

Report to: Cabinet

Date of Meeting 31 March 2021

Document classification: Part A Public Document

Exemption applied: None

Review date for release N/A



Exmouth Beach Management Scheme: Advisory Group set up request and future options discussion

Report summary:

A Beach Management Plan was undertaken in 2013 which assessed Exmouth alongside Dawlish Warren, the latter of which required extensive works at the time. Since it was written, the management of Exmouth has been split from the work at Dawlish Warren, and the Environment Agency's Coastal Protection Scheme addressing flood and coastal risk to the western end of the frontage is nearing completion. There is ongoing depletion of beach material which is affecting the useable space on the shoreline and has uncovered infrastructure on the beach such as storm outfalls. There are limited properties at risk of flooding or coastal erosion and therefore whilst there may be some grant funding from the Environment Agency this is likely to be limited. This proposal seeks to investigate and explore the issues and options for improvement to the beach.

Based on the existing 2015 Beach Management Plan, this report is to recommend setting up an Advisory group to assist the scoping of potential beach works (Beach Management Scheme) that could be carried out pending funding being found. It is envisaged that any further study required to implement a solution can be combined with the BMP update, and the production of the BMP will likely follow after the delivery of any physical scheme implemented.

Is the proposed decision in accordance with:

Budget Yes No

Policy Framework Yes No

Recommendation:

That Cabinet;

1. Note the content of the report and need to set up an Exmouth Beach Management Plan Steering Group to advise Cabinet and the proposed terms of reference for it.
2. Recommend to Council that the Steering Group be established on the basis of the Terms of Reference appended to the report and that its membership be agreed at the Annual Meeting of the Council.
3. Request that following being established the Exmouth Beach Management Plan Steering Group progress work towards developing a new beach management plan for Exmouth with further reports to be brought back to Cabinet as it develops and identifying whether any interim actions are required.

Reason for recommendation:

1. Exmouth beach and seafront is an important asset to the town and wider area. It provides recreational facilities to local residents as well as bringing in both day visitors and holiday makers. The visitors to the beach provide an economic benefit to the town and local businesses, many of whom are reliant on the tourist trade. Beach works are unlikely to attract significant central government funding, so expectations on what can be afforded should be realised, and what can be done, with whatever funds are available should be guided by an advisory group made up of local beach users. This group will consider various options and the likely funding required, and make recommendations to cabinet. Although the existing BMP is due for updating, given the beach loss it seems prudent to advance any physical works as quickly as feasible, rather than delay this by updating the BMP first.
2. The BMP will need to be updated, and it would be an efficient use of resources to follow the design and implications of any physical works with an updated BMP.
3. This will fulfil our current service plan objective to look at options for managing Exmouth Beach following the 2015 BMP and its outstanding action to address beach levels from the 2020s.

Officer: Tom Buxton-Smith - Engineering Projects Manager tbutxton-smith@eastdevon.gov.uk
01395 571630

Portfolio(s) (check which apply):

- Climate Action and Emergencies
- Coast, Country and Environment
- Council and Corporate Co-ordination
- Culture, Tourism, Leisure and Sport
- Democracy and Transparency
- Economy and Assets
- Finance
- Strategic Planning
- Sustainable Homes and Communities

Equalities impact Medium Impact

The area of the BMP is primarily public open space that is used by a wide section of the community. Deterioration in this area is likely to disproportionately affect those without resources to find alternative amenity, exercise, and recreational space.

Climate change Medium Impact

Risk: Medium Risk; Medium Risk; The consequence of not adequately planning the management of the beach frontage will lead to less informed decisions with unintended consequences leading to additional expenditure to resolve repair to structures, incident response to flooding or erosion and a reduced quality space.

