

This Report will be made public on 13 May 2025

Report Number **C/25/01**

To: Cabinet
Date: 21 May 2025
Status: Key Decision
Responsible Officer: Aarron McKinney – Engineering & Buildings Manager
Andy Blaszkowicz – Director, Housing & Operations
Cabinet Member: Councillor McConville, Cabinet Member for Assets and Local Government Reorganisation

SUBJECT: Remediation of the Landslides at The Leas, Folkestone

SUMMARY: Over the Autumn/Winter period of 2023/24 two landslides occurred along the frontage of the Leas Cliff in Folkestone. This period saw some of the highest levels of rainfall on record and as a result the cliffs which are formed of poorly cemented Folkestone Formation sands were particularly susceptible to slips.

This report offers an update on the activities that have been undertaken to identify the cause, identify areas at risk, options for remediation and the ongoing design works for tender.

REASONS FOR RECOMMENDATIONS:

Cabinet are asked to approve the recommendations of the report in order to mitigate the impact of the landslides from 2023/24 and ensure the cliffs are protected from further erosion moving forward.

RECOMMENDATIONS:

- 1. To receive and note report C/25/01.**
- 2. To note the works undertaken to date to mitigate the effects of the landslides in 2023/24.**
- 3. To note that officers will be issuing a tender for cliff stabilisation works in Summer 2025 for commencement of the works in October 2025 to the landslip above the Coastal Park Play Area.**
- 4. To note the aim to complete further works to the Cow Path landslide in 2026.**

1. BACKGROUND

- 1.1 The first landslide occurred above the Cow Path in November 2023, following a significant rainstorm. The landslide caused the concrete path edging and approximately 1m depth of loose sand particles and sandstone to slip down the frontage. This caused significant damage to the vegetation below the intermediate footpath (Cow Path) and undermined the Madeira Walk footpath at the summit.
- 1.2 The second landslide occurred to the side of The Vinery directly above the cliffside towers of the Coastal Park play area in February 2024. Following a sustained period of heavy rainfall and during a particularly heavy windstorm the mature tree at the top of the cliff destabilised and the surrounding cliff face gave way causing the landslide to occur. In this instance early indicators were found in the tarmac footpath in the days prior to the slip of parallel running cracks enabling Heras fencing to be erected restricting access to the top and bottom of the cliff. Fortunately, when the original play area was built a king post steel RSJ boundary wall was installed which caught the majority of the slipped material behind preventing damage to the structures beneath.
- 1.3 Resources to date have focused on the remediation and protection measures for the landslide directly above the Coastal Park Play Area given the increased risk to users below and the proposed play area refurbishment in 2025/26 that is dependent on these works being undertaken. Consulting engineers have been appointed to provide detailed drawings, specifications and risk registers up to tender stage.
- 1.4 The landslide above the cow path whilst of the same formation presents different challenges in that the material primarily consists of fine sands, has restricted access from below due to the mature trees and will likely require a different remediation methodology.
- 1.5 Public interest in the works remains high with various business owners, community groups and members of the public expressing concern about the perceived lack of progress, continued closure of sections of Madeira Walk and visual impact of the landslides when viewed from The Leas.
- 1.6 The current programme of works will see contractors on site following the removal of play area equipment in October with the intent of completing all works by the end of the calendar year.

1.7 Location Maps:

Coastal Park Play Area February 2024 – Vinery



Cow Path – November 2023



2. WORKS TO DATE

- 2.1 Above each of the landslides on Madeira Walk heras fencing has been erected to prevent access to the potentially unstable areas. Additionally, heras fencing prevents access along the Cow Path which is a circuitous route down from the Leas, the alternative being a set of steps.
- 2.2 A Lidar Drone Survey assessed the 1km cliff face providing a relatively accurate topographic survey of the cliffs to identify steep formations that could be used to identify further areas of concern.
- 2.3 A visual slope assessment (VSA) provided an initial assessment of the cause of the landslips and along with the topographic information identified two other locations that could be at greater risk of landslips in the future. This

report also provided an opinion on the benefit of vegetation in particular mature trees. The report highlights a need for a balanced approach where trees are encouraged for the beneficial properties of erosion mitigation but also reducing the height (and therefore load) of larger mature trees. Mature trees towards the summit of the cliff having the greatest potential to cause failure of the cliffs.

