	REPORT TO CABINET **TO BE HELD ON** **14 FEBRUARY 2017**
	Key Decision **YES** **Forward Plan Ref No:**
Corporate Priority **Creating quality environments**	**Cabinet Portfolio Holder** **Cllr Mike Cockerill**

REPORT OF THE CHIEF EXECUTIVE – 17/42

WARDS AFFECTED: FILEY

SUBJECT: FLAT CLIFFS URGENT SLOPE STABILISATION SCHEME

RECOMMENDATION (S):

Cabinet is recommended to :

1. Accept £572,000 of Coast Protection grant funding;

2. Approve the Flat Cliffs Urgent Works

3. Provide authority to enter into contract with a consultant from the YORconsult Framework to project manage and tender a design and build contractor and supervise the works.

4. delegate authority to the Portfolio Holder for Project Leadership, Harbours, Coast and Flood Protection, in consultation with the Director (LD), to receive a report on the outcome of the tender analysis once it is concluded and, if appropriate, approve entering into a contract with the recommended contractors.

REASON FOR RECOMMENDATION (S):

There are 45 residential properties built on the terraces of an undercliff system at Flat Cliffs. The access road, which is at risk of loss, is the sole means of access to the hamlet. A capital scheme is therefore required to undertake urgent, but limited,

intervention works involving coastal protection and coastal slope stabilisation. If the scheme is not progressed coastal erosion and coastal landsliding at the sole access road to the hamlet of Flat Cliffs will cut-off the coastal community and force residents to vacate their properties.

HIGHLIGHTED RISKS:

As shown in Appendix A.

1. INTRODUCTION

1.1 The hamlet of Flat Cliffs, which contains 45 properties on privately owned land, is situated within the upper and lower terraces of an extensive undercliff landslide system that is formed in glacial till. Further inland of the hamlet is the Primrose Valley Holiday Village. Access to the hamlet is via a sole access road which passes into and through the Holiday Village and then runs parallel with the coastline into the hamlet.

1.2 The coastal community of Flat Cliffs is well informed and fully understanding of the risks that exist from coastal erosion and coastal slope instability through a prolonged period of engagement and awareness-raising by Scarborough Borough Council with the Flat Cliffs Residents' Association, over the past 10 – 15 years. This has been further informed by their active involvement in the development of both the Flat Cliffs Stability Assessment & Management Plan (2012) and the Filey & Cayton Bay Coastal Strategy (2016).

1.3 However, during the development of the recent Coastal Strategy, the Flat Cliffs Residents' Association indicated that improved local stabilisation and drainage works to the 'pinch point' where shallow landsliding has cut the headscarp back to within a very short distance of the access road, potentially together with some form of temporary 'soft engineering' defence at the cliff toe at this location, may assist in 'buying more time' before the inevitable property losses are incurred, enabling adaptation plans to be developed and implemented by each individual affected.

1.4 This approach has been confirmed by the Coastal Strategy (the development of which was undertaken with engagement of key inidividuals and organsiations) and targetted engagement on the issues specifically at Flat Cliffs with Natural England who confirms this to be an environmentally acceptable solution, subject to any such works being limited in both duration and geogrpahical extent

2. CORPORATE AIMS/PRIORITIES AND THE COMMUNITY PLAN

2.1 The scheme will underpin a number of the Council's Corporate Plan aims:

Aim 1: Developing a Safer and Stronger Community
Aim 2: Building a Prosperous Community and Creating Quality Environments

3. BACKGROUND AND ISSUES

3.1 Investigations into coastal erosion and coastal slope instability were first undertaken in 2001 to inform the development of the original *Filey Bay Coastal Strategy* (2002). At that time there was evidence of cracking and subsidence in the access road and heave of the pipeline along the shoreline.

3.2 During inspections in July 2004 there was evidence of damage to both property and infrastructure throughout Flat Cliffs, most pronounced in extent and severity at the north end of the complex, as evidence of a non-rotational mudslide failure with characteristics of differential rates of backtilting and downslope translation. By September 2009 there was evidence of localised toe erosion of the cliffs and fresh cracking in the access road.