Links to background information

- [Exmouth Beach Management Plan - East Devon](#)
- [Analysis of the storm event \(11/02/2021-14/02/2021\) along with the impact on Sidmouth and Exmouth](#)

- [Draft Exmouth Advisory Group Terms of Reference](#)

Link to Council Plan:

Priorities (check which apply)

- Outstanding Place and Environment
 Outstanding Homes and Communities
 Outstanding Economic Growth, Productivity, and Prosperity
 Outstanding Council and Council Services
-

Report in full

1. Introduction

1.1. Long term changes to the beach

There have been noticeable changes to Exmouth beach over the last 20 years which has led to a depletion of beach levels on the frontage in front of the Maer, whilst there has been some mixed changes to the eastern and western ends. Care needs to be taken when determining what is overall long-term change and which change is due to short-term effects such as storms. The changes between 2018 and 2008 are shown in Image 1 below where red is depletion and blue is accretion of the beach; green is neutral. Please note that this should be considered as an overview and does not indicate how early or late in the 20 years these changes have occurred, nor does it detail at a specific location due to the earlier data being less detailed.

The map generally shows the loss of beach to the far west of town and alongside the Maer. The location of the former beach dunes are the deep red colour. Also note the change of pole sands, which has lost material on the seaward side, but gained it on the estuary side, indicating its movement towards the estuary.

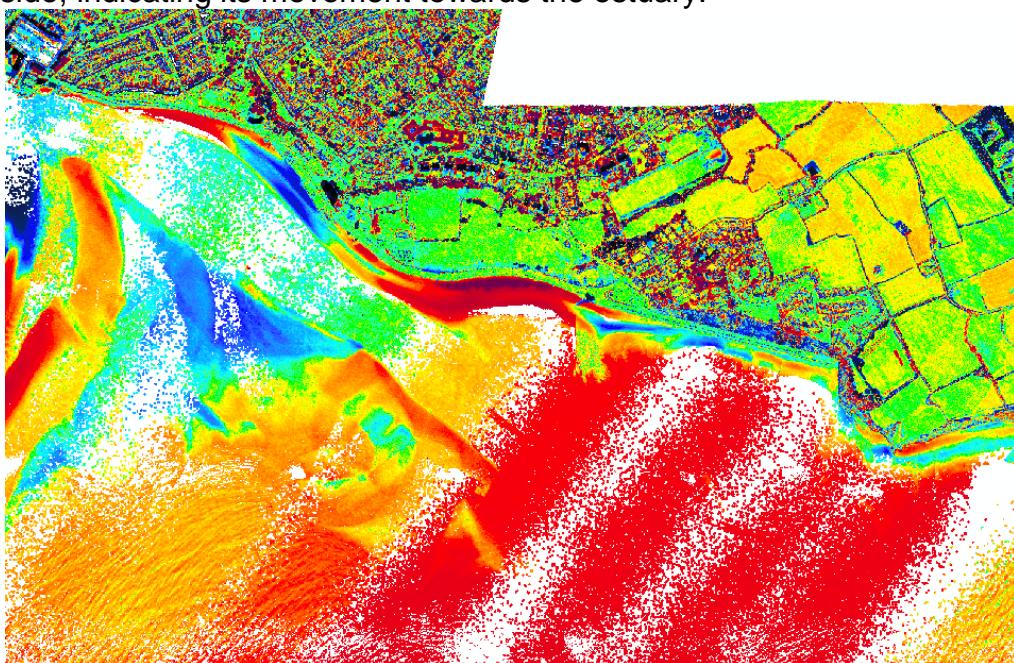


Image 1: LiDAR difference plot of levels showing depletion and accretion over the last 20 years

The Beach Management scheme will look at how to best to address the impacts of the most significant changes to the beach.

1.2. Short term changes to the beach

Beach surveys are carried out regularly, and following the last set of Easterly storms, EDDC requested a further survey from the Plymouth Coastal Observatory. Image 2 below shows some of the variation in beach levels from October 2020 to February 2021. Overall there was a net gain of beach material, however at areas such as the RNLI lifeboat station there has been depletion. The full report can be found via links at the beginning of the report. Note this is a linear physical survey along set transects, as opposed to the lidar data covering the whole beach in Image 1. Therefore some interpolation must be used to look at the general trend.

