



LGA Coastal Special Interest Group & Coastal Group Network

Coastal Landfill Questionnaire Report

November 2022





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Author	Amy Adams, Coastal Engineer, Coastal Partners Mark Stratton, Coastal Partners, Coastal Group Network & LGA Coastal SIG Coastal Landfill Officer Lead
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Approved by	Rebecca Lofts – LGA Coastal SIG Lead Officer Bryan Curtis – Coastal Group Network Chair of Chairs



Foreword

For many years now the Local Government Association Coastal Special Interest Group (LGA Coastal SIG) and Coastal Group Network have worked together in partnership, each bringing their own particular strengths and expertise to raise the profile of issues impacting on our coastline. In this instance the “Call to arms” for coastal landfill issues was enough to bring together not only the partnership of the LGA Coastal SIG and the Coastal Group Network but the wider coastal practitioners from the Local Authorities around the country. As Local Authority staff and resources, particularly at the coast, become increasingly pressurised it is ever more important that we use the shared resources that we have to maximum effect. This is such a situation and we are proud to have delivered this and used the small team that we have to best effect.

From the mid 1990’s and the early days of shoreline management planning the problems with coastal landfill sites and the risk to them from either flooding or erosion have been widely acknowledged. Despite this we still do not have a sustainable way of dealing with these sites as they face the increasing risk of flooding and/or erosion. The impact of climate change and rising sea levels is now making this worse and there is no national plan or mechanism for dealing with it on the horizon.

We are championing to raise the profile of coastal landfill and bring together partners with the aim to collaborative working to better understand the issue and to increase awareness with the hope that we can ultimately influence a positive change in national policy on how we tackle these sites. This is a national problem that needs a national solution.

Over the Summer of 2022, this collaborative partnership ran a survey to glean information around this issue and the feedback received has been used to develop this Report. The Chairs of the LGA SIG and Coastal Group Network thank all those who participated in the survey and to the dedicated officers who delivered this piece of work.

We hope that you find this Report of interest and that ultimately, we can all use it to bring about change and a positive sustainable national plan for resolving the threat of coastal landfill sites across our coastline.

Signed

*Cllr Ernest Gibson,
Chair of the LGA Coastal SIG*

*Bryan Curtis Chair of the Coastal
Group Network*



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1 Purpose of this document

The Local Government Association Coastal Special Interest Group (LGA Coastal SIG) and Coastal Group Network (CGN) are leading a Call to Arms around the topic of coastal landfill.

This report seeks to provide context and summarise the content and results of the LGA Coastal SIG and CGN Coastal Landfill Questionnaire carried out between 5th July and 2nd August 2022.

Input was sought from Local Authorities (LAs) who own, manage or are involved in the management of coastal landfill sites (including management of the shoreline, drainage, risks of flooding or erosion). It is hoped that, by providing answers to the questions in this questionnaire, LAs can help to generate a better evidence base around the nature of the issues being faced.

Many aspects of the direction for future coastal landfill management are still untested and could be influenced by practical information provided by LAs.

The intention is to use the evidence gathered to develop a Coastal Group Network and LGA Coastal SIG position statement to bring attention and funding to this pressing issue. The outputs will be shared with Defra to help inform their policy work going forwards.

2 Context

Landfill has been the foundation of waste management for over a century in the UK. The legacy of controlled tipping at the coast since the 1920's resulting from the perceived low value of the natural environment at that time, alongside the lack of stringent regulation we see now. Using the coastal zone was therefore seen as a win/win scenario, where our waste could be disposed of and land could be reclaimed for an alternative use.

It has been estimated that there are approximately 1200-1400 historic coastal landfill sites in the UK which are currently at risk of coastal erosion and flooding¹.

Sadly, the legacy left by rapid filling and closure of landfill sites, especially in areas of flood or erosion risk, is perhaps one of the most under-appreciated but profound environmental issues of our time. Society faces technical challenges and moral accountability, but it is an issue accompanied by limited recognition and funding. We also have very little understanding of the risks posed by these sites as data is often unspecific.

The potential volume of waste and associated pollutants that could be released into the marine environment from these sites is vast, particularly in the case of vulnerable former landfill where existing coastal defences are aging or, worse still, were never put in place. Whilst the implications of flooding and erosion on these sites over the next century are difficult to predict,

¹ Brand, J & Spencer, K. (2019) 'Potential contamination of the coastal zone by eroding historic landfills', *Marine Pollution Bulletin*, Volume 146, pp. 282-291. <https://doi.org/10.1016/j.marpolbul.2019.06.017>.



inevitably with climate change and sea level rise these risks (and consequent release of landfill) can be expected to increase significantly without intervention.

At present there is limited knowledge of what is within these coastal landfill sites. There is also minimal understanding of the potential consequences to people and the environment if the contents are left to leach or erode. Many landfill sites are also likely to contain early plastics which will persist and pollute the oceans for decades to come.

There is a need for a long-term plan that is technically feasible and affordable. The Shoreline Management Plans form the basis of sustainable coastal development. However, at present, as far as protection of coastal landfill is concerned, they are aspirational as there is no appropriate funding mechanism to deliver many of the Hold the Line policies that have been set to avoid future pollution. Many landfill sites are undeveloped and hence do not qualify for Flood and Coastal Risk Management Grant in Aid funding (FCRM GiA), resulting in coastal defences being 'patched up' rather than undergoing major capital works. Furthermore, the sums of money required for capital works are high even for basic coast protection, and higher still (and increasingly uncertain) to remove and/or treat waste within these sites.

3 Summary of Key Findings

Presence and number of sites

- 26 Local Authorities responded to the questionnaire out of 57 LGA Coastal SIG members.
- 18 out of the 26 responders worked as coastal managers.
- The presence of coastal landfills identified to be at risk from coastal flooding, erosion or both, is a widespread and prolific problem for LAs nationally. 67% of those LAs who identified coastal landfills within their boundary as being at risk from flooding or erosion have already experienced one or both of these at their sites.
- In total, 195 coastal landfill sites were identified as being at risk of tidal flooding and/or erosion across 24 LAs, with this number comprising both historic landfills and active, authorised or designated landfills.
- Two LAs reported having sites that have resulted in large amounts of waste eroding onto cliffs and the foreshore, despite the sites not being formally designated as landfill.

Flood and Erosion Risk Defence Policy and Measures

- Key issues and themes highlighted by the LAs surveyed included ongoing coastal erosion risk, flooding or observed erosion following storm events, emergency works to, and patch and repair of coastal defences.
- Over half of the responses identified that there had been either observed erosion or flood events at the coastal landfill sites in their area.

Policy and Defence Measures

- 59% of LAs reported that coastal landfill sites in their areas had been recognised as at risk via a Strategy or other study, and 38% reported coastal landfills actively eroding. 21% of LAs reported coastal landfills actively dispersing via tidal inundation, with a further 13% reporting landfills dispersing by other means, such as drainage or rainwater. Only 8% of LAs reported stable or inert coastal landfills.
- 52% of LAs reported the Shoreline Management Plan (SMP) Policy to be Hold the Line (HTL) for stretches of coastline where landfill is present, whilst 30% identified the SMP Policy to be No Active Intervention (NAI).
- Over half of those who responded reported having defence assets in front of coastal landfill sites, with some reporting that protection measures were comprised of the landfill itself. The presence of defences in front of coastal landfills can be sporadic and ad-hoc. Where defences are present, there can be significant variation in the condition and residual life of these assets, with many LAs only having sufficient budget for monitoring of defences, but not the required maintenance funding to prolong the life of the assets as there is no dedicated funding stream to support coastal landfills at this time.
- Nearly 1/3 of those who responded reported that there are no defence measures in place to protect landfill from the sea.
- 67% of LAs reported assets in good to poor condition, with 29% of LAs reporting fair condition, 17% of LAs reporting good condition and 21% of LAs reporting assets in poor condition. 1 LA (4%) reported assets in very poor condition. No LAs identified assets in very good condition.
- 11 of the LA's that responded reported that assets fronting former coastal landfill only have a 1-10 year residual life left. 7 reported 10-20years +.

Funding

- Only 3 LA's that responded identified having sufficient budgets to monitor and maintain the defences in front of coastal landfill sites, though it was not stated where these budgets originate from.
- Whilst there was a strong feeling that Defra and DLUHC should be helping to fund defence protection measures it was also recognised that blended funding from a variety of sources would be needed to solve the problem.
- Availability of funding was ranked as the greatest barrier to trying to deliver solutions, whilst guidance and political support to do something were ranked lowest, suggesting there is already strong momentum for change.
- The absence of funding mechanisms and team capacity to adequately implement measures, particularly longer-term solutions, to mitigate problems at these sites were both identified as high ranking in terms of barriers to delivering solutions at coastal landfill sites.

Ownership and Responsibility

- In total, 91% of respondents identified LAs as being at least partially responsible for shoreline / coast protection, whilst 26% identified private landowners at least partially responsible, and 17% identified the Environment Agency (EA). Other responsible bodies identified included the Ministry of Defence (MOD), Highways, the Crown Estate and the National Trust.

The Natural Environment

- 75% of the coastal landfill sites identified are adjacent to at least one environmentally designated feature. In the majority of LAs who responded, the landfill sites are adjacent to features with multiple environmental designations, demonstrating the natural and cultural importance of the functionality of these sites, the species they support, and the ecosystem services provided by them.
- 65% of LAs reported that their coastal landfills are not designated under Part 2A of the Contaminated Land Act, and the remaining 35% reporting that they didn't know how these sites were designated. No LAs reported having designated contaminated land.
- Pollution of the natural environment and impacts on water quality were ranked as the highest concerns if no funding could be found to protect coastal landfill from flooding or erosion.

Site information & Land Use

- Significant gaps in information exist on the type, content and quantities of waste or leachate being (or with the potential to be) released from coastal landfills.
- Gaps in information exist on erosion rates, flood risk and the impact of climate change and sea level rise exacerbating these.
- Over half of those that responded reported having limited to no information on the contents or makeup of the coastal landfill sites in their area. Of these, only 2 LAs reported having records of chemical sampling or analysis of exposed material at their sites.
- 71% of LAs reported land being used for open space, 58% reported recreational use and 33% reported scrub land. Housing and industrial uses each accounted for 21%, whilst commercial and military uses and wildlife reserves accounted for 13% each.

Solutions

- “New defence and protection measures” was ranked as the best outcome for managing coastal landfill with removal and remediation of waste second and third. “More policy options to buy time” was ranked the worst outcome.



- 44% of LAs advised that they had plans or intentions for works to protect the coastal landfills from coastal flood and erosion risk, whilst 39% advised they had no plans to undertake works. The remaining 18% provided additional context.
- Over half of the LAs reported that the estimated whole life cost of any works required to protect coastal landfill from flooding and erosion would be over £30 million.
- The responses demonstrate a clear need for support and funding for Local Authorities from Central Government, in order to be able to effectively and sustainably manage the situation with long-term solutions.

4 How the LGA Coastal SIG and Coastal Group Network will use this information

It is accepted that a questionnaire does not provide a complete overview of the current national picture of coastal landfill management, particularly as there are geographical areas without representation in the data obtained. However, the purpose of the questionnaire was to seek input from Local Authorities who own or are involved in the management of coastal landfill sites, to help bridge gaps in the current evidence base around the challenges being faced nationally.

The responses captured by the questionnaire will provide the LGA Coastal SIG and Coastal Group Network with a deeper understanding of collective opinion, helping to steer conversations with both Central and Local Government, coastal and waste management professionals, landowners and wider stakeholders, to develop a long-term management plan that is technically feasible and affordable.

Engagement will take place amongst LGA Coastal SIG members, the Coastal Group Network and wider stakeholders following publication of this report. A press release will be published to inform of the release of this report and its key findings, in addition to updates to the [LGA Coastal SIG website](#) and social media channels.

A joint position statement between the LGA Coastal SIG and Coastal Group Network on the summary and outcomes of this report, alongside the call to arms work to date, will also be written. It is intended to be shared with the All Party Parliamentary Group (APPG) for [Coastal Communities](#), for which the LGA Coastal SIG are the co-Secretariat. This position statement will be used for advocacy purposes, to bring attention and funding to this pressing issue. These outputs will also be shared with Defra to inform their future policy work.

In addition, there is potential to produce an additional follow-up questionnaire, to gain further information from those LAs who have already provided responses and to gain additional responses from wider LAs for whom evidence is missing.