3.3 Recent cliff stability analyses (Flat Cliffs Stability Assessment and Management Plan – Ground Investigation and Monitoring Report, 2012) indicate that the northern section of Flat Cliffs (where the access road is close to the headscarp) is unstable (factor of safety ≈ 0.9) and that the central and southern sections of Flat Cliffs are marginally stable (factor of safety ≈ 1.1 – 2.0).

3.4 If the access road were to be severed, there is no alternative means of the residents gaining access/egress to/from their properties and, in effect, the community is lost even if their properties remain (for the time being) unaffected directly by erosion. If people elect to remain living there, there is no means for emergency services to access the site or refuse removal.

3.5 If no intervention is taken, the ongoing cliff instability, linked to both coastal erosion at the cliff toe and ground movements within the coastal slopes, will lead to imminent loss of the sole access road to Flat Cliffs. This would in effect 'write-off' the coastal community with immediate effect, rather than in 20 years time when the onset of direct property loss is expected.

3.6 In addition to the community at Flat Cliffs, there are some residential properties at The Fold in Primrose Valley (immediately to the south of Mile Haven) and some parts of the Primrose Valley Holiday Village (including some of the permanent buildings which house core facilities) that will become at risk from erosion and landsliding in the medium to longer term.

3.7 It should be noted that the above projections are based on the best available information relating to coastal recession (erosion and landsliding). Processes of landsliding are probabilistic in nature and difficult to predict, being governed by antecedant groundwater conditions and how this is affected by storm-related effects such as heavy rainfall and wave action at the toe of the coastal slope

4. CONSULTATION

4.1 The project will be led by Scarborough Borough Council (SBC) as the Coast Protection Authority under the Coast Protection Act (1949), working in close association with the Flat Cliff Residents' Association, Yorkshire Water (who

have a strategically important asset located within the hamlet), Bourne Leisure (who are neighbouring landowners) and, to ensure the limited intervention works are environmentally acceptable, both Natural England and the Environment Agency.

4.2 Discussions have been held with Natural England at Area and National levels throughout development of the business case and we have received a Letter of Comfort from Natural England, which states that the preferred option is likely to lead to an environmentally acceptable solution as long as the limited intervention works are limited in both duration (to no more than 20 years) and geographical extent (to only the localised pinch point of erosion at the access road).

5. ASSESSMENT

5.1 In light of ongoing coastal changes and longer-term recession trends, the adopted SMP2 policy for the broader Policy Unit 32.1 (Hunmanby Sands) is 'No Active Intervention' over the 100 years covered by the SMP2. However the SMP2 acknowledges that *"the issues relating to Flat Cliffs [within this broader SMP2 Policy Unit] are recongised to be very difficult, both in terms of the residential communities and in terms of broader value to the region of the large holiday parks. In the longer term, over the 100 year period and beyond, hard linear defence of these areas, which is what would be required to stabilise the cliff and prevent any property loss, would be considered unsustainable … Despite the significant economic loss at Flat Cliffs and the impact on Primrose Valley Holiday Village, the long term policy for the area should be one of No Active Intervention. To achieve this, but still allow adaptation in respect of both residents and the more general land use of the area, requires prompt realistic thought and discussion as to how the threat to people, property, infrastructure and business is to be managed; over the next few years in terms of access to the properties at Flat Cliffs; over the next 5 – 20 years with respect to the actual loss to properties and the management of safe access between the cliff top and the beach; and, over the longer term, as to the impact and future operation of the holiday park."*

5.2 Six feasible options were considered in detail, including the 'Do nothing' option as the base case for appraising against and the 'Do minimum' option of continuing present-day practice with proactive inspections and reactive maintenance.

Option 1: Do nothing

5.3 This option would involve no further maintenance or capital works or management actions for the purposes of flood and coastal erosion risk management. The 'Do nothing' option would not be a truly zero cost option because some minor works are likely to be required for reasons of public health and safety associated with deteriorating and collapsing infrastructure, services and buildings falling onto a public amenity beach in order for the Council to comply with its duty of care. It is assumed that under this option, the access

road will be lost in Year 0, as the headscarp is currently immediately adjacent to the road surface at the pinch point of erosion.

