

REPORT

Millport Coastal Flood Protection Scheme: Environmental Statement

Chapter 3 EIA Methodology and Consultation

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Project related



Acronyms

Acronym	Acronym description
CIA	Cumulative Impact Assessment
CIEEM	Chartered Institute for Ecology and Environmental Management
EIA	Environmental Impact Assessment
ES	Environmental Statement
EU	European Union
HRA	Habitats Regulations Appraisal
IEMA	Institute of Environmental Management and Assessment
RAG	Red Amber Green

Glossary

Glossary Term

Glossary Text

Environmental Impact Assessment (EIA)

A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Directive and EIA Regulations, including the publication of an Environmental Statement.

Environmental Statement (ES)

A document reporting the findings of the EIA and produced in accordance with the EIA Directive as transposed into UK law by the EIA Regulations.

Millport Coastal Flood Protection Scheme

The scheme consists of offshore rock armour structures which will be built in the vicinity of the rock islets within Millport Bay. Onshore works will include flood walls, improvement works to existing coast protection structures, and works to raise the level of existing grass areas. Works on the foreshore include shore-connected rock armour breakwaters and rock armour revetments.

3 EIA Methodology and Consultation

3.1 Introduction

1. This chapter of the Environmental Statement (ES) describes the Environmental Impact Assessment (EIA) process and the methodology used throughout the ES assessment chapters for the Millport Coastal Flood Protection Scheme (the proposed scheme).
2. The purpose of the EIA is to inform the decision-maker, stakeholders and all interested parties of any significant environmental issues that may result from the proposed scheme during its construction, operation and (where relevant) decommissioning. The EIA provides an independent assessment of the proposed scheme to enable interested parties to understand such potential impacts before making decisions on whether consent for the development should be granted.
3. This section sets out the approach for the assessment of impacts which has been adopted within this ES. In summary, this chapter presents:
 - Details of the guidance followed throughout the EIA;
 - A summary of the EIA process;
 - The approach adopted to define the baseline environment (specific details are provided for each environmental topic considered in the relevant chapter);
 - The generic approach taken to assess potential impacts, including the evaluation of significance (where a different approach has been adopted for a specific topic, this is set out in the relevant chapter);
 - The generic approach taken to the derivation of mitigation measures and the assessment of residual impacts; and
 - The approach taken to the assessment of potential cumulative impacts.
4. This chapter provides an overview of the generic approach taken to impact assessment across all EIA topics. It should be noted that topic specific methodology is covered in each technical chapter (**Chapters 6 to 23**) as the exact methodology for the receptors of each topic need to be relevant to those receptors (e.g. in terms of definitions of sensitivity or magnitude of effect).

3.2 EIA Guidance

5. Flood protection schemes have deemed planning permission under the Flood Risk Management (Scotland) Act 2009. Flood protection scheme operations that constitute development will, pursuant to section 57(2B) of the Town and Country Planning (Scotland) Act 1997, be deemed to have been granted planning permission under the Act. A request must be submitted to Scottish Ministers for deemed planning permission to be granted, and the Scottish Ministers may attach conditions to the deemed planning consent.
6. Guidance for local authorities taking forward a flood protection scheme advises that they may benefit from following the normal planning guidance to ensure issues like the aesthetics of the scheme are properly taken into consideration and thus avoiding subsequent valid objections.