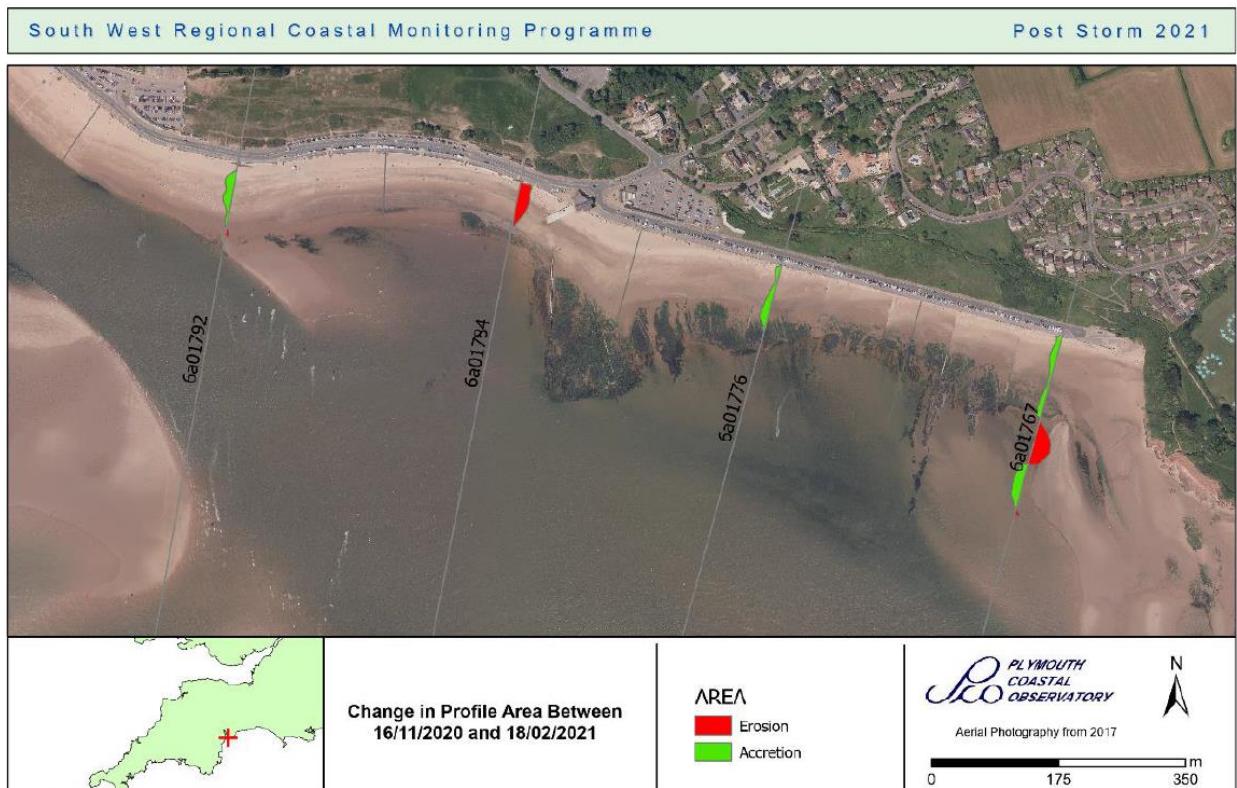


Image 2. Change in Exmouth beach from 16/11/2020 to 18/02/2021

1.3. Flood risk

The flood risk to properties as a result of these changes is limited due to the small number of properties affected, and the recently built properties which have been constructed in line with planning guidance for flood risk.

1.4. Erosion Risk

The area of depletion does indicate localised erosion of the beach, though this is not significant enough to provide a concern as to the loss of property.

1.5. Risk to existing defence structures

There have been studies that indicate the founding level of the structures are sufficient to remain stable with the present beach levels.

1.6. Risk to other infrastructure

There is some risk to other infrastructure on the beach, including outfall pipes, and the RNLI slipway which is currently not useable, see Image 3



Image 3: Photo of recent minor damage to promenade as result of wash out of supporting material and photo of low beach levels at end of RNLI slipway and stream outfall pipe which currently prevents launch of the RNLI's lifeboat.