Option 2: Do minimum

5.4 This option would involve ongoing management activites, such as raising awareness of erosion and instability risks amongst the coastal community, land use planning and development control to avoid worsening existing risks, best practice slope management to try and reduce the probability of a landslide (in the residential areas within the undercliff), monitoring and inspection and *in situ* instrumentation linked to trigger thresholds for contingency planning and, when required, emergency response planning.

Option 3: Limited intervention (10 Years)

5.5 This option would involve limited intervention works at the 'pinch point' of headscarp recession along the access road in attempt to delay its loss by 10 years. The works would involve a combination of localised and time-limited intervention measures such as slope stabilisation and toe protection. The option would intend to delay the onset of Do Nothing damages by 10 years. However, these limited intervention works could not prevent larger musdlides from occuring along deeper-seated rotational planes.

Option 4: Limited intervention (15 Years)

5.6 This option would be as Option 3, but intended to have an effectiveness for 15 years, thus delaying the onset of Do Nothing damages by 15 years. The whole life costs of this option are likely to involve some (small-scale) repairs at future intervals.

Option 5: Limited intervention (20 Years)

5.7 This option would be as Options 3 and 4, but intended to have an effectiveness for 20 years; this being the time at which some of the properties within the community are likely to become affected directly by coastal erosion. This option will delay the onset of Do Nothing damages by 20 years but, like Option 4, will require some (small-scale) repairs at future intervals.

Option 6: New access road

5.8 This option would involve constructing a new access road to the hamlet and abandoning the existing access road. The new road would have to have an effective life of at least 20 years in order to sustain the community until some of the properties become affected directly by coastal erosion. It would therefore require to be located away from the zones of projected coastal recession and greatest slope instability.

5.9 The preferred option is **Option 5: Limited Intervention (20yrs)**. The intention is to delay the loss of the access road for a duration of 20 years through limited intervention works. At this point in time, it is expected that properties within the

hamlet will start to become directly affected by erosion and coastal landsliding and therefore residents will have started to adapt to the coastal change through demolition, rebuild in inland areas and relocation. The inherent uncertainties regarding the timescales of the effectiveness of local intervention works (in the context of the probability of a large landslide event occuring at any given time) have been addressed in sensitivity testing.

5.10 The works proposed are intended as urgent, but limited, intervention works to 'buy more time' before the access road is lost at an existing 'pinch point' of erosion, providing residents sufficient time to plan for adaptation to coastal change (e.g. relocation inland) in the medium to longer term (i.e. 20 years^{+}). Due to this, the business case focused on local works of a limited geographic extent, intended to have a maximum lifespan of 20 years (the projected timescale within which erosion is likely to start to cause direct loss of properties within the hamlet). Due to this, implementation of the works will not compromise any future strategic decisions along the frontage, especially those relating to medium to longer term adaptation of the community to coastal change.

5.11 The local intervention works will involve a combination of slope stabilisation (using drainage, erosion control matting and re-seeding of the affected slope) and sand-filled geotextile bags for the toe protection.

Procurement

5.13 Consultants will be appointed to undertake further environmental surveys/ assessments as required by Natural England, site investigation, design and make applications for planning permission and Marine Licence (with accompanying EIA, if required).

5.14 Once the design has been completed, a a report will be brought back to approve appointment of Contractors to deliver the works, with supervision from the Consultant.

5.15 Due to the need for two different specialist contractors, each undertaking relatively low value works, it is likely that the slope works and the toe protection works will be undertaken under two separate contracts. This also provides the opportunity for the slope stabilisation works to proceed as soon as planning permission is received, with the toe protection works to follow once the Marine Licence (if required) is received, which is likely to have a longer determination period. However, both elements of the works will be undertaken as soon as practically possible with substantial completion aimed to be before the typically wetter winter season.

5.16 It is therefore proposed that, subject to the satisfactory conclusion of the tender process, Cabinet delegate authority to the Portfolio Holder for Project Leadership, Harbours, Coast and Flood Protection in consultation with the Director (LD) to receive a report on the outcome of the tender analysis and to approve entering into a contract with the recommended contractors if appropriate

6. IMPLICATIONS

(a) Financial

6.1 The Flat Cliffs Urgent Works will be fully funded by Defra Flood Defence Grant in Aid. The awarded grant is £572,416; this includes a £177,763 risk contingency.