5 Engagement Approach

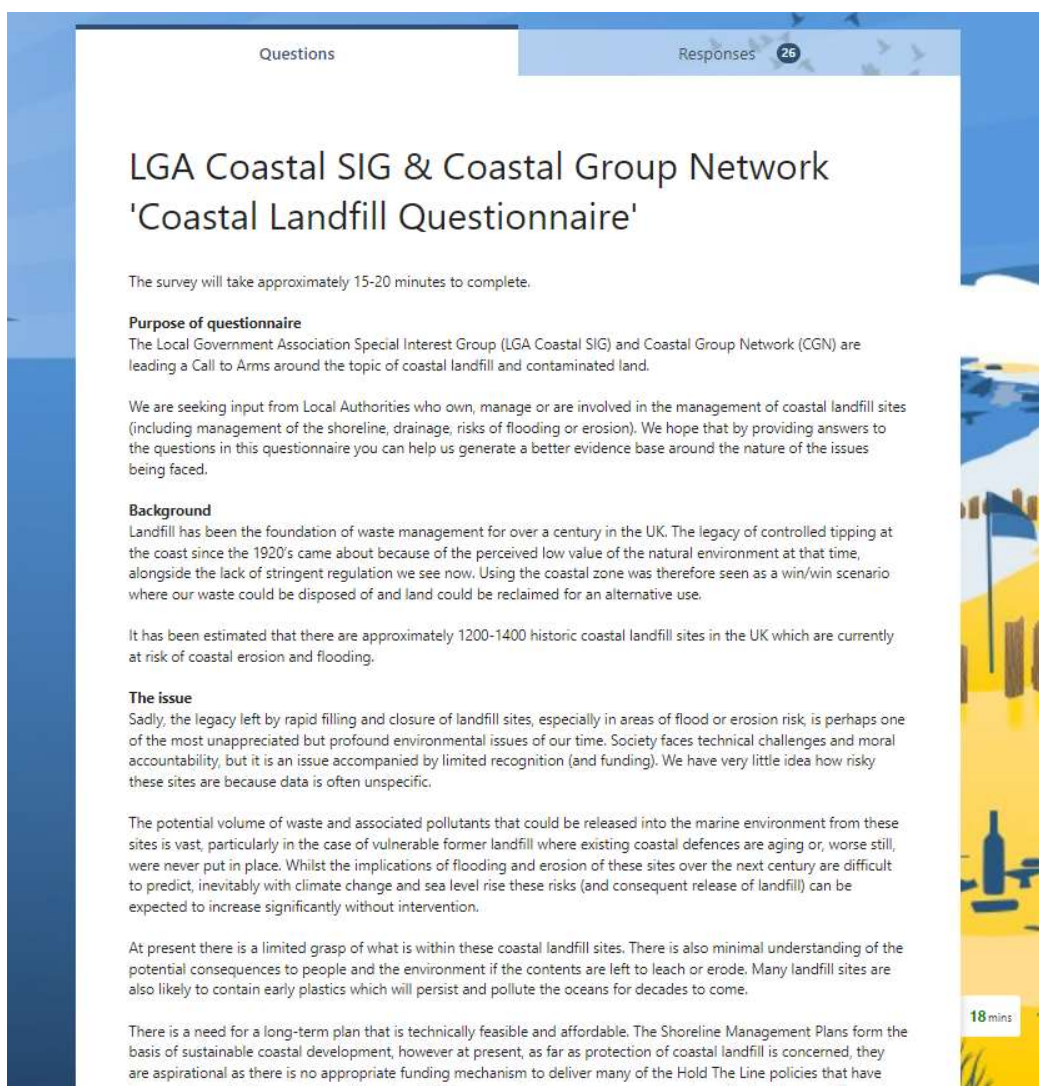
Survey format

An online survey was developed to seek input and views from Local Authorities nationally on the management of coastal landfill sites.

Respondents were asked a total of 39 questions, with some of these being optional.

Respondents were also given an opportunity at the end of the questionnaire to leave their contact details if they wished to remain updated on the outputs of this report. An example of the layout and format of the questionnaire can be seen in Figure 1.

The survey was made available online between the 5th July and 2nd August 2022.



Questions Responses 26

LGA Coastal SIG & Coastal Group Network 'Coastal Landfill Questionnaire'

The survey will take approximately 15-20 minutes to complete.

Purpose of questionnaire
The Local Government Association Special Interest Group (LGA Coastal SIG) and Coastal Group Network (CGN) are leading a Call to Arms around the topic of coastal landfill and contaminated land.

We are seeking input from Local Authorities who own, manage or are involved in the management of coastal landfill sites (including management of the shoreline, drainage, risks of flooding or erosion). We hope that by providing answers to the questions in this questionnaire you can help us generate a better evidence base around the nature of the issues being faced.

Background
Landfill has been the foundation of waste management for over a century in the UK. The legacy of controlled tipping at the coast since the 1920's came about because of the perceived low value of the natural environment at that time, alongside the lack of stringent regulation we see now. Using the coastal zone was therefore seen as a win/win scenario where our waste could be disposed of and land could be reclaimed for an alternative use.

It has been estimated that there are approximately 1200-1400 historic coastal landfill sites in the UK which are currently at risk of coastal erosion and flooding.

The issue
Sadly, the legacy left by rapid filling and closure of landfill sites, especially in areas of flood or erosion risk, is perhaps one of the most unappreciated but profound environmental issues of our time. Society faces technical challenges and moral accountability, but it is an issue accompanied by limited recognition (and funding). We have very little idea how risky these sites are because data is often unspecific.

The potential volume of waste and associated pollutants that could be released into the marine environment from these sites is vast, particularly in the case of vulnerable former landfill where existing coastal defences are aging or, worse still, were never put in place. Whilst the implications of flooding and erosion of these sites over the next century are difficult to predict, inevitably with climate change and sea level rise these risks (and consequent release of landfill) can be expected to increase significantly without intervention.

At present there is a limited grasp of what is within these coastal landfill sites. There is also minimal understanding of the potential consequences to people and the environment if the contents are left to leach or erode. Many landfill sites are also likely to contain early plastics which will persist and pollute the oceans for decades to come.

There is a need for a long-term plan that is technically feasible and affordable. The Shoreline Management Plans form the basis of sustainable coastal development, however at present, as far as protection of coastal landfill is concerned, they are aspirational as there is no appropriate funding mechanism to deliver many of the Hold The Line policies that have

18 mins

Figure 1: Questionnaire Front Page



Distribution

LGA Coastal SIG Website

On 5th July 2022, to mark the launch of the questionnaire going live, a [news article](#) was shared on the [LGA Coastal SIG website](#), outlining the purpose of the questionnaire and setting out the strategic context of the issue of coastal landfills. This is shown in Figure 2 below.

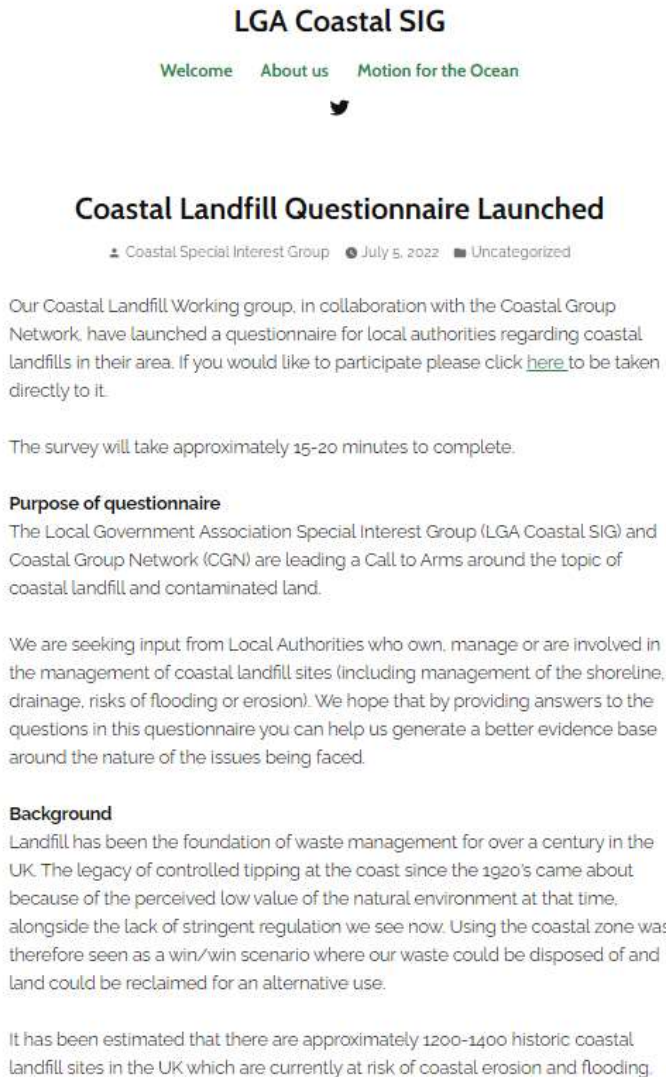


Figure 2: LGA Coastal SIG news article for launch of the Coastal Landfill Questionnaire

Twitter

To help spread further awareness of the questionnaire, the LGA Coastal SIG's Twitter account also tweeted details of and a link to complete the Coastal Landfill Questionnaire on 19th July 2022, shown below in Figure 3. The tweet was retweeted five times, including by the Coastal Communities Alliance and had 163 Impressions.

We are seeking input from LAs who own/manage/involved in the management of [#coastallandfillsites](#) (including management of the shoreline, drainage, risks of flooding or erosion) to enhance our evidence base. Pls follow this link to take part forms.office.com/r/vWx7vOCweM



3:48 PM · Jul 19, 2022 · Twitter for iPhone

Figure 3: Details of the Coastal Landfill Questionnaire shared by the LGA Coastal SIG on Twitter

6 Results

Survey Responses

In total, 26 consultation responses were received out of 57 LGA Coastal SIG Members. Some questions were optional and were not answered by every respondent.

The response to the questions is set out in the following sections.

Results and Analysis

Question 1: Locations of Local Authority

The locations of the LAs who responded to the questionnaire are shown below in Figure 4.

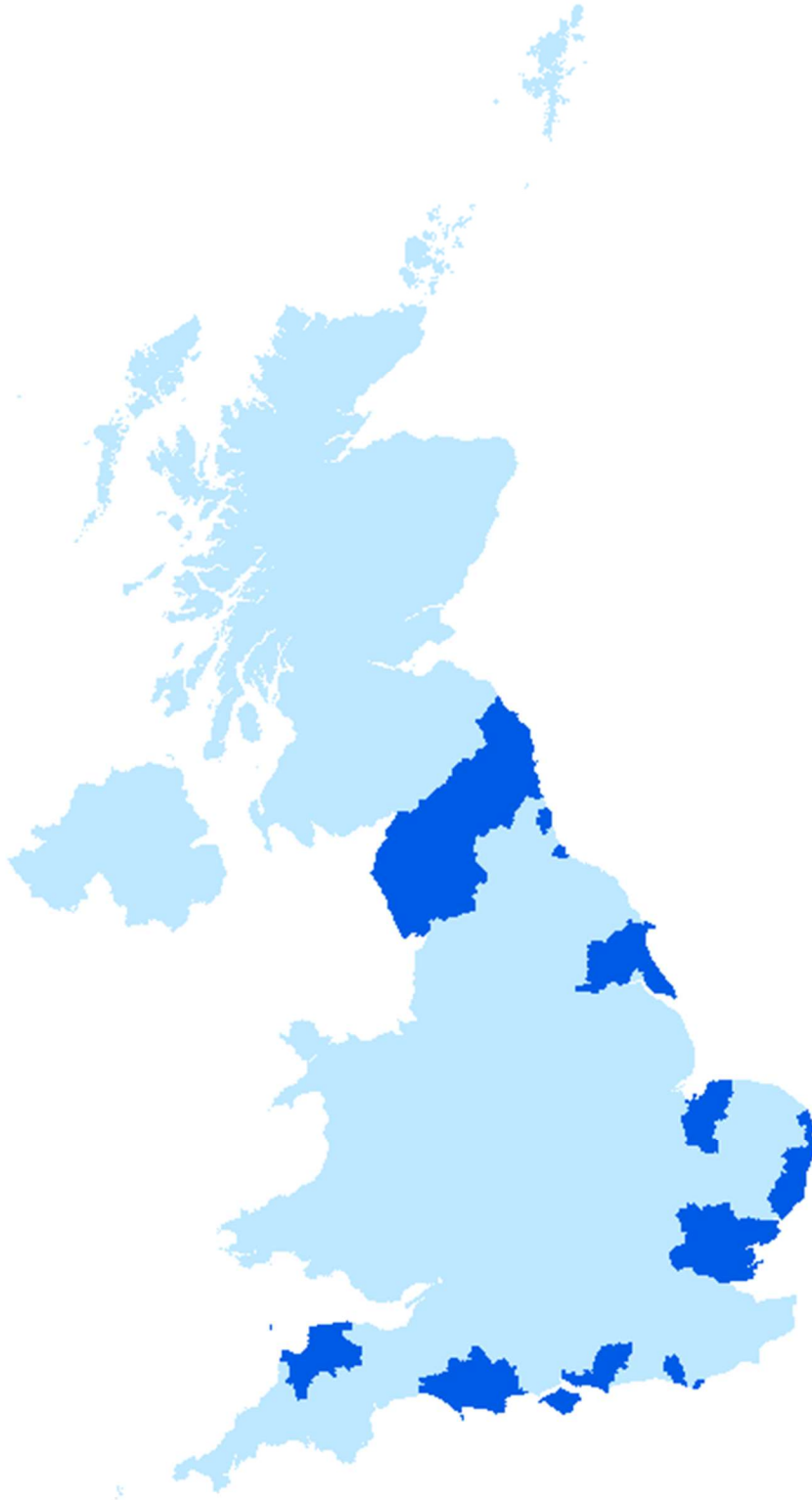
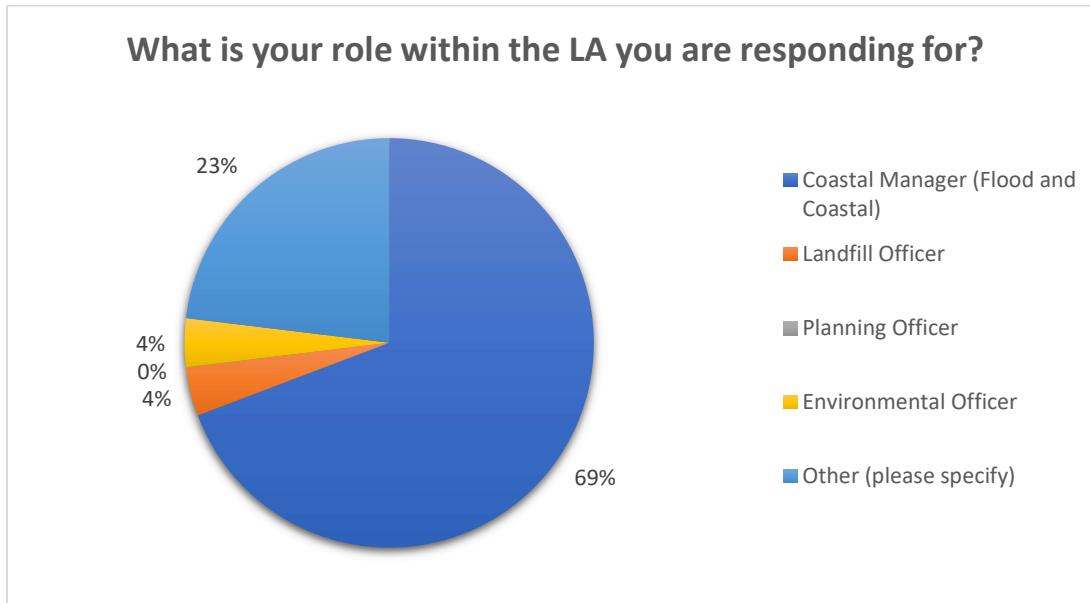


Figure 4: Locations of LAs who responded to the Coastal Landfill Questionnaire

Question 2: What is your role within the LA you are responding for?