7. The requirement for EIA of projects requiring planning permission is considered under the Town and Country Planning (EIA) (Scotland) Regulations 2011, which came into force in June 2011. The requirement for EIA comes from European Directive 2011/92/EU, however in April 2014 Directive 2014/52/EU, amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, was published in the European Union's Official Journal. The requirements of Directive 2014/52/EU have been formally implemented in Scotland in the form of a revised set of regulations entitled The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017.
8. Under Article 3(2) of the Directive, transposed by Regulation 60, the EIA Regulations 2017, where an Environmental Statement (ES) is submitted or where a scoping opinion has been sought before 16 May 2017, the project can benefit from transitional provisions to continue under the provisions of the EIA Regulations 2011. As such, North Ayrshire Council have commissioned an EIA for the Millport Coastal Flood Protection Scheme and submit the findings within this Environmental Statement (ES) under the Town and Country Planning (EIA) (Scotland) Regulations 2011.
9. In order to permit the proposed scheme, it is anticipated that the following consents and agreements will be required:
 - Marine Licence under the Marine (Scotland) Act 2010 for works below MHWS to be granted by Marine Scotland.
10. In addition to the above, further consents may also include:
 - Harbour Works Licences from the North Ayrshire Harbour Authority. This may be required for works within the statutory Harbour Authority limits, and where authority has Works Licensing Powers (ability to regulate right of navigation and fishing within area);
 - Approvals from SEPA under Section 20 of the Water Environment & Water Services (Scotland) Act 2003 and Water Environment (Controlled Activities) (Scotland) Regulations 2005 for activities liable to pollute or significantly affect the water environment; and
 - A European Protected Species licence under The Conservation (Natural Habitats, & c.) Regulations 1994
11. This EIA has been undertaken in accordance with the requirements of the above regulations and has taken into account key policies, legislation, guidance and advice, including but not limited to the following:
 - Chartered Institute of Ecology and Environmental Management (CIEEM) "Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine" (2018);
 - Institute of Environmental Management & Assessment (IEMA) "Guidelines for Environmental Impact Assessment" (2017);
 - Designing Places- Designing Streets – A Policy Statement for Scotland;
 - National Planning Framework, Scottish Planning Policy and Circulars;
 - North Ayrshire Council Local Development Plan (LDP2);
 - Ayrshire Joint Structure Plan;

- Ayrshire Shoreline Management Plan; and
- The Wildlife and Countryside Act 1981.

12. It is noted that this list of guidance is not exhaustive and the relevant guidance adopted for the assessment of each environmental parameter is described in the relevant topic chapter.

3.3 The EIA Process

3.3.1 Process Overview

13. EIA is a systematic process, which identifies the potential effects of proposed works and how these translate into impacts upon the receiving environment. This process includes an assessment of the likely significance of any potential impacts and the identification of a range of suitable mitigation options and management measures. The EIA process is designed to be as transparent as possible incorporating an ongoing consultation process with statutory and non-statutory consultees. The EIA process has a number of distinct stages as follows:

- **Scoping** – a formal process requesting an opinion on the proposed scheme from statutory consultees, coordinated by the Applicant. The scoping process also identifies the existing environmental data present and the key issues at the site, thereby identifying any additional studies that are required for their assessment;
- **Baseline studies** – undertaken to identify the current status of the receiving environment and to identify the requirement to carry out further desk and field studies;
- **Interim EIA** – an interim EIA and options appraisal was undertaken for the proposed scheme, focusing on three alternative options to help develop the preferred solution through transparent dialog with regulators, stakeholders and the local community (**Appendix 3.1**);
- **Project definition** – development of the proposed scheme details under a Rochdale Envelope (see **Chapter 5 Project Description** for more information on project definition and **Chapter 2 Policy and Legislation** for more information on the Rochdale envelope approach);
- **Assessment of impacts** – the assessment of the significance of the potential impacts related to the proposed scheme, as well as the proposed mitigation and the resulting residual impacts;
- **Environmental reporting** – compilation of the ES and the supporting documentation (e.g. appendices and technical reports); and
- **Submission and consenting** – the submission of the ES, information to support a Habitats Regulation Appraisal (HRA) if required, and the appropriate consent applications. These documents go through a determination process with the appropriate consenting body.

14. The EIA is based on the expert judgement of technical specialists, following an appraisal of the parameters included in the Rochdale or Project Design Envelope as described in **Chapter 5 Project Description**. The process is outlined in Table 3-1.

Table 3-1 Stages of the ES preparation

Stage	Task	Aim/Objective	Work/Output (Examples)
EIA 	Consultation – throughout EIA process	Consult with statutory and non-statutory organisations	Local knowledge and information
	Primary Data Collection	To identify the baseline/ existing environment	Background data including existing literature and specialist studies
	Specialist Studies	To further investigate those environmental parameters which may be subject to potentially significant effects	Specialist reports (e.g. hydrodynamic modelling and archaeological assessment)
	Interim EIA and options appraisal	Initial assessment of three options to allow development of preferred solution through consultation and high-level assessment	Interim EIA report
	Impact Assessment	To evaluate the baseline environment in terms of sensitivity To evaluate and predict the impact (i.e. magnitude) upon the baseline To assess the resultant effects of the above impacts (i.e. determine significance)	Series of significant adverse and beneficial impacts
	Mitigation Measures and Monitoring Requirements	To identify appropriate and practicable mitigation measures and enhancement measures and outline any recommended monitoring.	The provision of solutions to avoid offset or reduce adverse impacts (e.g. sensitive scheduling to avoid noise and traffic impacts) Feedback into the design process, as applicable.
	Draft ES	Production of the ES in accordance with EIA guidance	ES
	Finalise ES	Submission of the ES	ES

