Arun District Council

REPORT TO:	**Environment Committee – 14th November 2024**
SUBJECT:	**Coastal Engineers and Flood Prevention Annual Service Report**
LEAD OFFICER:	**Karl McLaughlin – Flooding and Coastal Engineering Manager** **Joe Russell-Wells – Group Head of Environment and Climate Change**
LEAD MEMBER:	**Councillor Sue Wallsgrove**
WARDS:	**All Wards**

CORPORATE PRIORITY / POLICY CONTEXT / CORPORATE VISION:

This report supports the following areas of the corporate vision:

- Delivering the right homes in the right places
- Supporting our environment to support us

This report will share with members the activities Arun takes across it's coastline and the strategic framework in which this is undertaken.

DIRECTORATE POLICY CONTEXT:

As a Local Authority who borders the coastline it is imperative that we manage coastal erosion risk and communicate where challenges remain. The position and condition of the coastline is instrumental to the economic health and wellbeing of Arun, and our residents.

The framework laid out in the report explains the strategic direction for meeting these objectives.

FINANCIAL SUMMARY:

Revenue works described in this report are funded though the annual coast protection budget.

1 PURPOSE OF REPORT

1.1 This report is to provide Members with an update on the management activities that Arun District Council undertakes on its coastline. It will provide an update on the Capital Investment Programme and demonstrate how projects link with wider strategic documents.

2 RECOMMENDATIONS

2.1 It is recommended that the Committee notes the content of this report.

3 EXECUTIVE SUMMARY

3.1 This report will primarily focus on Coast Protection works and the Long - Term investment strategy for the coastline. It sets out the framework for managing the coastline by highlighting key strategic documents and how these documents inform investment decision at a scheme level.

3.2 The report will not go into detail on the Drainage arm of the department as this has ben covered extensively in the Arun Flood Forum. However, it is anticipated that at next year's annual update, Members will be provided with a dashboard style report to measure performance.

4 DETAIL (Coast Protection)

Background

4.1 As a Local Authority whose area adjoins the sea, we work in close collaboration with our partners to manage Flood and Coastal Erosion Risk. There is no single body responsible for managing flood and / or erosion risk in England and the framework below lays out how this works in practice in Arun.

4.2 Arun District Council, The Environment Agency (EA) and West Sussex County Council are all Risk Management Authorities under the Flood and Water Management Act 2010. This gives us flexibility to form partnerships and act on behalf of one another in certain circumstances.

4.3 In Arun, the Environment Agency play a key role in managing part of coastline. In our partnership, they manage areas at risk of Sea Flooding. Conversely, as the Coast Protection Authority, Arun manages areas at risk of Coastal Erosion.

4.4 Risk of Erosion (Coast Protection) is where the land behind the beach is higher than sea level and thus property would fall into the sea following erosion.

Risk of Sea Flooding (Sea Defence) is where the land behind the beach is lower than sea level and thus property would flood. **Appendix A** provides a diagram as a visual aid.

Strategic Direction

4.5 The work Arun District Council carries out on our coastline can be broadly separated into 2 different categories – Capital works and Revenue works.

4.6 Both are informed by the strategic direction as laid out below;

4.7 Shoreline Management Plans (SMPs) are non-statutory policy documents that set the high-level planned approach to managing Flood and Coastal Erosion Risk over a 100-year period.

4.8 Coastal Defence Strategies (CDS) are more focused documents that look at an area in detail to determine how the agreed management approach could be delivered. They suggest what interventions may look like and when they may need to take place. They also explore the economics in further detail to inform the Capital Investment Programme.

4.9 The current Capital Investment Programme and funding strategy is known as Flood and Coastal Erosion Risk Management Grant in Aid (FCERM GiA). The programme is the mechanism for evaluating the detail of schemes and determining how much central government funding they are eligible for. Arun District Council currently has 7 pipeline projects on the programme, these are explained later in the report. The programme also funds studies and investigations which can be used to inform scheme details but these costs must be accounted for in the whole life costs of schemes coming forward.

Delivery

4.10 Arun District Council is responsible for numerous defences across the district. Our defences comprise of a sea walls, timber breastworks, rock breakwaters, rock revetments and approximately 285 groynes. We conduct detailed inspections biannually to inform our Revenue repair programme and the Capital Investment Programme.