69% of respondents work as Coastal Managers, 23% work in ‘Other’ roles, whilst only 1 respondent reported working as a Landfill and Environmental Officer. No respondents work as Planning Officers.

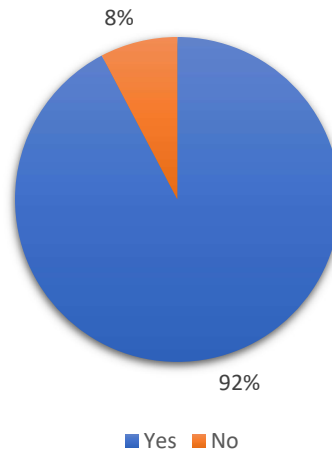
‘Other’ roles identified include:

- “Senior Coastal Engineer”
- “Coastal Officer”
- “Lead Member for Coastal Communities”
- “Engineer”
- “Environmental Health Officer”
- “Senior Coastal Advisor”

Incorporating the ‘other’ responses, 85% of respondents work within coastal management.

Question 3: Do you have a coastal landfill site(s) within your LA boundary, or within the coastal area that you manage? Or do you have a landfill site that is being managed in terms of inland flooding or development plans, that may provide shared lessons for the coastal issue?

Do you have a coastal landfill site(s) within your LA boundary, or within the coastal area that you manage? Or do you have a landfill site that is being managed in terms of inland flooding or development plans, that may provide shared lessons?



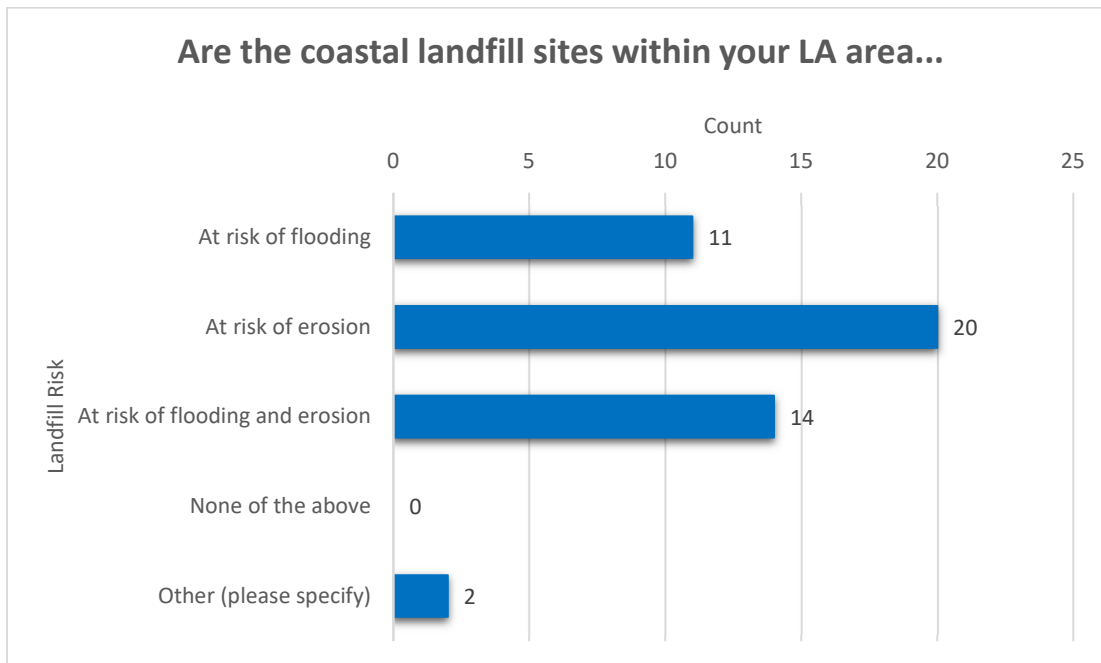
92% of respondents identified the presence of a coastal landfill site within their LA boundary, or an inland landfill site that may provide shared lessons. The 2 respondents who did not identify the presence of a relevant landfill site ended the survey here.

Question 4: If you answered ‘yes’ to the previous question, please tell us how many coastal landfill sites there are? If possible, please differentiate between flood and erosion risk, etc.

In total, 195 coastal landfill sites were identified as being at risk of tidal flooding and/or erosion across 24 LAs, with this number comprising both historic landfills and active, authorised or designated landfills. However, the total number is likely to be higher, due to there being ambiguity in the true number of sites being at risk, and some coastal landfill sites being grouped into larger management areas.

The greatest number of sites identified as being at risk of tidal flooding or erosion by a single LA was 36 grouped sites. In some locations, there were also uncertainties in recognising those landfills which may be at future tidal flood risk. Furthermore, some sites have resulted in large amounts of waste eroding onto cliffs and the foreshore, despite not being formally designated as landfills.

Question 5: Are the coastal landfill sites within your LA area...

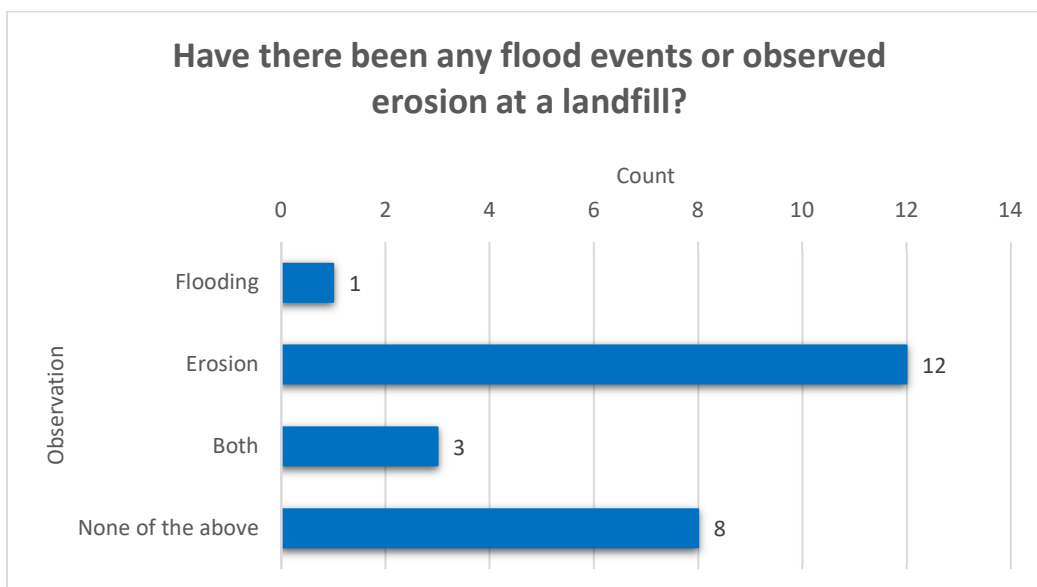


83% of LAs reported coastal landfill sites at risk of erosion only, whilst 46% identified coastal landfills at risk of flooding only, and 58% identified the presence of coastal landfills at risk from both flooding and erosion. No respondents answered 'none of the above'.

'Other' responses received were as follows:

- "Climate change makes everything at risk"
- "Unclear, as landfill is at top of a coastal cliff with low levels of erosion, but there could be leaching into the sea."

Question 6: Have there been any flood events or observed erosion at a landfill?



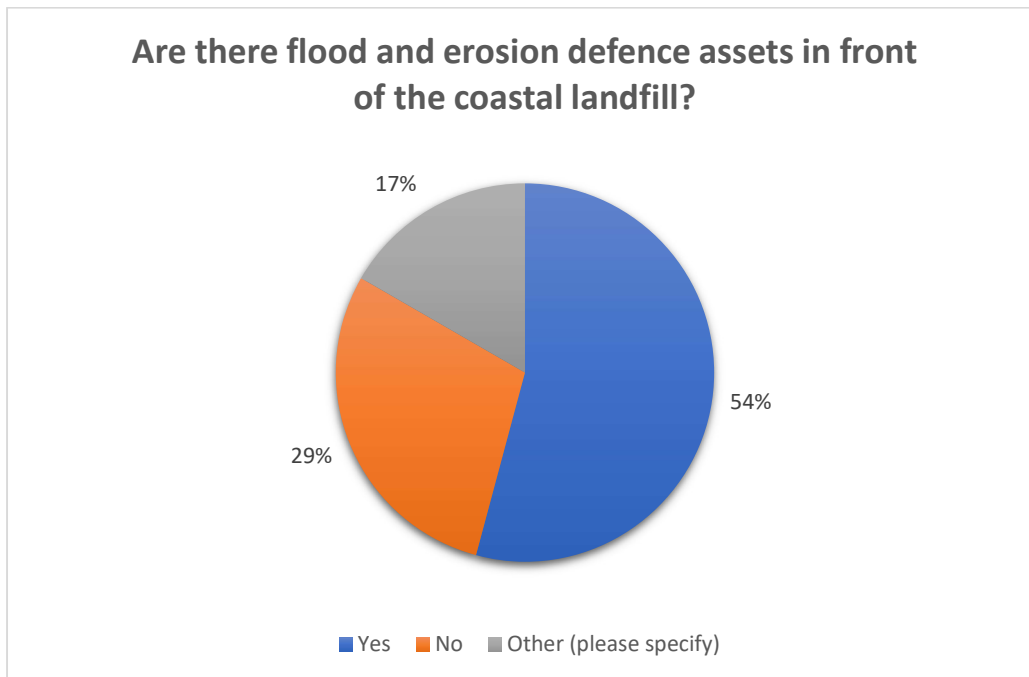
50% of LAs reported observed erosion having taken place at a landfill, 13% reported observed both flood events and erosion, and 1 LA (4%) reported a flood event only. 33% of LAs responded that no flood events or observed erosion had taken place at a landfill within their boundary.

Question 7: If you answered a, b or c to the previous question, please provide dates and context, if known.

16 responses were received for this open question, and the responses have been categorised into key themes. For each of these, a selection of comments has been included to demonstrate the type of responses received, whilst some responses crossed multiple themes.

- **Ongoing coastal erosion risk.** 9 responses such as:
 - “All 8 sites are currently exposed to coastal erosion”
 - “Ongoing coastal erosion of around 1.25m/yr has resulted in a constant trickle of material from the former waste incinerator site being exposed over the last 10 years. Erosion first breached the community flood bank and revealed the waste present around 5 years ago. Rapid coastal erosion in this area has meant that much of the flood bank has now disappeared and the amount of material being exposed has reduced.”
 - “Gradual erosion and exposure of waste over the last 5 years or so.”
- **Emergency works, patch & repair and implementation of defences.** 5 responses such as:
 - “Defence failure at some sites requiring emergency works.”
 - “Very sporadic and recent, namely sea wall damage and salt marsh erosion - patch and repair only.”
 - “Erosion at two landfills over the last couple of decades. One landfill has had edge protection created by placing shingle along the frontage with a rock armour bund to provide further protection from wave action. The second is currently having a scheme designed to provide erosion protection.”
- **Storm events.** 4 responses such as:
 - “During Valentine’s Day storms.”
 - “Some sites actively eroding. Some sites flooded or eroded during recent named storms.”
 - “In 2000 floods inundated pre-1976 landfill sites.”

Question 8: Are there flood and erosion defence assets in front of the coastal landfill?

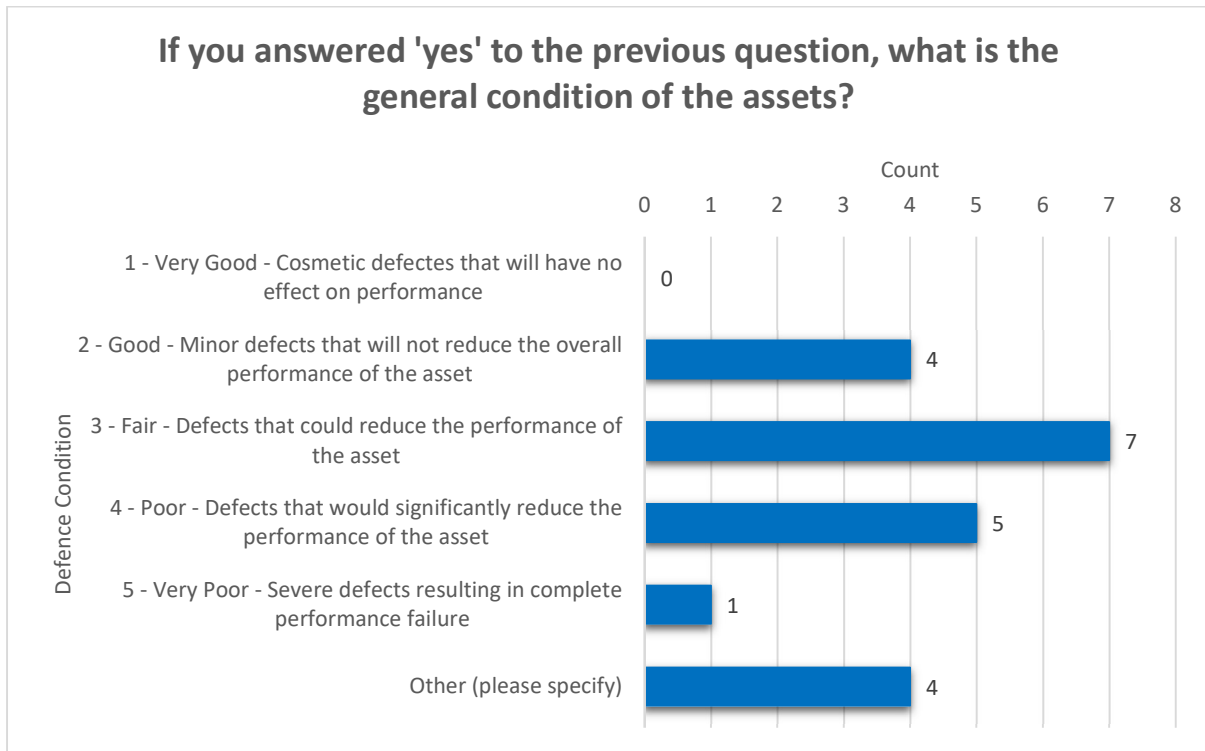


54% of LAs reported the presence of flood and/or erosion defence assets protecting their coastal landfills, 29% reported no defences, whilst 17% responded with 'other'.