1.7. Change to amenity use.

The biggest impact of the changes is on the amenity use of the beach. This has been commented on specifically in the area where the sand dunes were maintained (seaward of the Maer) and no longer exist.

1.8. Land Ownership.

EDDC own Exmouth beach and it is EDDC's responsibility

1.9. One of the appeals behind the recent Side Shore development on Queen's Drive is its proximity to Exmouth's beach. Although the beach adjacent to the development has grown over the winter, its long term trend is for beach loss. Developments like this and any future developments will rely on a healthy beach to be attractive.

2. What are the Existing Plans?

2.1. East Devon Local Plan

Guiding acceptable development.

2.2. Shoreline Management Plan 2

The Shoreline Management plan policy for this area is 'Hold the Line' which means that the existing sea defences should be maintained in their current position.

2.3. Beach Management Plan 2015

The key recommendations from this Plan include.

- a) Continued Monitoring, including post storm event monitoring.
- b) Assessment of monitoring undertaken
- c) Continued Inspection of Structures and rectification of Defects
- d) Assessment of trigger level for the beach structures
- e) Beach recycling/recharge of area in front of the Maer.
- f) Public safety issues to be resolved.
- g) Notification of appropriate stakeholder for relevant works.

Since the most recent BMP, the scheme for Exmouth has split with that covering Dawlish Warren and there may be other opportunities that a stand-alone Exmouth Beach Scheme could provide. There is more data now available which can better inform the trends in the beach volumes. With further study it may be possible to interpret the causes of these trends and therefore predict potential future trends.

2.4. Updated guidance

There has been recent updated national guidance on climate change, extreme sea levels and funding. This should be considered with any actions undertaken.

3. What are the Flood and Coastal Risk Opportunities?

- 3.1. The flood and coastal risk opportunities come from the avoidance of loss of property as a result of erosion or flood damage, the value of which is biased towards homes and people's health. (Loss of) Amenity is not valued within this calculation.
- 3.2. The figure below shows the 0.5%AEP (Annual Exceedance Probability, or 1in200year chance event) extreme sea level in purple and the zone 2m above this in yellow that may be affected by waves or climate change.