4.11 Improvements to our defences are categorised as either Revenue works or Capital works. Revenue works are funded directly by the council and typically consist of reactive repairs. Our budget is relatively modest and requires us to work on a priority basis, focusing in on areas where the greatest benefit can be achieved.

4.12 Capital works are those which require significant investment and are planned years in advance. Capital works are primarily funded by Central Government Grants which are then supported at a local level with Partnership Funding. The Capital Investment Programme is described in more detail below.

Capital Investment Programme (FCERM GiA Programme)

4.13 Defra has overall national responsibility for policy on flood and coastal erosion risk management (FCERM) in England.

4.14 The department provides funding for FCERM schemes through grants to the Environment Agency. The Agency then administer funding on their behalf though a nationally consistent process.

4.15 The current central government funding mechanism is known as Flood and Coastal Erosion Risk Management Grant in Aid, FCERM GiA. The amount of FCERM GIA funding a project is eligible for depends on the benefits and the

outcomes of your project (Cost-benefit analysis). Typically, most projects will not be eligible for 100% government funding and thus an element of 'Partnership Funding' will be required.

4.16 If or when any Partnership Funding might be required those directly benefitting from the defence are likely to be approached. I.e. those likely to be at risk from flooding or erosion within the lifetime of the scheme. Anyone who benefits from the scheme can be a partner and those likely to be approached include;

- Local Communities
- Businesses
- Developers
- Local Authorities
- Infrastructure providers

4.17 The investment programme is not mandated by government and instead is informed at a local level by Risk Management Authorities. In Arun, the programme is informed by a host of strategic and technical material but for the purpose of strategic inception the main documents include; the Shoreline Management Plan, the Coastal Defence Strategies, our inspection data, the Coastal Monitoring Programme data, the National Flood Risk Assessment (NaFRA) and the National Coastal Erosion Risk Mapping.

4.18 Our current programme consists of 7 pipeline projects which have been assessed as both strategically and technically viable. These are listed in the table below;

National Project Number	**Project Name**
SOC501E/000A/077A	Ferring, Sea Lane - Rock Toe and Alignment Groyne
SOC500E/000A/091A	Littlehampton East Beach Groyne Replacement - Groyne Phase 12
SOC501E/000A/055A	Arun to Pagham Beach Management Plan Phase 2
SOS004C/003A/008A	Aldwick Groyne Replacement Scheme Ph 10 & 11
SOC501E/000A/065A	Pagham Beach Erosion Management Option Phase 2
SOS004C/003A/022A	Pagham Beach Erosion Management Option
SOS004C/003A/010A	Arun to Pagham Beach Management Plan

4.19 The pipeline programme is subject to change as new information becomes available and Outline Business Cases are completed. At Arun, we adopt a rigorous approach to ratifying projects before including them on the pipeline. The reason for adopting such an approach is that we feel it necessary to identify partnership funding requirements, with a fairly high degree of certainty, well in

advance of project implementation, enabling Arun District Council to budget accordingly.

4.20 Further information on the pipeline projects can be found in **Appendix C**.

Revenue works

4.21 Coast Protection revenue works are carried out by our in-house field team for a total of approximately 11 weeks per calendar. The works undertaken by the team is informed by a number of sources but primarily these are; the biannual surveys conducted by the Coastal Engineers and the Coastal Monitoring Programme outputs. A link to the Coastal Monitoring Programme output report is provided in the background documents.

4.22 Resources are such that we must prioritise our work focusing on areas with greatest benefit in terms of risk. This means that some groynes will be managed in such a way that deterioration is clearly visible, but this should not necessarily be alarming. The function of the groynes is to manage the sediment in the littoral drift and deterioration of a groyne, or series of groynes, does not necessarily affect the overall beach volume, particularly if the beach is at, or above, design level – Design level is the beach volume for which the groyne or groyne field was designed to retain.

4.23 Beyond simple patch and repair works, further investment in structures is sometimes necessary to realise the remaining benefit in the 'spine' of an asset. This usually occurs where a structure that is coming to the end of its design life has performed markedly better than expected. We opt to replace key components by making use of our in-house skilled operatives that would otherwise be prohibitively expensive. The department had been utilising this methodology for a number of years and it has proven to be extremely successful. An example showing this approach is attached in **Appendix D**.