'Other' responses referenced defence assets only protecting some landfill sites, and in some areas, the landfill itself forming or contributing to the defence, as shown below:

- "On 2"
- "Some"
- "In 4 of the 6 sites the landfill actually forms the sea / erosion defence"
- "Mainly no. But waste may have been used in the construction of a flood defence."

Question 9: If you answered 'yes' to the previous question, what is the general condition of these assets?



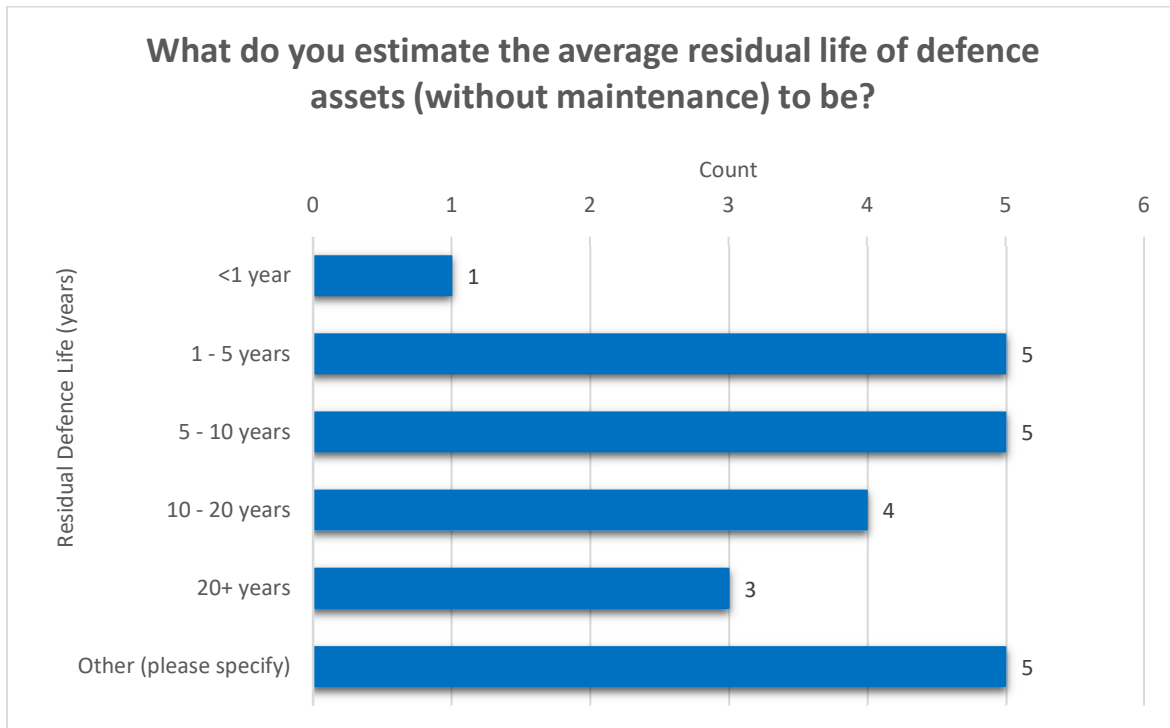
For this multiple-choice question, respondents were asked to select the general condition of their flood and erosion assets protecting coastal landfills, from 1 – Very Good – Cosmetic defects that will have no effect on performance, to 5 – Very Poor – Severe defects resulting in complete performance failure.

67% of LAs reported assets in good to poor condition, with 29% of LAs reporting fair condition, 17% of LAs reporting good condition and 21% of LAs reporting assets in poor condition. 1 LA (4%) reported assets in very poor condition. No LAs identified assets in very good condition.

'Other' responses report varying asset condition from poor to good, with some sections undefended or relying on natural defence systems, including:

- “Most fair to poor, but some undefended.”
- “Fair to good on the whole. Some new defences being put in Southsea and North Portsea Island.”
- “Some sections undefended.”
- “Some well protected, others natural defences such as dune systems.”
- “N/A”
- “Not known.”

Question 10: What do you estimate the average residual life of defence assets (without maintenance) to be?



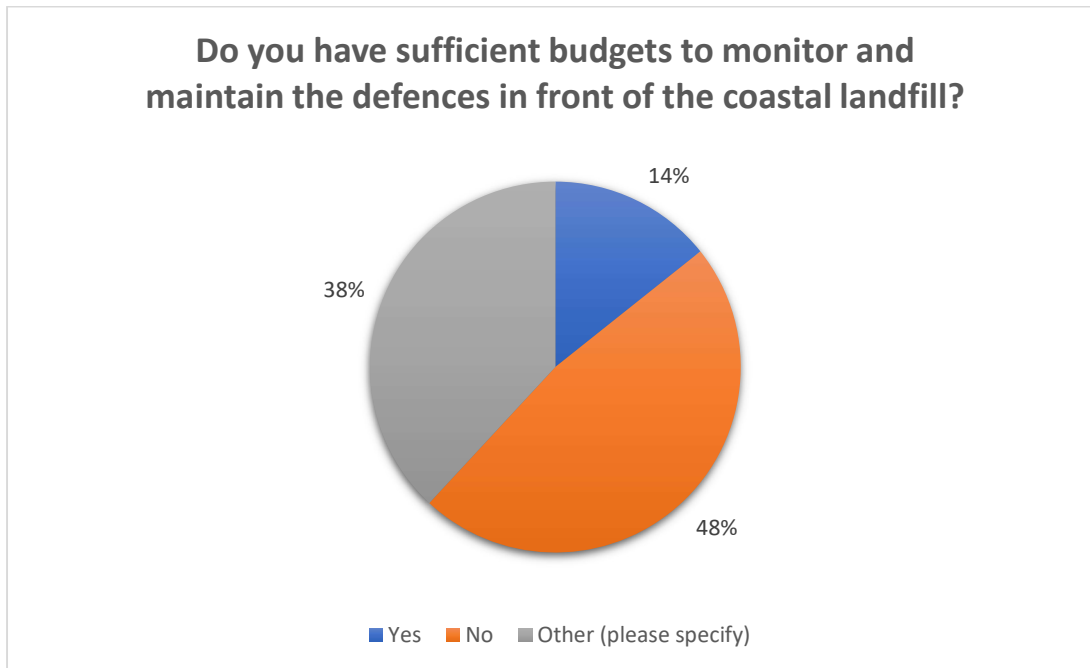
Similarly to Question 9, for this multiple-choice question, respondents were asked to estimate the average residual life of their assets, assuming no maintenance, from <1 year to 20+ years.

21% of LAs estimated the average residual life of their defences to be 1-5 years and 5-10 years respectively, followed closely by 17% estimating a residual life of 10-20 years, whilst a further 21% responded 'other'.

'Other' responses include:

- "Not known" (reported twice)
- "Varying, no life to 10+ years"
- "Some have failed"
- "N/A"

Question 11: Do you have sufficient budgets to monitor and maintain the defences in front of the coastal landfill?



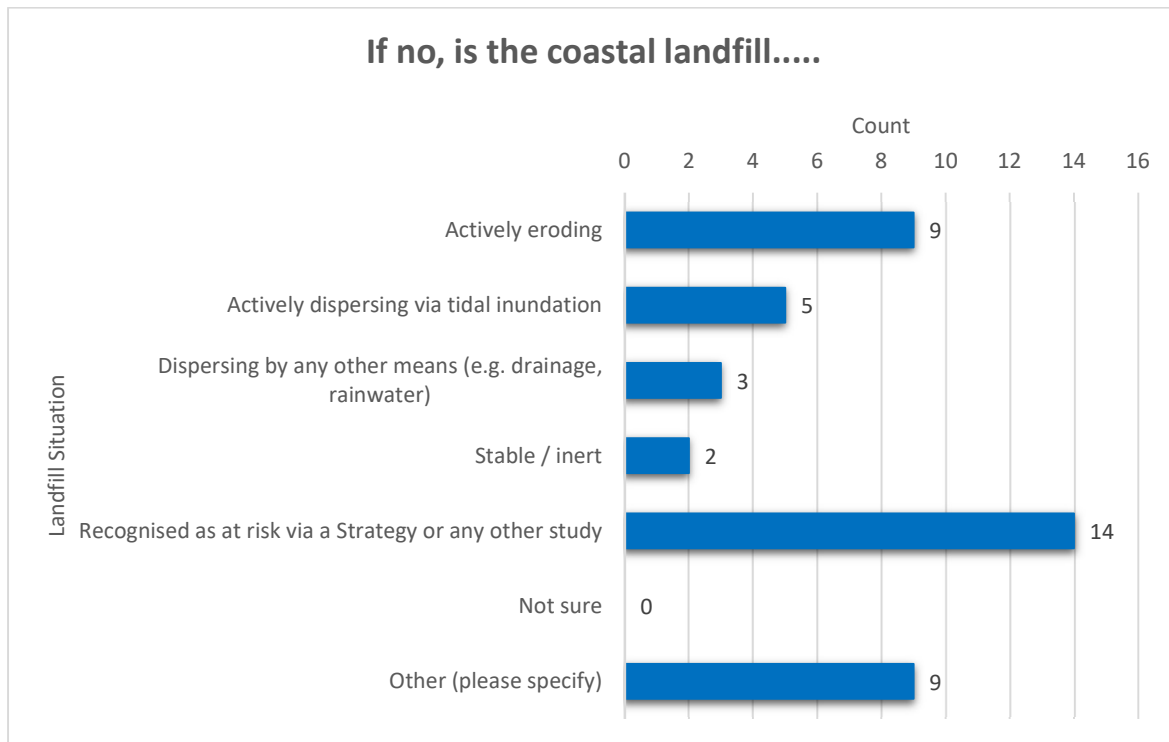
21 responses were received for this question, with 48% of LAs reporting that they do not have sufficient budget for monitoring and maintenance of the defences in front of the coastal landfills. Only 3 LAs (14%) identified that they have sufficient monitoring and maintenance budget.

A further 38% of LAs responded with 'other' comments, a selection of which is shared below.

- “Defence maintenance a challenge as limited ringfenced budgets from government. EA get grant to maintain. LA's do not which seems perverse.” (Response applies to 5 LAs)
- “Budget to monitor only. The landfills are the defence / sea walls.”
- “We have sufficient funds & resources to monitor, but whether they can be maintained is uncertain because of a wide range of factors (e.g. how expensively a particular defence at any one site may fail in the next few years and if it would consume the maintenance budget).”

From the 'other' responses received, it is clear that in some areas, budget for defence maintenance is a challenge, with budget often only being available to monitor defences.

Question 12: If no, is the coastal landfill....



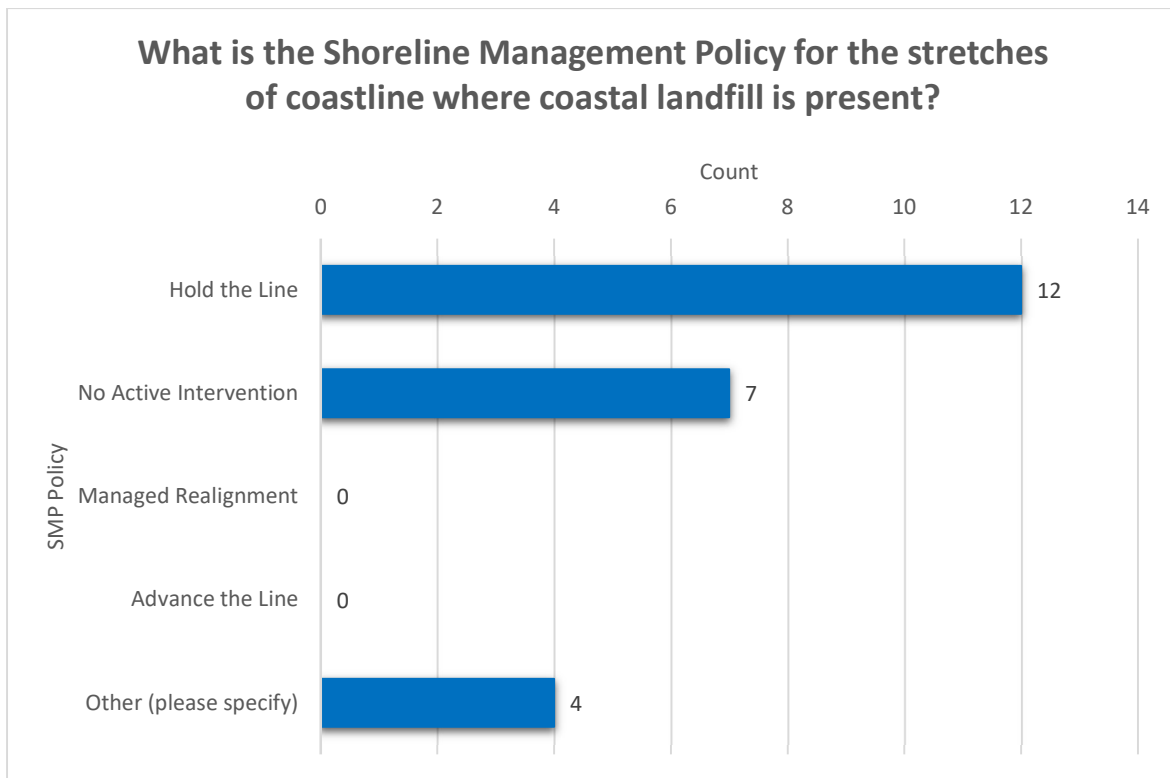
This question was multiple-choice and aimed at the LAs who had identified they had insufficient budget for the monitoring and maintenance of defences in front of coastal landfills.

59% of LAs reported coastal landfills that had been recognised as at risk via a Strategy or other study, and 38% reported coastal landfills actively eroding. 21% of LAs reported coastal landfills actively dispersing via tidal inundation, with a further 13% reporting landfills dispersing by other means, such as drainage or rainwater. Only 8% of LAs reported stable or inert coastal landfills.