- 2.4 Following on from this a tree survey was undertaken to identify mature trees along the Leas particularly those in areas that had been highlighted to be monitored that may need to be reduced or removed where appropriate. The inherent difficulties with accessing the cliff face limit the options available to the council, however a programme of works was undertaken throughout 2024 at the Zig Zag path and a mature tree adjacent to the Vinery was able to be pollarded using the mobile access platform from the upper leas path. A tree management programme will be on-going.
- 2.5 The council commissioned a geotechnical expert to prepare a remediation options appraisal report. This report further considered the background to the site, it's geological make up and history of landslides. Considered the likely cause, attributing increased porosity of the soil from sustained rainfall and localised factors from the lack of cliff drainage and collapse of the large tree. The report goes on to suggest possible solutions for remediation.

3. PROPOSED REMEDIATION METHODOLOGY – LANDSLIP ABOVE PLAY AREA

- 3.1 The report identified five key zones of interest/risk following the slip that needed to be addressed to achieve a successful project.

Zone A – summit of the cliff, supporting the Madeira Walk footpath and Vinery structure. An exposed cliff with steep slope angles for 2-3m. With similar angles to either side of the failure where the cliff is still stable. (suggesting a need to expand the planned works 5m either side). This is a very steep section at a high risk of failure.

Zone B – below the summit consists of layers of overhanging blocky sandstone with intermittent weathered zones containing sand. This zone presents as a risk of rockfall.

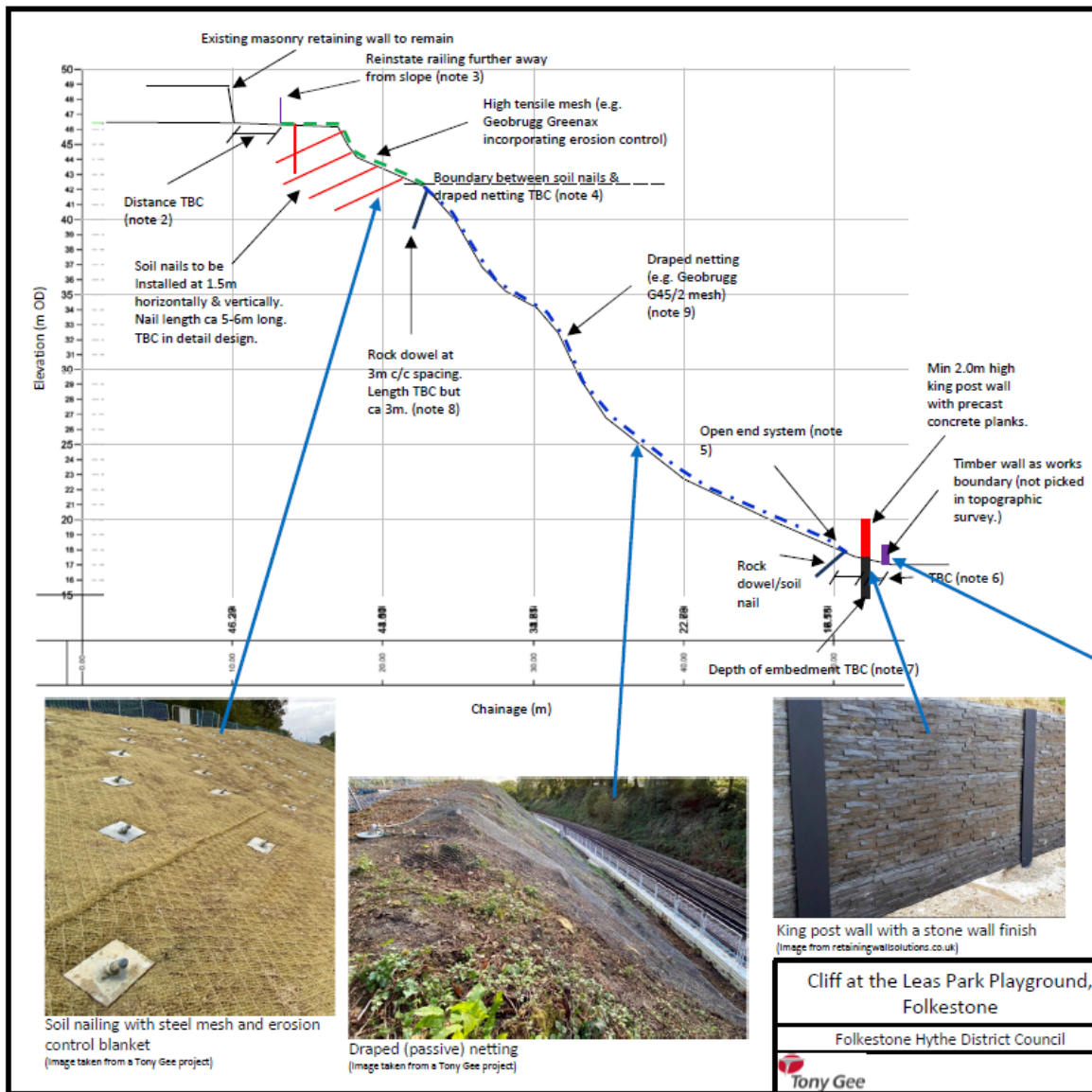
Zone C – The toe of the cliff consists of landslide debris and is possibly the Folkestone / Sandgate formation boundary. Condition of the slope and extent of slip unknown due to the debris. Through the removal of this material the cliff will be steeper and de-vegetated.