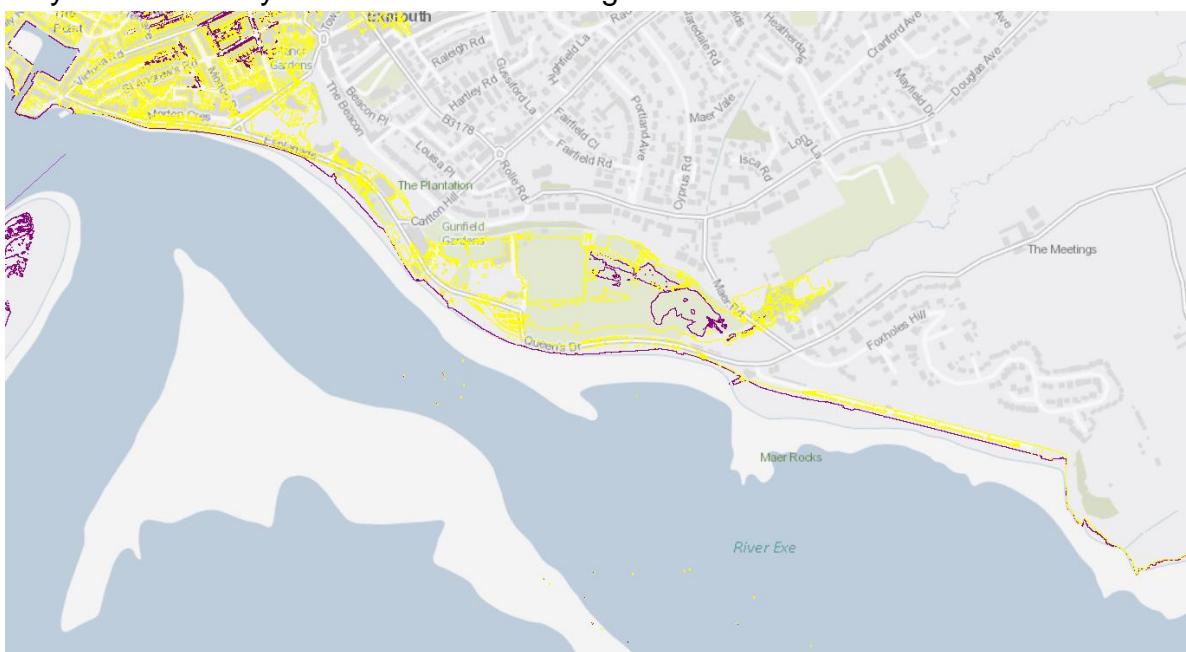


Image 4: Plan showing extent of extreme sea levels.

- 3.3. The risk to property to the west of the Octagon have been addressed by the Environment Agency's Coastal Defence scheme that is nearing completion. The Environment Agency's scheme is a tidal flood scheme that protects low lying property within Exmouth Town from flooding from storm events. Its design is of hard engineering, relying on both the existing sea wall, and the new set back wall to defend the town. It however is not reliant on a healthy beach at this location to reduce flood risk, therefore no beach improvement has been offered in this location, and is unlikely to be under a flood risk benefit guise.
- 3.4. The property outside of this area which has been built recently and following flood risk guidance is at limited risk. Therefore, there is little property at risk that can be used to justify grant in Aid funding from the Environment Agency. Impact on infrastructure such as roads is also limited due to the availability of alternative routes.

- 3.5. There may be some funding available for amenity and natural capital due to the recent update in HM Treasury Greenbook (2020), however as this is recent there is little precedent yet for this being approved as a primary source of scheme benefits.

4. What are the Options? (Indicative)

- 4.1. An aim of the proposed scheme will be to explore the potential options to improve the beach. This will also need to consider the lifetime of these options in light of any trends in coastal processes. This should be undertaken in conjunction with the Beach Management Plan due to significant overlap in scope.
- 4.2. Future options may include the following:

4.2.1. Do nothing (required baseline)

Not in keeping with the SMP2 policy of hold the line. EDDC stops all beach maintenance, no pull back of beach material (currently undertake by Street Scene Operations Team), no repairing of assets. Cost £0, however sand will ramp up to sea wall, and blow over before loss into the road/Maer behind. Once sand is on the highway, it can no longer be placed back on the beach, due to bathing water quality concerns/waste regulations.

Assets such as steps and the seawall will slowly start to fail and become unusable. As some point, the sea wall may fail, and Queen's drive road will be severed. The road/seawall would continue to disappear as the sea tries to connect back to the Maer. Cost estimate: Saving to EDDC budgets, but would be unacceptable both legally and politically.

4.2.2. Do minimum (to ensure safety and legal compliance)

Not in keeping with the SMP2 policy of hold the line. Similar to Do Nothing but maintains the beach to minimum compliance standards. Cost estimate: Neutral or slight saving compared to current expenditure.

4.2.3. Continue present management (required by new Green Book)

This is in keeping with the SMP2 policy however is likely to become increasingly expensive to maintain. Cost estimate: Neutral, as is current practice

4.2.4. Do Something 1: Beach recycling/recharge

This will replace sand that has been lost over last 20+years. This doesn't directly address the cause of the loss of material and the new material will also likely continue to disappear and therefore need further future intervention. The life time of these interventions are difficult to predicate accurately due to the variable nature of environmental conditions. Cost Estimate: Hugely variable from simple recycling (moving) of beach from Orcombe Point to low spots for £5k, up to £1m+ for significant beach recharge (likely to be sand brought in from pole sands)

4.2.5. Do Something 2: Beach control structures/New Groynes

This will to some extent limit the movement of sand along the frontage. The effectiveness of these will need significant modelling and assessment to understand the behaviour. Cost Estimate see table below