Regional Coastal Monitoring Programme outputs

4.24 The Regional Monitoring Project provides volumetric and percentage changes of the beaches. The programme provides a consistent regional approach to coastal process monitoring, providing information of the development of strategic shoreline management plans, coastal defence strategies and operational management of coastal protection and flood defence.

4.25 We are fortunate that we have a well-established dataset so where changes do occur, we can see if they are within parameters of our existing dataset. However, the figures obtained by programme can be misleading, particularly if taken out of context, and need to be interpreted with wider inputs mind, such as hydrological, metrological and astronomical conditions. With this in mind, a commentary is given below detailing the most recent changes (Spring '22 – Spring '23).

Ferring – Rustington: A balance of erosion and accretion with a small overall gain for the unit.

Rustington – Littlehampton: A small overall loss for the unit. The most notable change pertains to the lower foreshore between Banjo Road, Littlehampton and the Lion's Den Play area. This is not an area of concern as losses are being supplemented with shingle recycling from West Beach.

Climping: The unit is dominated by erosion, notably in the western section. The eastern portion of the unit shows some accretion but the unit as a whole is at an overall loss.

Elmer: A small overall loss for the unit. Patches of accretion and erosion in the western half of the unit with the eastern half of the unit dominated by erosion.

Bognor Regis (Middleton-on-Sea – Aldwick): An overall gain for the unit. Pockets of minor erosion at areas which have been historically difficult to manage.

Aldwick - Pagham: A very small loss for the unit overall. This section of coastline is particularly difficult to report on as a whole due to the dynamicity and interaction of the coastal processes. For this reason I will break this section into sub units. Dark Lane to Marquis way has had a very small amount of erosion. Marquis way to Viscount drive has experienced a balance of erosion and accretion with an overall net gain. East Front Road moving west has minor gains in the East and more pronounced erosion in the west, an overall loss of material for this section. East Front Road remains a focus for the team in the short – medium term although we have seen periods of natural accretion which is encouraging.

<u>Pagham Beach</u>

4.26 Pagham beach is one of, if not the most, dynamic piece of coastline in the Sussex Bay. The interaction of the sediment, harbour and control structures has necessitated an Adaptive Management approach whereby engineering solutions are appraised with respect to a given scenario.

4.27 Following the natural breach in 2016 and the intervention by the community to cut the spit in 2021 focus has shifted away from West Front Road. The team are currently engaged in monitoring the changes at East Front Road conducting shingle recycling schemes as a when they become necessary. From an engineering and environmental perspective this is much simpler to manage provided the necessary environmental permits can be obtained.

4.28 While the focus of erosion or flood risk is typically limited at any one time, the situation for Pagham Beach remains questionable from a financial, environmental and technical perspective. It was therefore proposed that a study shall be commissioned investigating the practicalities and implementations of introducing a Coastal Change Management Area (CCMA) at Pagham. Due to changes in legislation and resource limitations this work had to temporarily be placed on hold. However, this piece of work has made its way back onto planning policies forward programme and has been identified as a priority for the department moving forward.

Changes to Flood and Coastal Erosion Risk Information

4.29 The Environment Agency are publishing new National Risk Information for Flooding and Coastal Erosion over the coming months. The information will update the existing datasets to contain future scenarios which account for climate change.

- **December 2024**: A 'National assessment of flood and coastal erosion risk in England 2024' report - this report will use our new national flood risk assessment (NaFRA2) data and our updated National Coastal Erosion Risk Map (NCERM).

- **Early 2025**: NaFRA2 'Risk of flooding from rivers and sea' and 'Risk of flooding from surface water' data on 'Check your long-term flood risk' and available on data.gov.uk

- **Early 2025**: an updated NCERM on Check coastal erosion risk for an area in England, Shoreline Management Plan Explorer and available on data.gov.uk

- **Spring 2025**: NaFRA2 'Flood zone' data on 'Flood map for planning' and available on data.gov.uk

Shoreline Management Plan Explorer

4.30 Nationally a piece of work is being undertaken to refresh and digitise the Shoreline Management Plans (SMPs). As part of this piece of work the EA have worked closely with the coastal groups to update the action plans, improve the description of management approaches, better describe the policy intent and make SMP's easier to access through the online interactive tool - https://environment.data.gov.uk/shoreline-planning

4.31 The tool currently contains 'dummy' information as this is due to be updated by our coastal group by the end of this calendar year (Dec 2024). The finished product will be launched by the Agency in early 2025.