An additional 38% responded with 'other', including:

- “The site is at risk of dispersing via erosive wave action. This is currently managed in the short term by undertaking beach recycling. This is not feasible in the long term as there is no guarantee that suitable material will be available in the future.”
- “Mixture of situations - none are dramatically eroding or obviously releasing waste.”
- “Defence maintenance is a challenge as limited ringfenced budgets from Government. EA get grant to maintain. LA's do not which seems perverse.” (Comment applies to 5 LAs and was intentionally repeated from the answers to Question 11.)
- “Largely protected by assets”
- “Actively eroding land owned by third party. Other locations where erosion may occur in the future mix of riparian and EA assets. One case where old gasworks waste is located beside river, planning permission was given for 10 £million plus homes as it would provide a new river wall to contain the waste, as former river wall had no engineering life left.”
- “Study proposed to cover the site. EA-lead.”

Question 13: What is the Shoreline Management Policy for the stretches of coastline where coastal landfill is present?



23 responses were received to this question. 52% of LAs reported the Shoreline Management Plan (SMP) Policy to be Hold the Line (HTL) for stretches of coastline where landfill is present, whilst 30% identified the SMP Policy to be No Active Intervention (NAI).

A further 18% responded with 'other', which are included below in combination with the responses to Question 14.

Question 14: Question 13 Free Text

This question enabled respondents to provide additional detail and elaborate on the SMP Policies identified in Question 13 and their context.

The responses, in combination with those who responded with 'other' to Question 13, are shown below:

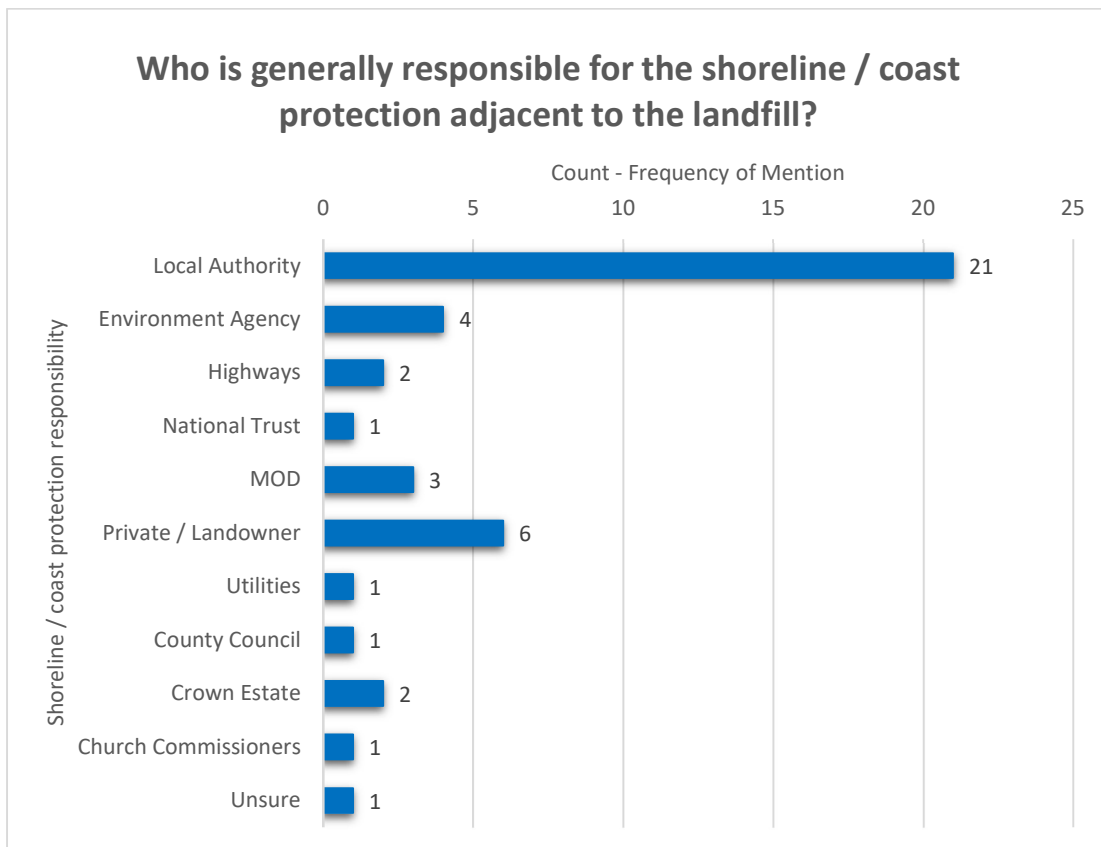
- “The landfill site is located within a spit on a tidal estuary mouth facing west to the Atlantic Ocean.”
- “No Active Intervention for Epoch 1-20 years and thereafter Managed Realignment.”
- “Generally HTL.”
- “Where tidal river SMP has no relevance”
- “The landfill was deposited in 1960's to raise land that was prone to sea flooding from defence overtopping and outflanking. It has a robust seawall built c1950 to seaward where the beach is currently generally healthy but eroding.”

- “This varies (between HTL, NAI & MR) according to the needs of the policy unit. - MR, NAI where investigations are recommended; HTL where the landfill is known to present a marine pollution risk.”
- “Patch and Repair - hence IRF (Flood & Coastal Resilience Innovation Fund) Project looking at innovative ways to protect.”
- “No immediate assets at risk of erosion.”

Question 15: Who is generally responsible for the shoreline / coast protection adjacent to the landfill?

23 responses were received for this question. Upon initial analysis, 13 respondents (57%) identified Local Authorities as responsible for shoreline / coast protection adjacent to the landfill, whilst the remaining 10 respondents reported ‘other’.

Following analysis of the ‘other’ responses for frequency of mention, it is evident that for many LAs, there are several bodies with shared shoreline / coast protection responsibility.



In total, 91% of respondents identified LAs as being at least partially responsible for shoreline / coast protection, whilst 26% identified private landowners at least partially responsible, and 17% identified the Environment Agency (EA). Other responsible bodies identified included the Ministry of Defence (MOD), Highways, the Crown Estate and the National Trust.

In some locations, there was also uncertainty over who this responsibility lies with, highlighting the importance of raising awareness around the management of coastal landfills and the requirement for a joined-up, collaborative approach to management between all involved parties.

Question 16: Question 15 Free Text

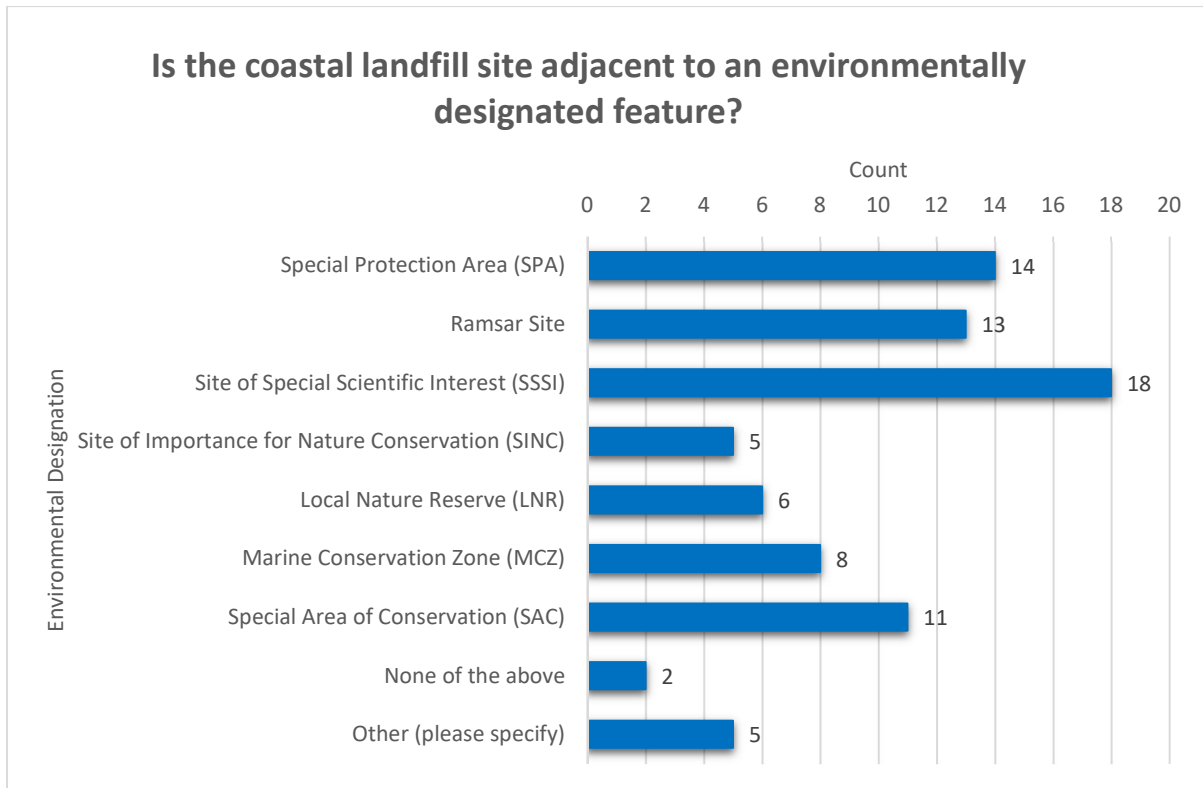
This question enabled respondents to provide further detail and clarification around who is responsible for the shoreline / coast protection adjacent to their coastal landfills, as identified in Question 15.

These responses are shown below:

- “While the LA is the Coast Protection Authority (CPA) for the area, sites are in multiple land ownership and given any management would likely to be voluntary, unlikely to be progressed by the landowners.”
- “We manage the shoreline in the area (SF5) however the foreshore is owned by Crown Estates and the land adjacent to the foreshore where the landfill site is located is owned by the Church Commissioners.”
- “The District Council are the CPA for the area and are the landowner of the majority of the historic landfill site. The County Council own one small section of the historic landfill site, but this part is not on the coastal margin.”
- “Would need to pull out agreements to clarify.”
- “As sea walls 4 of the 6 sites are both the LA and EA's responsibility. 2 sites solely LA responsibility.”
- “Although the Local Authority is responsible for coastal management adjacent to these sites the land and cliffs are privately owned, and the foreshore is owned and managed by the Crown Estate.”

Answers provided here reiterate clear themes of multiple land management responsibility, even where the LA is the designated CPA.

Question 17: Is the coastal landfill site adjacent to an environmentally designated feature?



75% of the coastal landfill sites identified are adjacent to at least one environmentally designated feature, with 75% of these identified sites being adjacent to a Site of Special Scientific Interest (SSSI). 58% of the coastal landfills identified are adjacent to a Special Protection Area (SPA), 54% are adjacent to a Ramsar Site and 46% are adjacent to a Special Area of Conservation (SAC). Only 2 LAs reported that their coastal landfill sites are not adjacent to any environmentally designated features.

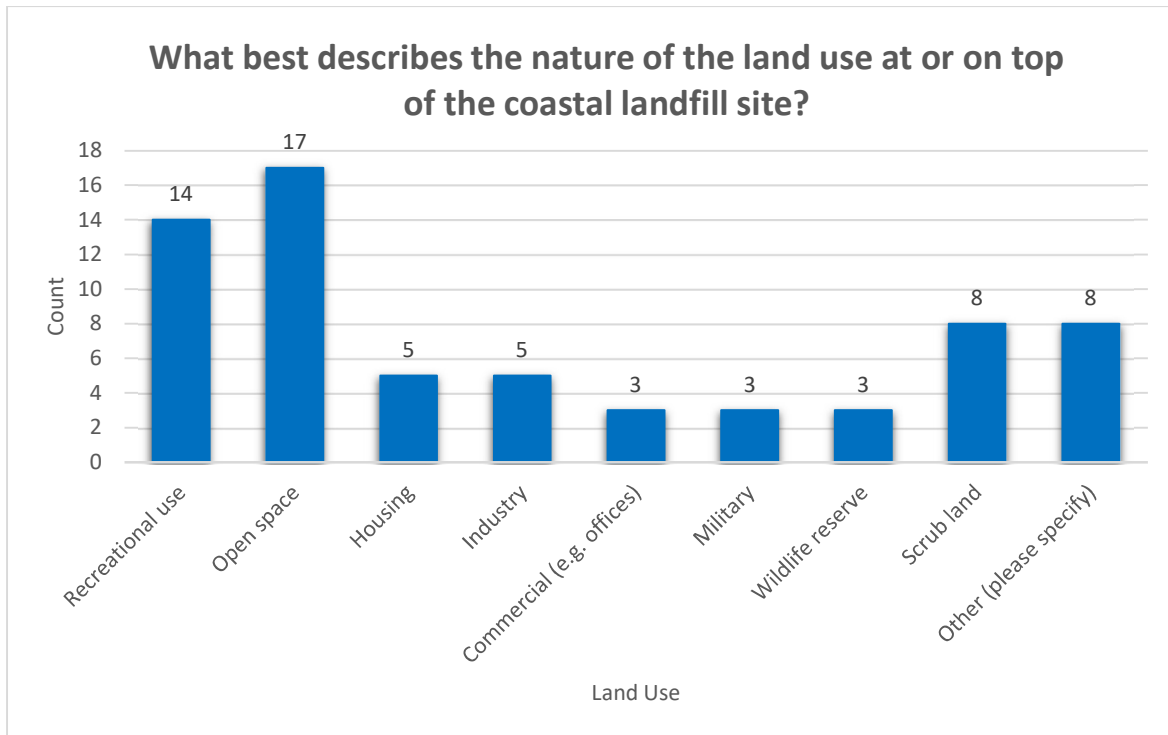
Marine Conservation Zones (MCZs), Local Nature Reserves (LNRs) and Sites of Importance for Nature Conservation (SINCs) were also identified.

