Edinburgh Coastal Change Adaptation Plan
Asset Management and Land Use Planning

April '25 to April '26 | £115,000 | The City of Edinburgh Council

Historic Joppa Salt Pans and rocky foreshore. ©CEC Flood Management (2024)

Overview:

The project will consider the reliance on historic coastal protection assets, the uncertainty around condition and performance, and the associated implications on CCAPs and Land Use Planning.

We will initiate development of a GIS-based asset management system and how this can be used in the creation and implementation of the CCAP.

The project will also look at the link between coastal assets, the uncertainty around standard of protection and planning processes. As part of this we will carry out specific analysis of wave overtopping at Seafield and Portobello.

What we are hoping to learn:

We will learn how to better manage complex interactions between historical coastal defence assets, potential vulnerabilities, and how they link with the CCAP process.

We will also improve the tools, links, and communication methods between coastal managers and planning teams to ensure an effective and implementable CCAP, which will better inform future planning along the coast.

"Edinburgh's diverse coastline brings challenges for asset management and development, particularly due to the different forms, ages and conditions of protection assets. This work will aid understanding of their role in future adaptation and development along the coast".

Stephen Knox, The City of Edinburgh Council

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Edinburgh Coastal Change Adaptation Plan (CCAP) Asset Management and Land Use Planning

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Cramond Foreshore. ©CEC Flood Management (2025)

Overview:

Edinburgh’s coastline features ageing coastal structures, some of which are nearing the end of their design life and serve multiple roles beyond their original purpose. Limited data on their condition, their interaction with land use planning and the lack of a comprehensive coastal asset management system make planning and flood risk management challenging. This case study will explore practical solutions to better inform asset management decisions through data collection and analysis, development of an asset management system and identifying opportunities for improved collaboration between planners and CCAPs.

What we have done so far:

- We have collected data on breakwaters in Leith and Granton Harbours. The aim is to better understand the residual life and how this could impact the decisions being made in the CCAP and planning processes.
- A wave overtopping model has been developed for the Seafield to Joppa frontage which has been used in informing the Seafield Master Plan. This has highlighted the complexities in assessing flood risk for coastal development.
- We have developed a GIS-based coastal asset database. This includes a foundational data structure, data management processes and an integrated asset inspection tool to support informed decision-making and asset management.
- We have identified a potential gap in the CCAP process of how and when to integrate planning teams and processes. We are consulting The City of Edinburgh Council’s planners and reviewing other CCAPs to identify areas for improvement.

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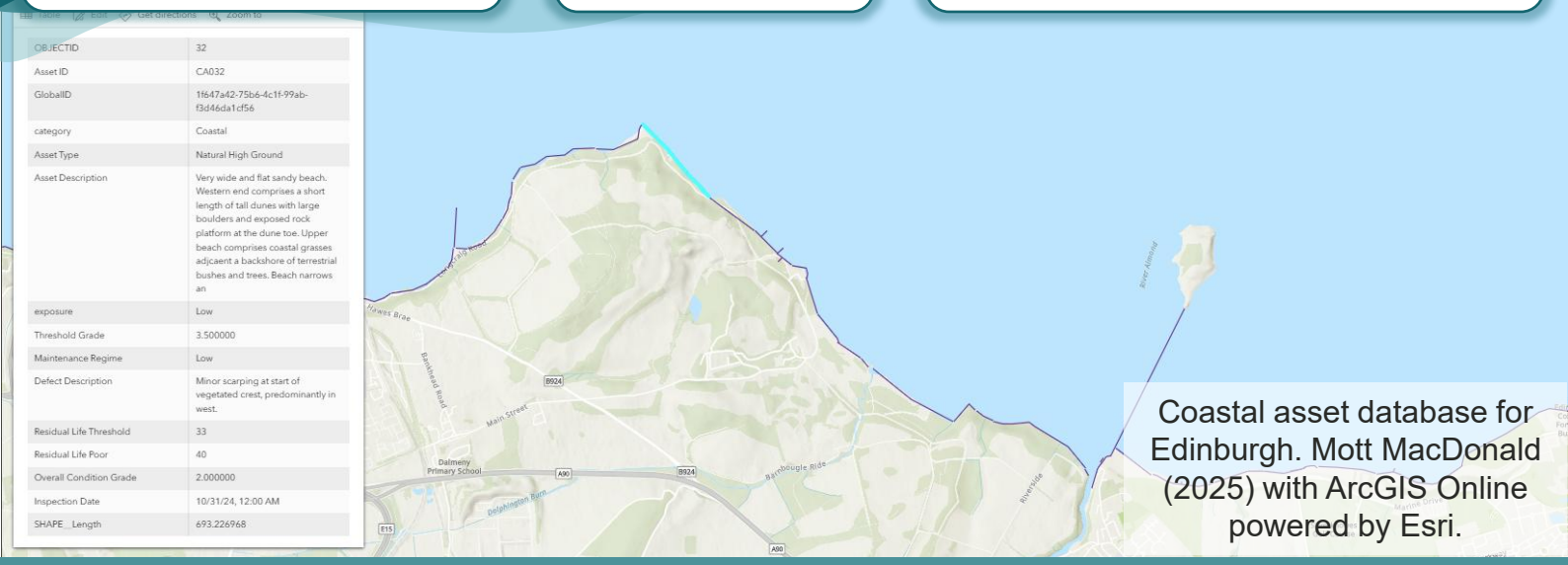

Coastal asset database for Edinburgh. Mott MacDonald (2025) with ArcGIS Online powered by Esri.

What we have learnt so far:

- Obtaining third-party data can be challenging and requires early engagement and realistic time estimates. A balanced approach is needed when deciding between using existing data and commissioning expensive new surveys.
- Detailed wave overtopping analysis for the Seafield area highlighted that the proposed masterplan layout is conservative, which was reassuring given it was based on current guidance for sea-level rise. Outcomes from the study will inform the latter stages of the Seafield Masterplan and the CCAP (along the entire study frontage).
- We established the foundation for a GIS-based asset system to enable structured and consistent management of inventory and condition data. Further automation and integration with other asset databases (fluvial assets) would enhance efficiency and usage.
- Collaboration through working groups adds significant value to CCAP development and is an effective way to involve council teams in the process.

What we are hoping to still learn:

- Further collection and review of historic data to understand the status, condition and flood risk.
- The GIS-based asset management system is designed for easy application and reproduction elsewhere, but we hope to understand how much customisation is required for other asset types. Further work to enable its use as an ongoing asset management tool is required.
- Best practice for integrating the CCAP into planning processes and the links with Local Development Plans.

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“Our efforts to date have focused on building a robust knowledge base and understanding the complexities of coastal asset management and planning. Looking ahead, we are keen to strengthen asset management and planning processes by fostering collaboration. A key step will be establishing a dedicated working group within the Council to drive practical solutions and ensure long-term resilience.”

Stephen Knox, The City of Edinburgh Council

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