5 DETAIL (Land Drainage, Sustainable Urban Drainage SuDS)

5.1 This report will not examine the details of the Drainage arm of the department as these have been covered by the Flood Forum updates.

5.2 It is anticipated that at next year's annual update, members will be provided with a dashboard style report to measure the performance of the department.

6 DETAIL (General / Municipal Engineering)

6.1 The team are often involved with other areas of work supporting Service Area's to meet their statutory requirements and deliver services at a reduced cost. Such projects make use of the teams council function knowledge, civil engineering, management and supervisory skills. Recent examples include:

- Littlehampton Levelling up Project
- Place St. Maur upgrade
- Alexandra theatre Project
- Crossing improvements, Bognor Regis
- Angmering Sports Hub Project
- Littlehampton Harbour Board, West Works emergency repair
- Bognor Regis Beach Access Improvements

7 CONSULTATION

7.1 No further consultation has taken place.

8 OPTIONS / ALTERNATIVES CONSIDERED

8.1 None.

9 COMMENTS BY THE GROUP HEAD OF FINANCE/SECTION 151 OFFICER

9.1 No direct impact on finance at this stage. As capital projects develop and is partnership funding identified, the financial requirements and impacts will be brought to the relevant Committee.

10 RISK ASSESSMENT CONSIDERATIONS

10.1 None to date.

11 COMMENTS OF THE GROUP HEAD OF LAW AND GOVERNANCE & MONITORING OFFICER

11.1 Arun District Council is a Coast Protection Authority (CPA) under Section 1 of the Coast Protection Act 1949. By Section 2A of that Act a Coast Protection Authority is also a Coastal Erosion Risk Management Authority.

11.2 By Section 4 of the Coast Protection Act 1949, the Council as a CPA shall have the power to carry out such coast protection work whether within or outside of its area, as may appear to the CPA necessary or expedient for the protection of any land in its area providing that; (a) the work is desirable having regard to the national flood and coastal erosion risk management strategies; and (b) the purpose of the work is to manage coastal erosion risk within the meaning of Part 1 of the Flood and Water Management Act 2010.

11.3 Section 111 of the Local Government Act 1972, provides the power to the Council to do anything that is calculated to facilitate, or which is conducive or incidental to, the discharge of any of their functions.

11.4 Where the Council obtains grant funding for any of its coast protection works, the Council must ensure that the funding is spent in accordance with the grant funding terms and conditions.

12 HUMAN RESOURCES IMPACT

12.1 The Service Manager is in the process of rebuilding the team after a sustained period of under resource. This has resulted in a re-shuffle of the department and vacancies being advertised. Recruiting to the Senior Coastal Engineer position presents a challenge due to the specialist nature of the role and demands placed on it. If unsuccessful, market supplements may become necessary and / or junior employees employed with future development in mind. The current Service Manager previously held the position of Senior Coastal Engineer so some resilience remains in the team.

13 HEALTH & SAFETY IMPACT

13.1 None.

14 PROPERTY & ESTATES IMPACT

14.1 None to date.

15 EQUALITIES IMPACT ASSESSMENT (EIA) / SOCIAL VALUE

15.1 N/A. Capital schemes are assessed on a case-by-case basis and revenue investment is guided by risk.

16 CLIMATE CHANGE & ENVIRONMENTAL IMPACT/SOCIAL VALUE

16.1 To be considered on a scheme-by-scheme basis. The department works very closely with central government as new guidance and information becomes available

17 CRIME AND DISORDER REDUCTION IMPACT

17.1 Not applicable.

18 HUMAN RIGHTS IMPACT

18.1 To be considered as actions from the Forum are proposed and agreed.

19 FREEDOM OF INFORMATION / DATA PROTECTION CONSIDERATIONS

19.1 Sensitive data will be handled in accordance with the GDPR.

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BACKGROUND DOCUMENTS*:*

download.cfm (arun.gov.uk) Coast Protection Local Land Charges Leaflet

https://coastalmonitoring.org/reports/ - Coastal Monitoring reports,
Open the “Southeast” tab followed by “Annual Survey Reports” and “Beachy Head to Selsey Bill”.

APPENDICES

Appendix A – Diagram showing Coastal Flooding / Erosion

Appendix B – Local Land Changes Leaflet

Appendix C – FCERM Pipeline project programme

Appendix D – Illustration of enhanced revenue works