'Other' responses and environmental designations identified include:

- "Country Park" (Northam Burrows)
- "National Nature Reserve" (NNR)
- "Designations are present, but unsure which"
- "MCZs in Poole Bay"
- "Designations vary"

It is also worth noting that, in the majority of LAs who responded, the landfill sites are adjacent to features with multiple environmental designations, demonstrating the natural and cultural importance of the functionality of these sites, the species they support, and the ecosystem services provided by them.

Question 18: What best describes the nature of the land use at or on top of the coastal landfill site?



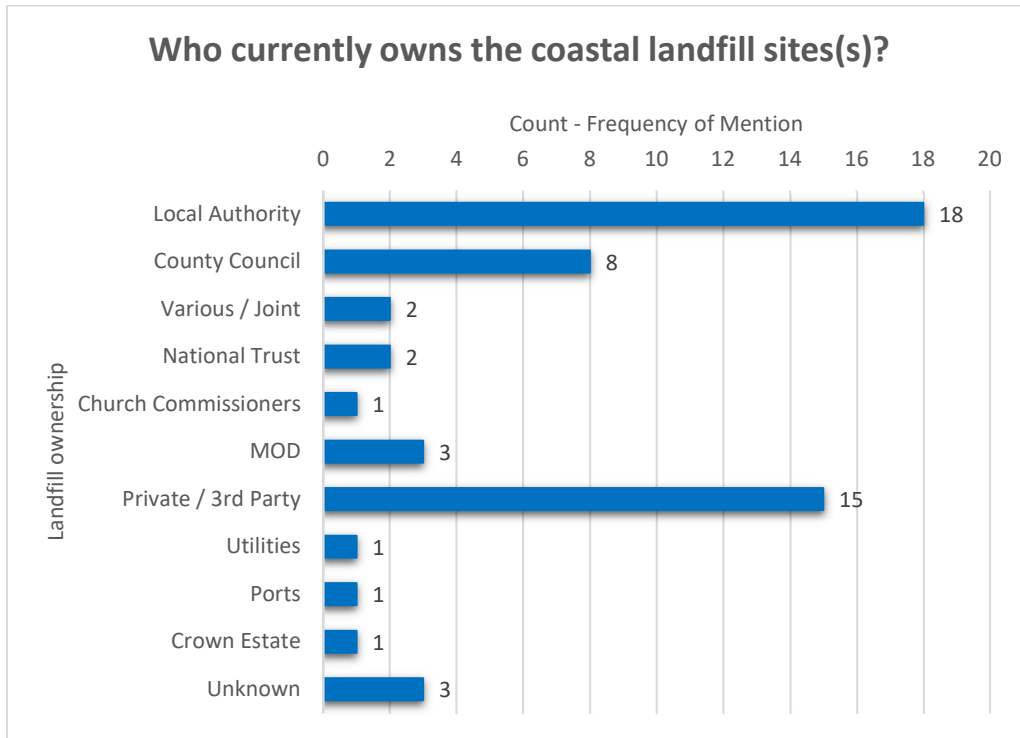
The responses indicate that multiple land uses tend to occur at or on top of coastal landfill sites, rather than single usage.

71% of LAs reported land being used for open space, 58% reported recreational use and 33% reported scrub land. Housing and industrial uses each accounted for 21%, whilst commercial and military uses and wildlife reserves accounted for 13% each.

8 LAs (33%) reported 'other' uses, as shown below:

- "Northam Burrows Country Park"
- "Agricultural" (reported 3 times)
- "Caravan parks"
- "Marinas"
- "Grazing"
- "Some farming, some abandoned industrial, with area subject to residential planning applications and a potential coal mine, decision subject to further delay."

Question 19: Who currently owns the coastal landfill site(s)?



Coastal landfill site ownership broadly corresponds with coastal / foreshore protection responsibility at these sites, with 75% of respondents reporting Local Authority ownership and 63% reporting private or 3rd party ownership, followed by 33% County Council ownership.

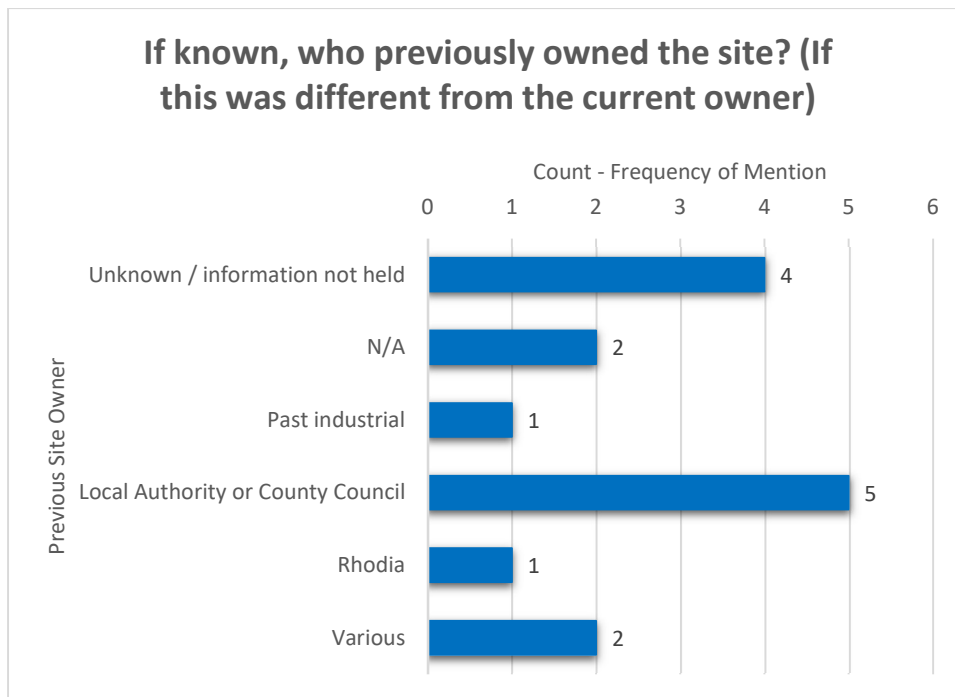
Other landfill site owners identified include the MOD and the National Trust, coinciding with responsibility for shoreline / coast protection at these sites. 3 LAs reported that the ownership for their coastal landfill sites is unknown.

Private / 3rd party owners that were identified include:

- Defence & security
- Holiday / caravan parks
- Farmers

Several of the Local Authorities surveyed also reported multiple site ownerships.

Question 20: If known, who previously owned the site? (If this was different from the current owner)



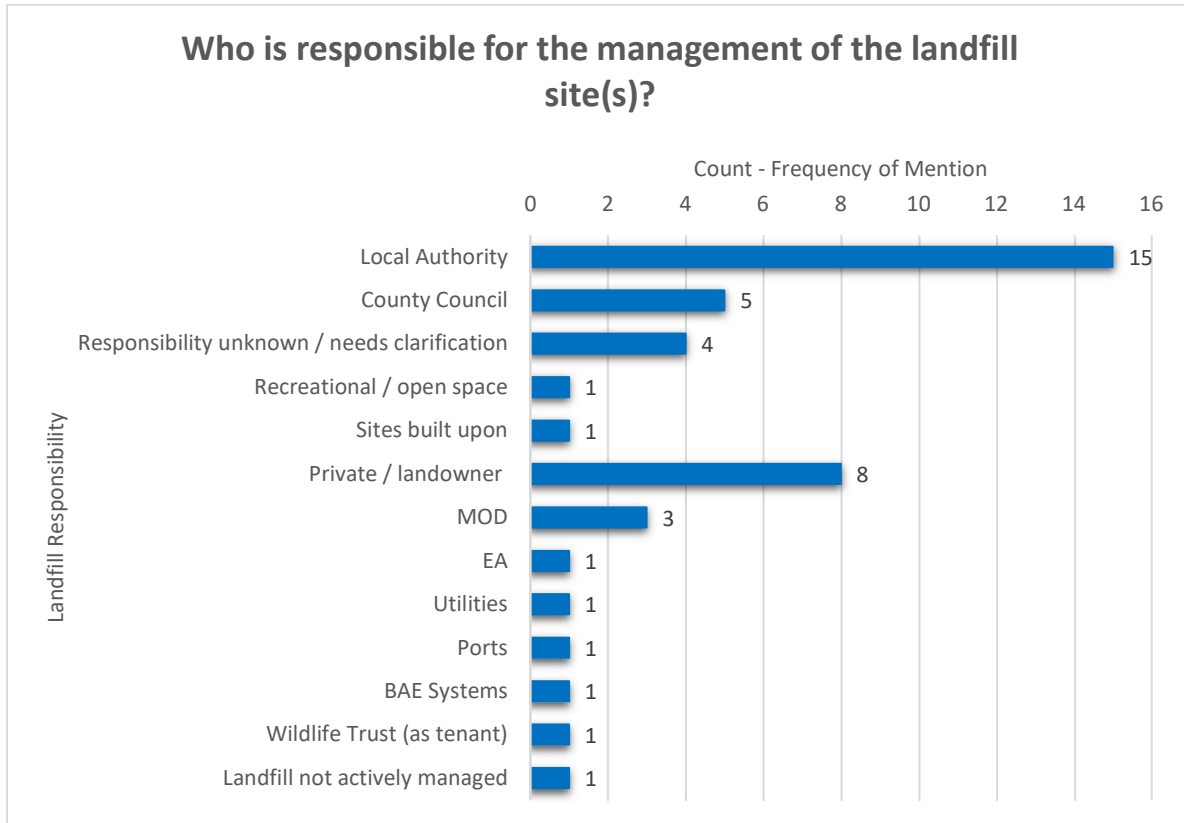
16 responses were received for this question and were analysed for frequency of mention. 31% of respondents identified that coastal landfill sites were previously in Local Authority or County Council ownership, whilst 25% reported that the information was unknown.

Additional context was provided in the responses below:

- “Previous Urban Unitary Council transferred ownership to District Council.”
- “Mainly the EA database records for this information - not necessarily comprehensive/complete. Given the number of sites we would be happy to provide a spreadsheet listing this information as best we can if required.”
- “Past industry in some areas. Wartime munitions factories. Bone processing for glue factory. Waste sites.”
- “The former incinerator site was owned by the Local Authority and its predecessor councils until 2003. The new owner was made aware of the presence of the waste during the sale.”
- “The site now privately owned was previously owned and operated by both the Borough Council and County Council.”

Question 21: Who is responsible for the management of the landfill site(s)?

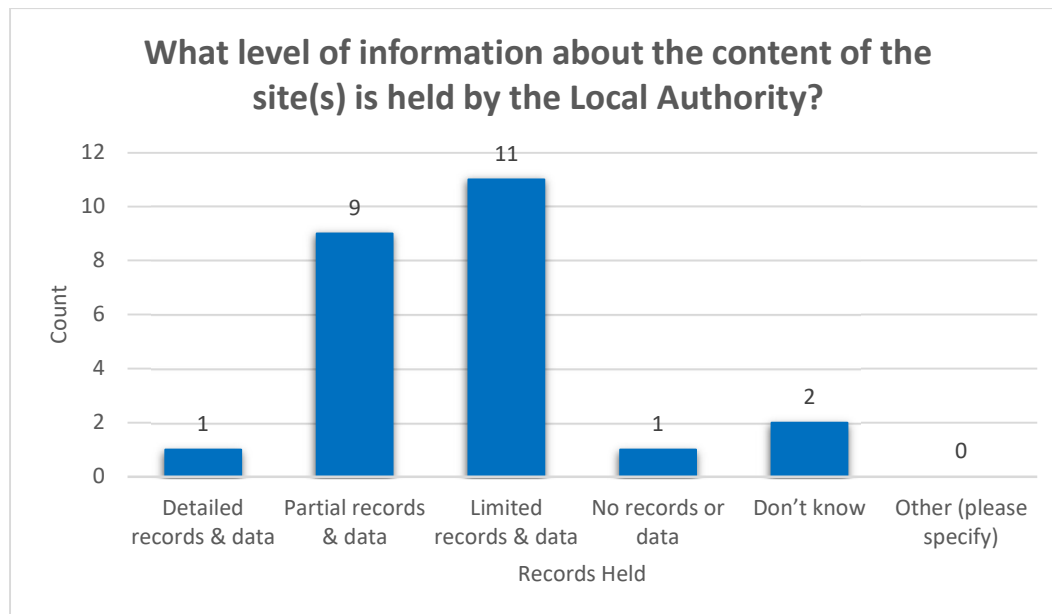
The responses to this open question were analysed for frequency of mention and are presented below.



63% of respondents recorded that Local Authorities are responsible for the management of the landfill site(s), whilst 33% identified that private landowners were. 21% also identified that County Councils are responsible for landfill management, and 17% stated that the responsibility was unknown or needed further clarification, which appears to be a continuing theme.

These results are consistent with those reported for the responsibility of the foreshore / coast protection adjacent to the coastal landfills, in addition to site ownership.

Question 22: What level of information about the content of the site(s) is held by the Local Authority?



46% of LAs reported that they held limited records and data about the contents of their landfill sites, closely followed by 38% reporting that they hold partial records and data. Only 1 LA (4%) recorded holding detailed records, and 1 stated they hold no records at all.

Question 23: If you answered a-c for Question 22, please can you provide more information on the type of records you hold on the contents of the site(s)?

18 responses were provided for this question, a selection of which is shown below:

- “Historic mapping and aerial imagery, chemical analysis of samples from the one actively eroding site.”
- “Limited ground investigation surveys undertaken on part of the site. Historical landfill records are limited as the site was unregulated.”
- “Historic OS maps. Contracts for previous land purchases. Sample boreholes and hand-dug pits undertaken as a requirement of previous development proposals. Verbal evidence from local residents.”
- “Spatial plans. Existing records albeit scant. Some detailed site investigation data.”

In total, only 2 responses reference chemical sampling / analysis or sampling of exposed material.

11 LAs have records of intrusive site investigations, borehole data or geophysical data. However, where present, these are generally limited, not present for all coastal landfill sites, or only partially cover the extents of coastal landfills.