15. EIA is a tool for systematically identifying, examining and assessing the impacts and effects of the construction, operational and, if applicable, decommissioning phases of the proposed scheme on the environment. The process of identifying and assessing the environmental impacts of the proposed development is iterative, running in parallel with the design of the proposed scheme. Where any of the potential impacts are identified as being significantly adverse then, where possible, the design will be altered to mitigate these impacts. Consultation is ongoing throughout the EIA process and contributes to the identification of both impacts and associated mitigation measures.
16. The formal reporting mechanism for an EIA is the ES. In accordance with regulations, the ES should include such information as is reasonably required to assess the likely significant environmental effects of the proposed scheme and which the applicant can reasonably be required to compile. Table 3-2 summarises the information requirements and where these can be found within the Millport Coastal Flood Protection Scheme ES.

Table 3-2 Information Requirements of an ES

Information Required for Inclusion in the ES	Reference within the Millport Coastal Flood Protection Scheme ES
<ul style="list-style-type: none"> ▪ A description of the proposed scheme and of the regulated activity, including in particular: <ul style="list-style-type: none"> ○ A description of the location of the proposed scheme and the regulated activity; ○ A description of the physical characteristics of the whole project and regulated activity, including where relevant, requisite demolition works, and the land-use requirements during the construction and operational phases; ○ A description of the main characteristics of the operational phase of the proposed scheme and the regulated activity (in particular any production process); ○ An estimate, by type and quantity, of expected residues and emissions resulting from the operation of the proposed scheme and the regulated activity. 	Chapter 5, Project Description
<ul style="list-style-type: none"> ▪ A description of the reasonable alternatives 	Chapter 4, Site Selection and Assessment of Alternatives and Appendix 3.1
<ul style="list-style-type: none"> ▪ A description of the relevant aspects of the current state of the environment (baseline scenario) 	Chapters 6 to 23
<ul style="list-style-type: none"> ▪ A description of the factors likely to be significantly affected by the proposed scheme and the regulated activity: population, human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage, including architectural and archaeological aspects, and landscape 	Chapters 6 to 23
<ul style="list-style-type: none"> ▪ A description of the likely significant effects of the proposed scheme and the regulated activity on the environment 	Chapters 6 to 23
<ul style="list-style-type: none"> ▪ The description of the likely significant effects on the factors must cover the direct effects and any indirect, secondary, transboundary, cumulative, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the proposed scheme and the regulated activity. This description must take into account the environmental protection objectives established at Union or member State level which are relevant to the proposed scheme and the regulated activity 	Chapters 6 to 23. No transboundary impacts are anticipated due to the nature of the proposed scheme.
<ul style="list-style-type: none"> ▪ A description of the forecasting methods or evidence used to identify and assess the significant effects on the environment including details of difficulties encountered compiling the required information and the main uncertainties involved 	Chapters 6 to 23

Information Required for Inclusion in the ES	Reference within the Millport Coastal Flood Protection Scheme ES
<ul style="list-style-type: none"> A description of the measures envisaged to avoid, prevent, reduce or if possible offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements 	Chapters 6 to 23
<ul style="list-style-type: none"> A description of the expected significant adverse effects of the proposed scheme and the regulated activity on the environment deriving from the vulnerability of the proposed scheme and the regulated activity to risks of major accidents or disasters which are relevant to the proposed scheme and the regulated activity concerned 	Chapters 6 to 23
<ul style="list-style-type: none"> A non-technical summary 	Millport Coastal Flood Protection Scheme Non-Technical Summary
<ul style="list-style-type: none"> A reference list detailing the sources used for the descriptions and assessments included in the report 	Chapters 6 to 23

17. The approach adopted in the EIA process for the proposed scheme is summarised in the following sections. It should be noted that these stages are not necessarily consecutive and may overlap. For example, iterative design changes may be made in light of emerging findings of the EIA process to prevent or reduce the significance of a potential impact. This would then require re-assessment of the potential impact, potentially informed by further survey work to adequately describe the baseline environment.