Table 1.7 Estimated groyne construction costs (£/m)

Height (m)	Timber groyne	Rock groyne
1	400	150
2	800	550
3	1,200	1,100
4	1,550	1,700
5	1,950	2,500

Source: Crossman and Simm (2002)

Image 5. Estimated groyne construction costs: Source
[Cost estimation for coastal protection \(publishing.service.gov.uk\)](http://Cost_estimation_for_coastal_protection(publishing.service.gov.uk))

4.2.6. Do Something 3: Offshore structures/Artificial Reef

This will also to some extent reduce the influence of coastal waves impacting on the shore by providing more shelter, thereby reducing the movement of sand. Similar to option 2 this will need extensive modelling. Cost Estimate: Small offshore rock islands cost around £2m each to construct, with future maintenance costs.

4.2.7. Do Something 4: Altering Navigation channel dredging

This option will likely to change the influence of the tidal currents and may either increase or decrease the significance of these depending on the alteration. The channel is finely balanced system and therefore may change back to the original position, so the lifetime of this option may be limited. Cost Estimate £1m+ to make meaningful change. Could be combined with 4.2.4.

4.2.8. Do Something 5: Major enhancement with combined beach improvements

A large redevelopment scheme could be proposed, with new development such as housing/businesses providing funding to provide improvements to the beach, or providing combined amenity/beach management function, such as a groyne/jetty. However any large scale options are likely to be prohibitively expensive, and there is limited land able to be developed. Cost Estimate: unknown.

4.2.9. Do Something 6: Managed realignment

This option will look at working with the natural processes allowing the existing and expected future change to continue to occur. This will likely have more significant impacts on the existing use of the area, primarily affecting the road. It may however reconnect the Sea to the Maer as it was before Queens drive was built. Cost Estimate £10m+

4.2.10. Do Something 7+: Combination of above

All the do Something options are in line with the SMP2 policy and will need marine licencing and environmental assessment and approval.

4.3. Alongside the appraisal of options, the Beach Management Plan can be updated creating a formal written plan for managing a beach (generally for coastal protection but can include amenity recreation and transport) involving a selection from a wide range of potential capital, maintenance and monitoring works. It sits between the high-level

objectives in the Shoreline Management Plan 2 and more detailed project specific intervention such as rock works.

5. How will this be funded?

- 5.1. Initially the development of the scope and setting up and managing of the advisory group will fall into existing staff time, both from Streetscene and Democratic Services.
- 5.2. In Q3 2021, we will look to make a capital bid to fund the development of the scheme and BMP by a consultant, based from the scope developed by the Advisory Group.
- 5.3. Once this scope is completed, any physical works will require additional funding
- 5.4. Funding for the coastal management of erosion and flood defence is primarily through the Environment Agency Grant in Aid and this requires a substantial benefit cost justification to obtain funding for capital projects. This funding is biased towards homes which then further influences the affordability of capital and maintenance options to defend the frontage. The Environment Agency scheme protects 1000's of properties within the Town flood cell, so there are few flood risk benefits to still be claimed/funded. Properties outside of defended area much fewer and are generally built with higher floor level so much less at risk, so will attract minimal funding eligibility. This then poses difficult discussions as to how to most sustainably manage the frontage in the future whilst also considering the additional future pressure from sea level rise and increased storminess.
- 5.5. Alternative funding is not currently known, though the scheme can explore opportunities for wider funding with options delivering multiple benefits such as wellbeing, recreation or coastal regeneration.
- 5.6. Given 5.4, it is worth highlighting that any physical works to the beach will likely need to be majority funded by local means (EDDC capital budget and partner contributions), which will place a realistic budget cap on any physical works possible.