6.2 The estimated scheme costs as detailed in the EA approved business case are:

Professional fees	£54,710
Project staff costs	£40,000
Construction	£212,885
Site investigations	£50,000
Contingency	
EIA	£25,000
Site Supervision	£12,058
Contingency	£177,763
Total	**£572,416**

6.3 It shoud be noted that the scheme qualifies for a maximum FDGiA of £783k due to the value and number of the assets protected. Therefore although sufficient grant has been secured for the full capital costs of the scheme as set out in the approved business case, the option to attract additional grant should the contingency be exceeded is available with prior agreement from the Environment Agency.

6.4 The cost estimates have been calculated based on previous and ongoing schemes of similar nature and scale, alongside published cost data (Spons). In addition, specialist contractors or specialist suppliers have been engaged during the preparation of the business case to advise on costs, working methods and time-effectiveness of solutions.

6.5 The cost estimates have been based on concept designs (appropriate at PAR stage), not detailed designs, and could therefore increase or decrease at detailed design and construction stages. Due to this an appropriate optimism bias of 15% has been added to each cost estimate at the option appraisal stage to reflect this uncertainty and other potential risks. A detailed Risk Register has been produced. However should tender returns exceed the project budget Council may be minded to not proceed or require additional grant in aid be secured before proceeding. The Flat Cliffs residents association have offered to financially support the scheme if necessary, however the available funds are modest.

6.6 The ongoing maintenance of the scheme although minimal and the potential removal costs at the end of the scheme's 20 year life would be the responsibility of the residents as the landowners.

(b) Risk

6.7 The risks are set out in Appendix A.

(c) Legal

6.8 The proposed Flat Cliffs Urgent Cliff Stabilisation Scheme will be carried out using the Council's permissive powers under the Flood and Water Management Act 2002.

6.9 There is a requirement to follow the Council's financial and contract procedure rules. This report is part of that process.

(d) Environmental and Sustainable Development

6.10 Natural England has requested that an Environmental Impact Assessment be undertaken and their agreement to it obtained be undertaken prior to any physical works being undertaken.

(e) Planning

6.11 The Marine Management Organisation (MMO) and the Local Planning Authority (LPA) have requested that the works are submitted for screening under the Marine & Coastal Access Act 2009 and the Town & Country Planning (EIA) Regulations 2011, respectively. This will determine whether an Environmental Impact Assessment (EIA) will be required for the proposed works.

6.12 Based on informal consultation with the MMO and the LPA during preparation of the business case, it is likely that a Marine Licence and EIA will be required for the toe works and Planning Permission (probably without EIA) will be needed for the slope works. However, the issue is complicated by Natural England currently reviewing the boundaries of their existing cliff SSSIs in North Yorkshire. This review includes a potential extension to the boundary of the Flamborough Head SSSI (the northern boundary of which is currently 3km to the south of Flat Cliffs); the revised boundary would include the coastal slope at Flat Cliffs. Natural England is, however, yet to make a decision on whether to extend the boundary of this SSSI (discussions are still ongoing and no SSSI notification has been issued), at which point the need (or otherwise) for Marine Licence, Planning Permission and accompanying EIA will be easier for the regulators to determine.

(f) Staffing

6.13 No staffing implications

(g) Others

6.14 I have considered whether the following implications arise from this report and am satisfied that there is no adverse identified implications that will arise from this decision to proceed with the Filey Flood Allevaition Scheme.

