs renewing and this will be done over 8 weekends between December 10th and February 12th. A further period of engineering work will take place at the end of March.

Each time there will be replacement buses between Ipswich and Saxmundham.

ESTA's Chairman was interviewed about this by BBC Radio Suffolk on November 16th. He said that investment to renew the line was welcome, in principle, as it should lead to a smoother ride and better line speeds. In the meantime, the replacement buses must be well organised to minimise disruption and delay.

WESTERFIELD STATION AND IPSWICH GARDEN VILLAGE

In ESTA NEWS 162 we referred to start of work on this housing development – initially in the part furthest from Westerfield station.

Our paper EAST SUFFOLK LINE – A RAILWAY FOR ALL PURPOSES put the case for steps to improve the useability of the service” at Westerfield station and for a footpath and cycle route between the new houses and the station as soon as possible.

Our committee member Nigel Wall, who lives in north Ipswich, has had correspondence with his MP, Tom Hunt, on these issues.

In our discussion paper A RAILWAY FOR ALL PURPOSES we also moot the idea of a bus service from Dales Estate via Ipswich Garden Village and Westerfield station to Ipswich Hospital, which could open up a number of journey opportunities.

LOWESTOFT STATION BUILDING: In the last ESTA NEWS we also reported on the proposals unveiled in late August for an extension to the currently disused building at the eastern end of the station concourse. ESTA responded to the public consultation. On contacting East Suffolk Council again in October we were told that they had received many comments and were “still reviewing” them all.

25 YEARS OF TOURISM INITIATIVES IN HALESWORTH

ESTA has worked with the Halesworth Tourism Group (HTG) for several years and so I was pleased to attend their anniversary gathering on November 9th.

Members of the Group and representatives of local councils and businesses filled the Stables at the historic Angel Hotel to hear about the start of initiatives to promote the town in 1997 – initially with financial support from the EU and local authorities; and the formal establishment of Halesworth Tourism Group in 2008.

HTG has published or contributed to many leaflets and brochures over the years, including part funding of the ESTA “Discover the Blyth Valley” leaflet.

I came away confident that efforts to attract visitors to Halesworth – one of four attractive market towns along our line - will continue over the next 25 years.

PROGRESS BY LITTLE RAILWAYS

In ESTA NEWS 149 and 151 we reported on developments on heritage lines in our area. These have the potential to bring in visitors, and to do so by public transport.

Leiston Works Railway

Members have been at work extending the track almost to the junction with Buller Road. Their long-term goal is to link with the currently freight-only branch line at Leiston station. Extending track across the road will be a challenge – but it has been done, for example, at Sheringham.

Information: www.lwr.org

Halesworth to Southwold Narrow Gauge Railway Society

The Members' Meeting on November 12th in Blythburgh Village Hall gave some 25 attendees the chance to see the work that has been done in rebuilding Blythburgh station and refurbishing the former goods shed. You can also get a good view from the A12, including from the 99A bus.

Information: www.halesworthtosouthwoldrailway.co.uk

Southwold Railway Trust

You can catch a bus to Southwold, alight at the Blyth Hotel and walk down Blyth Road to the Steamworks Site, alongside the former Southwold Railway track. There is some interesting narrow gauge rolling stock, including now a replica steam locomotive. Information about membership and next year's opening dates: www.southwoldrailway.co.uk

East Anglia Transport Museum

The extension of the 2-ft gauge East Suffolk Light Railway has now been in use for two seasons and 2022 has been a particularly busy year. Visitors can also ride on a variety of trams and trolleybuses and view many static exhibits.

On December 3rd/4th, 10th/11th and 17th/18th the museum will be open for its "Ride the Lights" seasonal celebrations and again on New Year's Day; after which it will reopen in the spring.

You can get there on bus services X2, X21, X22 and 146

Information: www.eatransportmuseum.co.uk

ESTA PEOPLE

Thank you to our members Alan Williams, Louise Gooch, Kevin Hilson, John and Sue Gordon for erecting, looking after and dismantling the ESTA stall at the East Anglia Transport Museum Trolleybus event at the end of September.

Thank you for the members of our working group who compiled our discussion paper A RAILWAY FOR ALL PURPOSES: Stephen Poole, Nigel Wall, John Thompson, Kevin Hilson, Chris Green, Bob Webb and Simon Hope.

Sandra Gage has stood down from the ESTA committee because of pressure of other commitments. Her local government experience has been very valuable to the association and she was the moving force before the creation of our new logo which – unlike the old one – makes it clear that ESTA is concerned with users of both trains and buses.

The ESTA 100 Club winners were drawn at our October 15th meeting.

They are: 1st – Susan & James Gibbons; 2nd Eve Hostettler; 3rd Robin Price; 4th Mike Hill and 5th Alison Cackett.

The next draw will be at our Christmas lunch on December 10th.

You can join in the 100 Club, provided that you are an ESTA member, by sending a cheque (payable to ESTA) for £12 to our Secretary. There are 4 draws per year.

MEETING PEOPLE

On October 19th, Trevor Garrod, Alan Williams, Kevin Hilson and John Thompson had a meeting with Alan Neville, Greater Anglia's Customer & Community Engagement Manager for a wide-ranging discussion. We covered issues such as timetables, ticketing, bicycles on trains, on-train announcements and instances of anti-social behaviour.

We also updated Mr Neville on the work at Ipswich Garden Village and he recommended officers at Network Rail and Suffolk County Council who could also be involved. Station car parking, especially at Beccles, was also discussed.

On November 12th Trevor Garrod met Peter Aldous MP at his constituency surgery to discuss both rail and bus issues – some of which are covered elsewhere in this ESTA NEWS.

FEEDBACK ON YOUR TRAIN AND BUS JOURNEYS

Comments on experiences during specific local journeys – apart from those made in our October survey – can also be given on the Feedback page of the ESTA website. www.eastsuffolktravel.org.uk

IT'S HAPPENING ON LOWESTOFT STATION

On Saturday December 17th the Wherry Lines Community Rail Partnership will hold a Christmas Fayre in the Parcels Office Public Exhibition Space and nearby concourse. As well as all the stalls, there will be music and, in the latter part of the afternoon, a carol concert.

The station shop and visitor information point is normally open from 10.00 till 15.00 or till 13.00 on Thursdays. People who come inside are often surprised at the range of goods on offer.

MEANWHILE AT BECCLES, WICKHAM MARKET (Campsea Ashe), MELTON AND WOODBRIDGE there are also refreshments. Indeed, about the only station on our line with no cafe or pub within easy reach is Brampton.

As this December marks the 10th anniversary of the opening of Beccles loop, here are two photos recently taken by John Thompson. They show the southbound platform which was refurbished in 2012 after nearly three decades out of use.



Best wishes to all our members for Christmas and the New Year.

Material for our spring edition should reach Trevor Garrod by mid-February.