6. Why do we need an advisory group?

- 6.1. The beach has a significant influence on and from the local residents, businesses and visitors, so it is important to consult with a range of parties. Therefore, the development of the scheme will need input and buy in from local community, hence recommending a local Advisory Group to shape its direction.
- 6.2. This group is likely to involve ward members, portfolio holder for Environment, Exmouth Town Council, a selection of beach users, or business owners relying on the beach. However, the group should be kept to minimal numbers to ensure swift progress
- 6.3. The advisory group is envisaged to be a public meeting, with agendas and minutes published.

- 6.4. The scheme can cover a wide remit of the many distinct functions of and around the beach. This includes flood and coastal erosion function as well as the local recreation and amenity hence why a wide range of views for the advisory group is sought.



Image 5: Photo of recreational beach users,

- 6.5. Once completed, it will make realistic recommendations for any physical or management works that could be affordable within the financial envelope
- 6.6. Should funding be found to implement the BMS, physical works would then be carried out.
- 6.7. Following on from the work of the Beach Management Scheme, we would update the Beach Management Plan which will cover the management of Exmouth beach for the next 5 years and beyond.

7. What will the membership of the Advisory Group look like?

- 7.1. The advisory group will perform best if it has a wide reaching yet concise membership of parties interested in both works and future management of the beach. Based on other beach advisory groups, we envisage the group to be made up of representatives of the following bodies/groups. Note this membership is not exhaustive, and it is envisaged membership will be discussed further prior to and at the inaugural meeting.

- 7.1.1. EDDC Portfolio Holder
- 7.1.2. EDDC Ward Member(s)
- 7.1.3. EDDC Service Lead (Officer)
- 7.1.4. EDDC Project Manager (Officer)
- 7.1.5. EDDC Beach Safety Officer
- 7.1.6. Environment Agency
- 7.1.7. Devon County Council
- 7.1.8. Exmouth Town Council
- 7.1.9. RNLI
- 7.1.10. Body representing beach users
- 7.1.11. Body representing watersport users
- 7.1.12. Body representing fishing/commercial use of the coast.
- 7.1.13. Body representing beach facing business/commercial activities
- 7.1.14. Body representing hoteliers/tourists
- 7.1.15. Statutory consultees if required.

8. Who will chair the Advisory Group

- 8.1. It is envisaged that a local ward member will chair the group
- 8.2. During the inaugural meeting, the chair will be elected.

9. What will the Terms of Reference be?

- 9.1. We have existing terms of reference for both the Sidmouth and East Beach Advisory Group, and the Seaton Stakeholder group.
- 9.2. It is proposed to use the Sidmouth and East Beach Advisory Group Terms of Reference as a basis and this has been updated to reflect Exmouth.
- 9.3. The Version 1, draft Exmouth Terms of reference can be found via the links at the start of this document.
- 9.4. Like the Sidmouth and East Beach Advisory Group, this group is not able to make decisions, only recommendations. Cabinet will ultimately make decisions, with limited decisions being able to be made by officers.

10. What are the next steps should this report be approved?

- 10.1. We will assemble an advisory group as discussed in 6.1 to help develop the scope of the scheme. The advisory group will also help define the aim of the advisory group, and the aims of the scheme and Beach Management Plan, as well as firm up membership.
- 10.2. Once the scope is defined, a capital bid will be submitted in October 2021 for the 2022/23 financial year to fund the consultant to deliver the scheme and Beach Management Plan
- 10.3. Should the capital bid be approved, we would seek to tender a consultant to start work in financial year 2022/23
- 10.4. The scale of the scope will affect the time for the scheme document to be completed, and any physical works delivered.

11. Conclusions

This briefing note therefore seeks to gain support for developing a Beach Management Scheme and subsequent update of the Beach Management Plan. This will allow exploration of the best options to manage this sustainably into the future for the Town. An alternative option is to take a more short-term reactive management of the frontage which may provide short lived solutions, and additional cost due to address more difficult issues that arise with shorter response times and disruption to the use of the beach.

Financial implications:

As detailed within the report the indicative options runs into substantial amounts that will require future consideration and approval. The initial action of assembling the advisory group is within existing budget.

Legal implications:

There are no specific legal implications requiring comment.