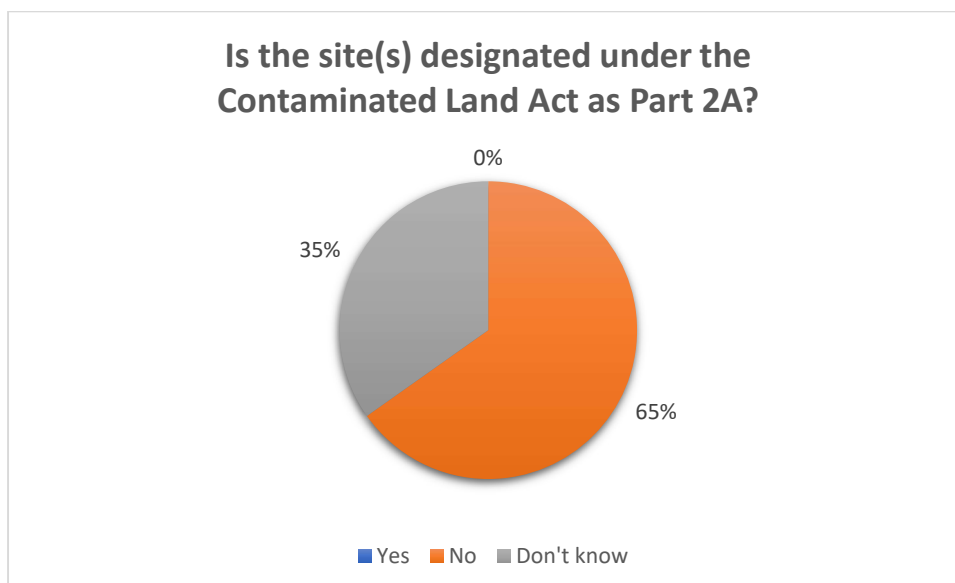
Historic and existing landfill records are scant overall, in some instances this is due to landfills previously being unregulated.

Spatial records, topographic surveys and mapping are most commonly held.

The 'word cloud' below depicts the full range of answers received in response to this question, whereby the larger the words appear, the more frequently they were mentioned.



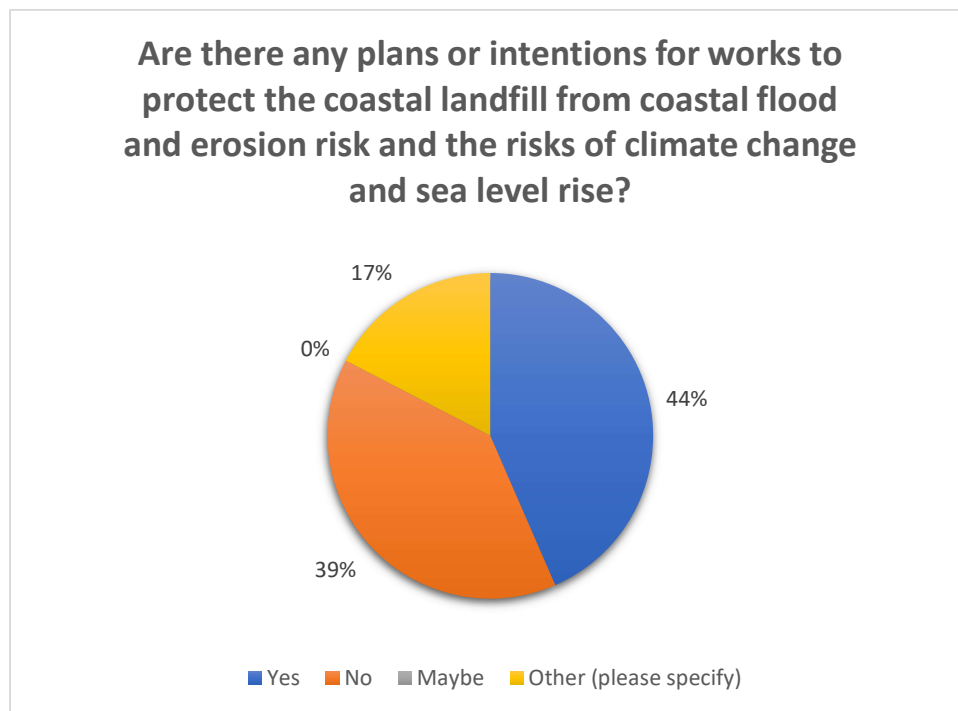
Question 24: Is the site(s) designated under the Contaminated Land Act as Part 2A?



23 responses were received for this question, with 65% of LAs reporting that their coastal landfills are not designated under Part 2A of the Contaminated Land Act, and the remaining 35% reporting that they didn't know. No LAs reported having designated contaminated land.

However, it is important to note that as detailed records on the type and precise contents of coastal landfills have shown to be sparse, some landfills may meet the requirements to be designated under Part 2A of the Contaminated Land Act, without having been formally done so.

Question 25: Are there any plans or intentions for works to protect the coastal landfill from coastal flood and erosion risk and the risks of climate change and sea level rise?

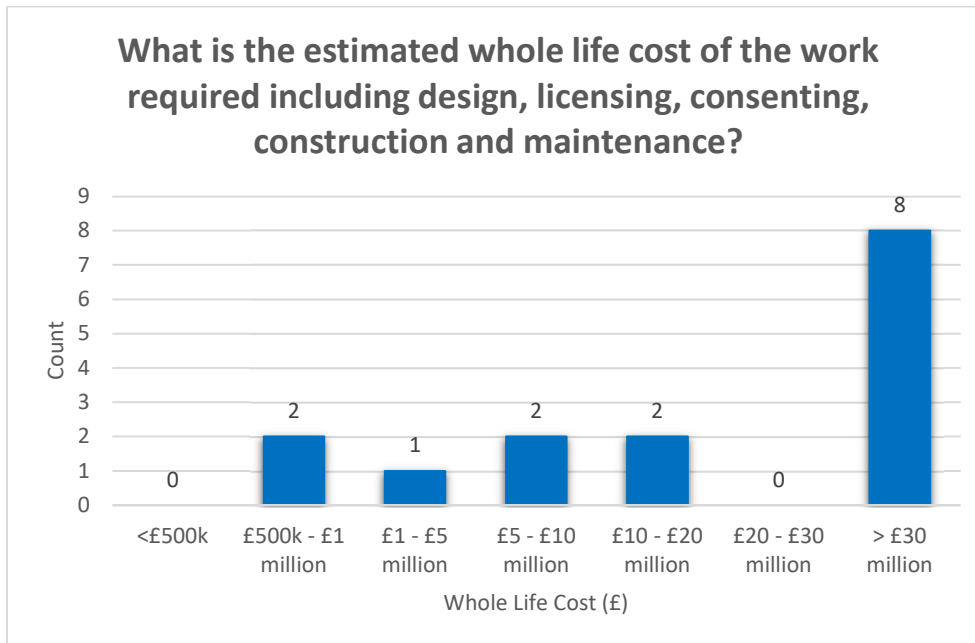


23 responses were received for this question. Responses were quite evenly split, with 44% of LAs advising that they had plans or intentions for works to protect the coastal landfills from coastal flood and erosion risk, and 39% advising they had no intentions or plans.

A further 18% responded with 'other', details of which are shared below:

- “Do minimum in the short-term including beach recycling and local adjustments of rock armourstone revetment. In the medium-term the only feasible option is minor extension and raising the height of the rock armourstone revetment. The preferred option would be more substantial works to extend and raise the revetment on the coastal margin and erosion protection to the landward face of the landfill site. However, these are not affordable to undertake.”
- “Only to the actively eroding site and limited (partial remediation) owing to budget available.”
- “Ongoing monitoring”
- “Unsure”

Question 26: What is the estimated whole life cost of the work required including design, licensing, consenting, construction and maintenance?



15 responses were received for this question. 53% of LAs reported that the estimated whole life cost of the works required would be over £30 million, whilst 13% each reported that the costs would be £500k – £1 million, £1 - £5 million and £10 - £20 million respectively.

Question 27: If you have any further comments to make on the nature of the work planned, please tell us more here:

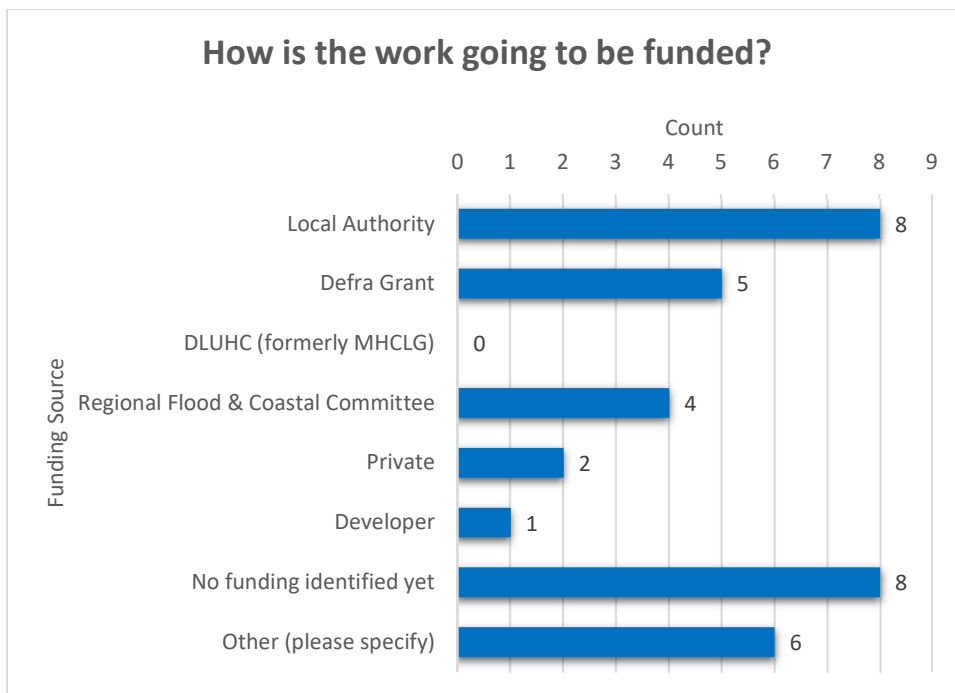
11 responses were received for this question, a selection of which are shown below:

- “Possible option to place rock armour at the foot of the cliffs to stabilise and prevent further erosion.”
- “Recommended at strategic level by a Flood & Coastal Erosion Risk Management (FCERM) Strategy. For all sites identified by SCOPAC Landfills Study, costs well in excess of £30 million to implement defences in front of them.”
- “IRF Project - innovative measures still to be finalised.”
- “Only works being carried out here will be clearance of material deposited on the beach from the site when this is considered necessary.”

The ‘word cloud’ below depicts the full range of answers received in response to this question, whereby the larger the words appear, the more frequently they were mentioned.



Question 28: How is the work going to be funded?





19 responses were received for this question. The responses were quite evenly split, with Local Authority funding and no funding identified yet each accounting for 42% of funding, despite 42% of LAs who answered Question 11 advising that they did not have the budget to monitor and maintain defences in front of coastal landfills.

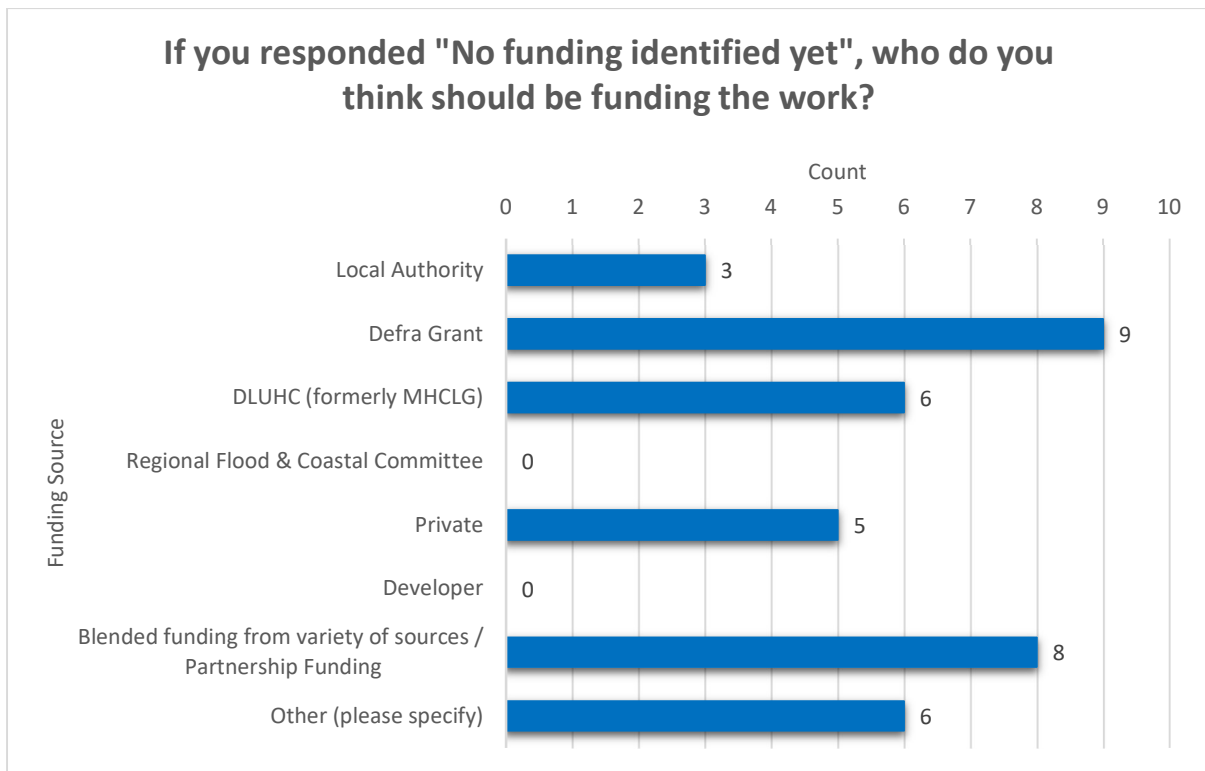
Defra Grant accounted for 26%, Regional Flood and Coastal Committee accounted for 21%, and private and developer funding accounted for 11% and 5% respectively. No LAs identified DLUHC (Department for Levelling Up, Housing & Communities) as contributing towards the funding of works.