Equalities and Diversity, Staffing, Crime and Disorder, Health and Safety

7. ACTION PLAN

7.1 Award consultant contracts
Planning approval
Award construction contracts
Start Construction
End construction

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Background Papers:
None

Risk Matrix

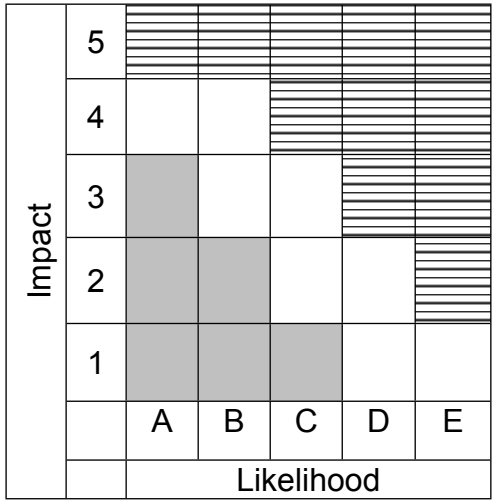
Risk Ref	Date	Risk	Consequences	Mitigation	Current Risk Score	Target Score	Service Unit Manager/ Responsible Officer	Action Plan
1		Additional environmental mitigation and enhancement	Increased costs, longer delivery programme	The slope stabilisation works will have re-seeding of the affected slopes. Costs have been allowed for this within the main 'construction costs' (rather than as a specific environmental mitigation/enhancement budget) because the vegetation is deemed an essential part of the stabilisation works. The specific seed mix can be agreed with the regulators at minimal additional cost.	C4	B2		None
2		Unsuitable ground conditions	Increased costs, longer delivery programme	A risk allowance of £25k has been included in the risk register for an additional borehole directly at the location of the proposed slope stabilisation works.	C4	B2	Projects Manager	None
3		Increased complexity and scale of design	Increased costs, longer delivery programme	The works are confined to limited intervention options only and the nature and type of implementation methods is consequently restricted by default.	C4	B2	Projects Manager	None
4		The works are confined to limited intervention options only and the nature and type of implementation methods is consequently restricted by default.	Increased costs, longer delivery programme	Seek pre-planning advice from the LPA	C4	B2	Projects Manager	
5		Extreme weather / tidal / surge events cause	Increased costs, longer delivery programme	Obtain weather forecasts and plan works accordingly during	C4	B2	Projects Manager	

Risk Ref	Date	Risk	Consequences	Mitigation	Current Risk Score	Target Score	Service Unit Manager/ Responsible Officer	Action Plan
		delays		construction phase.				
		Archaeological discoveries	Increased costs, longer delivery programme	Watching brief during intrusive works and tool-box talks to operatives on procedures to follow upon encountering archaeological discoveries.	C4	B2	Projects Manager	
		Lengthy and complex consultation process	Increased costs, longer delivery programme	Start public and statutory engagement activities at an early stage to avoid delays to delivery of the works.	C4	B2	Projects Manager	
		Unexploded Ordnance (UXO)	Increased costs, longer delivery programme	Watching brief during intrusive works and tool-box talks to operatives on procedures to follow upon encountering UXO.	C4	B2	Projects Manager	
		Additional ecological surveys due to (potential) designation as SSSI	Increased costs, longer delivery programme	A budget allowance of £36.5k has been included in the costings to allow for Extended Phase 1 Habitat Survey, NVC Survey and Invertebrates Survey, as well as EIA screening, EIA scoping and Environmental Statement.	C4	B2	Projects Manager	
		Unexpected utilities	Increased costs, longer delivery programme	Undertake services search to inform detailed design. Watching brief during intrusive works and tool-box talks to operatives on procedures to follow upon encountering services.	C4	B2	Projects Manager	

Glossary of Terms

Risk	An event which may prevent the Council achieving its objectives
Consequences	The outcome if the risk materialised
Mitigation	The processes and procedures that are in place to reduce the risk
Current Risk Score	The likelihood and impact score with the current mitigation measures in place
Corporate Objectives	An assessment of the Corporate Objectives that are affected by the risk identified.
Target Risk Score	The likelihood and impact score that the Council is aiming to achieve
Service Unit Manager	The Service Unit or Officer responsible for managing the risk
Action Plan	The proposed actions to be implemented in order to reduce the risk to the target score

Risk Scoring



Likelihood:	Impact
A = Very Low	1 = Low
B = Not Likely	2 = Minor
C = Likely	3 = Medium
D = Very Likely	4 = Major
E = Almost Certain	5 = Disaster