Zone D – Existing failed steel pillar frame and timber fence retaining landslip materials. The foundation details of this structure are not known and may destabilise during debris removal works.

Zone E – Closeness of the cliff to the playground. Some playground equipment (towers) located near the cliff toe. This presents a risk due to the potential instability of the cliff and high-risk section in Zone A. This will be

addressed as part of the play area refurbishment project with these elements removed.

- 3.2 The steep cliff from approximately the middle of the cliff to the crest comprising poorly cemented sandstone (Zone A) is currently exposed to weathering. Further erosion would result in further collapse of the footpath above. As a result the sections need to be reinforced. Due to the site constraints the most feasible strengthening option is to use high-strength steel mesh and soil nails together with steel plates to prevent a wedge failure.
- 3.3 The second section (zone B) consisting of overhanging rock and intermittent weathered zones can be protected with a 'containment' system. The planned solution is to use a draped netting to reduce the energy of fast-moving landslides. Open ended netting allows for ongoing maintenance to collect and remove landslip materials or rock in case of a landslide. This system can be adapted and extended to Zone C if appropriate once the landslip debris has been removed.
- 3.4 At the toe of the cliff the steel pillar wall which has failed following the landslip and the timber fence will be removed along with the debris without disturbing the underlying slope.
- 3.5 To provide further protection at the base of the cliff Zone E an additional 2m high king post retaining wall will be installed to prevent any landslip material within the containment system from reaching the play area and to allow a clear space behind (where the towers sit) for the collection and clearing of materials in the future.
- 3.6 The proposed remediation methodology is shown in the diagram below.



Proposed remediation methodology

4. CONSULTANT BRIEF

4.1 FHDC have commissioned the following services to enable the works to be tendered in preparation for commencement on site in October 2024:

- Preparation of ground investigation specification and laboratory soil test scheduling - To be commissioned by F&HDC.
- Review of the factual ground investigation report and derivation of soil parameters for the design.
- Tender design of soil nails, steel netting and facing plates at the top of the cliff.
- Tender design of draped netting including rock bolts and steel mesh with its connections.
- Boundary wall specification and foundation design based on the wall type preference by F&HDC.
- Preparation of geotechnical report including assessment of design soil properties and the design of soil nails, draped netting, boundary wall foundation and carbon calculations.

- Preparation of soil nail, rock bolt and netting specifications for construction.
- Production of tender design drawings and preparation of Construction and Design Management (CDM) risk register.
- Responding to technical enquiries from bidding contractors on behalf of F&HDC.

5. OTHER CONSIDERATIONS

- 5.1 It is unclear whether the project will require a full planning application process to be conducted, this could have implications on the overall project implementation and is being worked through by Officers. An oral update will be given at the cabinet meeting.
- 5.2 To enable the works to proceed access to the toe of the cliff will be required to remove the landslip debris. This cannot be undertaken until the existing play area has been removed. Correspondingly, the new play cannot be installed until the cliff stabilisation works are completed. It is therefore critical that both projects are delivered effectively and maintain current programme targets.
- 5.3 The public interest in this project is high, concerns have been raised about the appearance of the landslides and the effect this has on visitors to the district. It is therefore critical that this project is completed in a timely manner with the Cow Path landslide repair to follow shortly thereafter.
- 5.4 In addressing the concerns raised, a ten-year maintenance and improvement plan is being prepared to cover the whole of the Leas area. In this process officers have identified works required to retaining walls along Madeira Walk, pulhamite repairs to the Zig Zag Path, resurfacing throughout, improved surface water drainage attenuation and works to streetlight columns and other furniture. This will be a separate project subject to further reports that will require funding allocation through CIL, S106 and possibly capital allocation.
- 5.5 Following Cabinet approval there will be further communication with the public with regards to design and time frames.