'Other' responses are provided below:

- "There are few sites that have potential to be funded via development but no confirmation yet."
- "Studies being progressed funded. Everything else unfunded."
- "No funding identified for rest of sites."
- "Study funded by Regional Flood & Coastal Committee (RFCC). No funding from anything else at present to progress sites."
- "N/A presently" (reported twice).

Where works do have the potential to at least partially qualify for funding, there can be uncertainties in confirming this. Funding may only be present for studies and/or to only conduct works in certain locations, but may not be available to fully progress and deliver all necessary works in all locations.

Question 29: If you responded "No funding identified yet", who do you think should be funding the work?

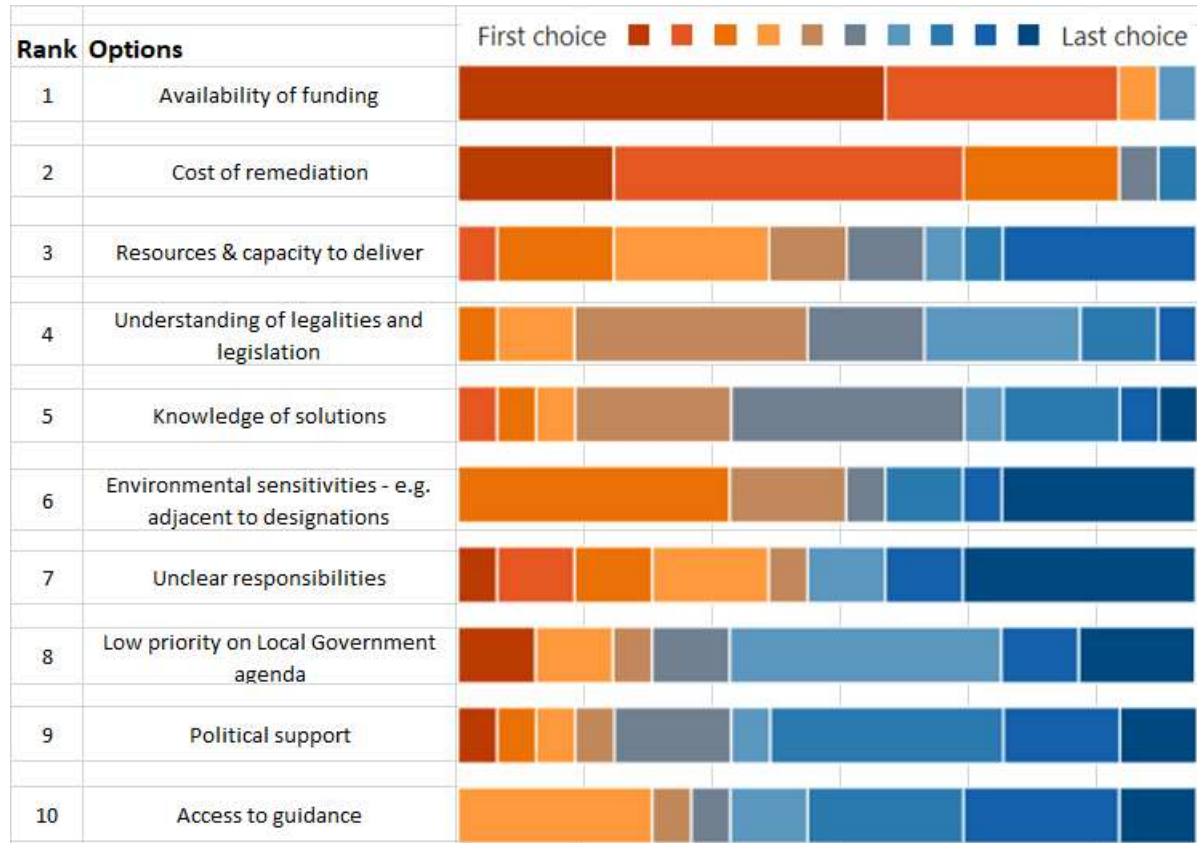


15 responses were received for this question. Responses were again quite evenly split, with 60% believing that Defra Grants should be funding these works, and 53% believing that funding should be obtained from a variety of sources or Partnership Funding. 40% felt that DLUHC should be providing funding, despite this funding not currently being received by any of the LAs surveyed, for projects of this kind.

40% also responded with 'other', the comments from which are shown below:

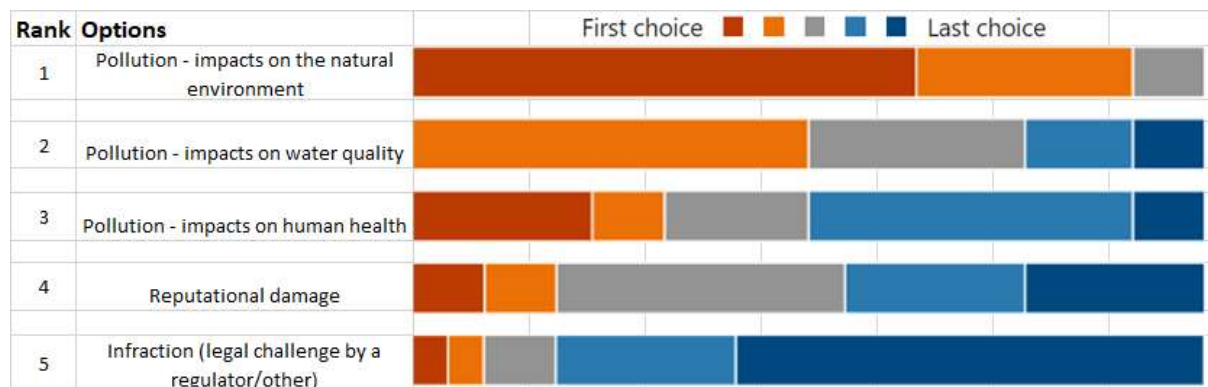
- "Most needs to come from Defra + potentially DLUHC for maintenance - ringfenced for defence assets." (comment applies to 5 LAs)
- "N/A"

Question 30: We are already aware of several barriers / challenges when trying to deliver solutions to coastal landfill. What do you find are the most prevalent in your LA area? In your LA area, please rank in order with 1 being the most challenging.



Availability of funding was ranked as the most prevalent barrier to delivering solutions to coastal landfills, selected first by 58% of respondents and second by 32%. Cost of remediation was ranked as the second main barrier, selected first by 21% of respondents and second by 47%. Resources and capacity to deliver was ranked the third most prevalent, whilst access to guidance was ranked the least prevalent barrier to delivering solutions.

Question 31: What are your main concerns about the coastal landfill sites in your area if no funding was available to continue to protect them from flooding or erosion, or to move them? Please rank with 1 being the most concerning.



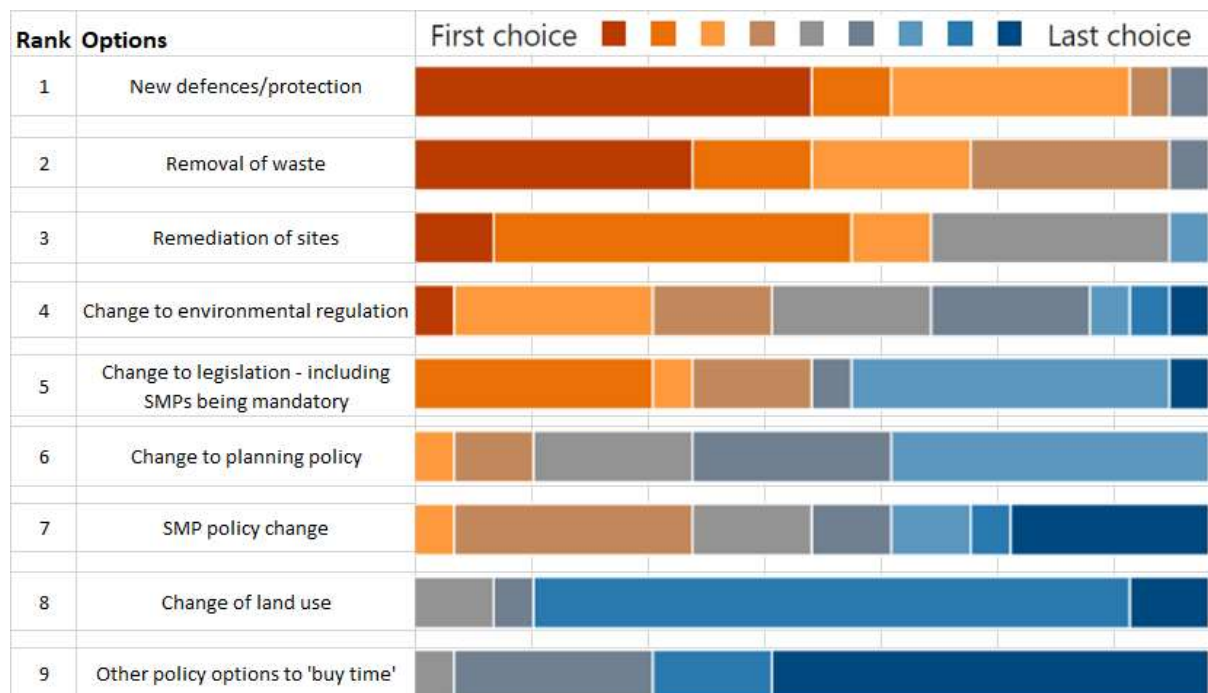
Pollution – impacts on the natural environment was ranked as the greatest concern by respondents, selected first by 64% of respondents and second by 27%. Pollution – impacts on water quality was ranked as the second main concern, with 50% of respondents selecting this second and 27% selecting this third. Pollution – impacts on human health was ranked as the third main concern, whilst infraction (legal challenge by a regulator/other) was ranked as the least concerning.

Question 32: If there are other concerns, please tell us about them here:

A further 3 responses were received for this question, and are shown below:

- “It is a huge problem for future generations especially - everyone is focused on sea level rise which we have little control over, but this, we have the potential to solve most of it.”
- “Biggest concern is of course environmental impacts and potential for human health impacts. Alongside this the concern is significant reputational damage to local and national government / politics particularly given current political climate. Having known about issues for so long with no central policy or support for LAs to deal with this legacy issue which is only going to get worse with climate change.” (comment applies to 5 LAs)
- “Leachate from former industrial sites is entering the sea. Eroding colliery spoil tipped less than a mile from the landfill is eroding into the sea.”

Question 33: What would be the best outcome / solution for managing the coastal landfill in your LA area?



New defences/protection was ranked as the best outcome / solution for managing coastal landfill, selected first by 50% of respondents and second by 10%. Removal of waste was

ranked as the next best outcome, selected first by 35% and second by 15%. Remediation of sites was ranked third, whilst other policy options to 'buy time' was ranked last.

Question 34: Please use this free text box for additional comments here, including ideas relating to other policy options which might buy time:

A total of 4 responses were received for this question and are shown below:

- “This needs something big to happen via Central Government.”
- “Have put new defences/ protection first because this is needed urgently. SMP becoming mandatory would require funding to go with it which is why this is second. Other options like remediation or removal are best long-term outcomes however will take decades to achieve and not possible in some locations with development on top or due to landfill tax. To buy time new defences are needed now to buy time. Also there are homes at risk of flooding in some areas as well so there are win-win solutions with defences now to buy time. This needs funding now, urgently by Defra and other government agencies.” (Comment applies to 5 LAs)
- “Only options 1, 2 and 3 (removal of waste and remediation of sites or new defence/protection) would remove the issue in these circumstances, and it is not feasible that new defences would be acceptable as a solution.”
- “The cliff continues to naturally erode and the removal of waste would not be possible for health and safety reasons. Management is likely to remain being the removal of debris once it has been deposited on the beach.”

The responses demonstrate a clear need for support and funding for Local Authorities from Central Government, in order to be able to effectively and sustainably manage the situation with long-term solutions.

Question 35: Are you willing to share any case studies on the coastal landfill sites in your Local Authority area(s)?

15 responses were received for this question, with 73% of respondents willing to share case studies in some form, where this information is known and is not sensitive. 1 LA has already done so, in the case of Lynemouth. The remaining 27% who responded did not have case studies to share at this time.

Question 36: Is there anything else you wish to share about coastal landfill in your LA area(s)?

A total of 5 responses were received for this question, including 2 'N/A' responses. The information shared in these responses is shown below:

- “This document was produced as a result of Trow Quarry although SIG is probably aware already - [Guidance on the Management of Landfill Sites and Land Contamination on Eroding or Low-Lying Coastlines \(C718\)](#)”
- “Subject of [SCOPAC Landfills Study](#) and NERC research. High priority for our region. Homes also at risk for sites being progressed to design.”
- [Future Challenges of Coastal Landfills Exacerbated by Sea Level Rise](#)

- [Coastal Landfill and Shoreline Management: Implications for Coastal Adaptation Infrastructure \(Case Study: Lyme Regis\)](#)

Question 37: Are you willing to be contacted to follow-up on any of the responses in this questionnaire?

21 respondents answered this question, with all answering 'yes'. Those who have provided email addresses will be followed-up with.

Question 38: Would you like to be kept informed of the outputs of this questionnaire?

21 respondents answered this question, with all answering 'yes'. Those who have provided email addresses will be followed-up with.

Question 39: If there is anything further that you would like to add, please do so below:

A total of 9 responses were received for this question, a selection of which is shared below:

- “So much information now exists it’s hard to understand why government is not acting. Particularly in light of 25-year Environment Plan, Defra policy statement, FCERM Strategy, Call to Arms, RFCC and CGN and LGA SIG all calling for action. Will it only take an environmental disaster to gain action and policy change? Or perhaps worse human health impacts? Government need to act now and urgently before this happens somewhere in the country!!” (comment applies to 5 LAs)
- “Link to [BBC News story on the Eleni V oil tanker](#), which sank off the coast of Norfolk in 1978. This gives the context to this oil spill and oil which washed up on the beach in between Gorleston and Hopton in 2016. In 2014 Great Yarmouth Borough Council commissioned test bore holes between Gorleston and Hopton, finding oil along a small stretch and to a limited depth. It has been suggested that since then the oil may have gone through repeated phases of exposure and may have broken down through natural attenuation.”
- “We will continue to review the data we hold on our area and update if necessary.”