6. FINANCE

- 6.1 Commissions to date have been allocated from existing revenue budgets, however future commissions will be required to be allocated to the capital code NJ44. The budget is made up of £150,000 capital allocation and £150,000 Community Infrastructure Levy. Following the tender of the play area landslide we will have a greater understanding of the cost of implementation, which will enable a greater degree of certainty for the works to the Cow Path landslide in 2026/27.

The priority area will proceed, following the completion of the tender process officers may be required to submit a further report to request additional budget to undertake works to the Cow Path Landslide.

- 6.2 The table below sets out the tasks associated with the project together with the cost detail.

Commission	Cost	Status
Lidar topographic drone survey	£6,550	Complete
Visual slope assessment	£2,800	Complete
Options appraisal report	£7,940	Complete
Stage 2 Technical design appraisal and tendering	£22,380	Commissioned
Soil investigation survey and window sampling	£7,500	Estimated
Construction Phase – Play Area Landslip	£125,000 - £150,000	Estimated
Construction Phase – Cowpath Landslip	£100,000 - £125,000	Estimated

7. RISK - A summary of the perceived risks follows:

Perceived risk	Seriousness	Likelihood	Preventative action
Delay of project affecting the implementation of the play area refurbishment scheme	High	Low	Officers involved in both projects working closely together to ensure projects are in step in the authorisation, procurement and construction phases. Will adopt a master programme approach.
Not stabilising the bank resulting in further landslides and retreat of cliff face	High	Medium	Ensure the project proceeds and meets its intended goals.
Budget – the costs for these schemes is difficult to determine due to site complexities	High	Low	Despite the access constraints of the sites, it is felt that with the removal of the play equipment below the existing budget will support the works tendered. The concern currently lies with the remediation of the second landslide above the cowpath in 2026/27 and whether it is achievable within the remaining budget.

Health & Safety risk – access below cliffs	High	Low	Access to the toe and summit of the cliffs is currently restricted.
Weather causing delays to the programme	High	Medium	Inclement weather could result in delays to the project. The current programme aims to complete the project prior to the winter period to minimise this risk.

8. LEGAL/FINANCIAL AND OTHER CONTROLS/POLICY MATTERS

8.1 Legal Officer’s Comments (NM)

The Council needs to deal with the issue of landslide as this could cause harm to human health, local property and associated infrastructure and the wider environment.

8.2 Finance Officer’s Comments (DL)

A budget of £300k has been approved as part of the 2025/26 medium term capital programme to enable these works to be completed. Should the investigations and risks outlined in the report increase the costs of the project it may be necessary for additional funding to be identified and approved.

8.3 Diversities and Equalities Implications (GE)

There are no equality and diversity implications directly arising from this report, therefore an Equalities Impact Assessment is not required.

8.4 Climate Change Implications (AT)

No direct climate change implications arising from this report. The climate change impacts of the stabilisation works will be considered as part of the procurement process.

The risks of these events occurring are likely to increase over the near future due to the effects of climate change; for example, Kent County Council’s draft Climate Change Adaptation Plan 2025-2028 recognises that: *“... changes to average temperatures, precipitation, and sea levels will increase the variability of weather that Kent experiences. This is likely to lead to both positive and negative impacts that will increase in frequency and intensity over time. Some of the climate hazards that are likely to occur in Kent include: Landslips and soil erosion ...”*

The district council’s revised Corporate Risk Register (March 2025) includes a new climate change risk (C8) which is scored as ‘high’. This measures the council’s preparedness for emergency responses to the impacts of extreme weather events.

9. CONTACT OFFICERS AND BACKGROUND DOCUMENTS

Councilors' with any questions arising out of this report should contact the following officer prior to the meeting

Aarron McKinney – Engineering & Buildings Manager

Telephone: 01303 853309

Email: aarron.mckinney@folkestone-hythe.gov.uk

The following background documents have been relied upon in the preparation of this report:

None.

Appendices:

None.