3.3.2 Screening

18. A combined Screening and Scoping report was prepared by Royal HaskoningDHV in 2017. The screening and scoping process was combined into one document to allow the competent authorities to make a more informed decision regarding the requirement for EIA. This document identified three potential solutions to protect Millport from the risk of coastal flooding and sought comments from the regulators on these options presented to feed into the design process and help identify the most suitable solution. This process is discussed further in **Chapter 4 Site Selection and Assessment of Alternatives**.
19. As part of this process, North Ayrshire Council formally requested a screening opinion. A detailed summary of the legal framework for the proposed scheme is provided in **Chapter 2 Policy and Legislation**.

3.3.3 Scoping

20. The purpose of the scoping process is to identify the principal environmental issues at the earliest possible stage of the development process through responses from the regulators and their consultees. This assists in the appropriate targeting of the assessment studies and the identification of which elements of the development have the potential to cause significant environmental impacts.
21. The Screening and Scoping Report enabled anyone potentially affected by the proposed scheme (including the scheme options) (regulators, stakeholders and local community) to be well informed of

the development of the proposed scheme, allowing all parties to make well informed decisions during the consents process.

22. The consultation process has identified mitigation measures and, where practicable, taken account of the view of consultees to alter the design of the proposed scheme, thereby avoiding or reducing any environmental or human impacts. North Ayrshire Council regards the consultation process as being important to the success of the proposed scheme and have therefore undertaken a significant amount of public and stakeholder engagement, as well as additional consultation with statutory consultees beyond the scoping and submission processes. The consultation undertaken and key topics covered are detailed in Section 3.4.
23. Royal HaskoningDHV has ensured the ES clearly demonstrates how the comments received from the regulators and their statutory consultees for key marine and terrestrial consents are addressed. This is done via a 'signposting' table outlining the scoping response received and the location within the ES where the comment is addressed.
24. Each technical chapter (**Chapters 6 to 23**) outlines the key issues pertinent to that issue which have been identified through the scoping process.

3.3.4 Environmental Statement

3.3.4.1 Characterisation of the Environmental Environment

25. The term 'baseline environment' is used to describe the nature, scale, condition, and other relevant information to provide a detailed description of a given environmental receptor that falls within the scope of the ES.
26. Characterisation (a description) of the baseline environment has been undertaken in order to determine the baseline conditions in the area covered by the proposed scheme and relevant study areas. This has been undertaken following the steps below. These steps are also detailed further within each assessment chapter, where relevant:
 - Definition of study areas for each receptor, based on the relevant characteristics of the receptor;
 - Review of available information;
 - Review of likely or potential impacts that might be expected to arise from the proposed scheme;
 - Review of whether sufficient information is available to make EIA judgements with sufficient confidence;
 - If further data is required, ensure data are gathered, targeted and directed at filling key data gaps; and
 - Review further data to ensure sufficient information is available to make EIA judgements with sufficient confidence.
27. Within this ES, the description of the baseline environment consists of the following aspects:
 - The spatial location and extent of the environmental features or receptors;
 - A description of the environmental features or receptors and their character;

- The context of the environmental features or receptors in terms of rarity, function, and population at the local, regional and national level;
 - The sensitivity of the environmental features or receptors in relation to physical, chemical or biological changes; and
 - The value of the environmental features or receptors (e.g. designated status).
28. A wide range of information has been gathered and activities undertaken to define the baseline environment and likely receptors. These data sources are detailed in each chapter and include, but are not limited to the following:
- Desk-based review of existing published data;
 - Data provided by consultees; and
 - Field survey and site investigation information.
29. The results of the environmental baseline studies are outlined in **Chapters 6 to 23** of this ES.

3.3.4.2 Project Design Envelope

30. An essential element of any EIA is defining the Project Description against which impacts will be assessed. Whilst the preferred solution for the proposed scheme is understood, some details are yet to be defined or confirmed and the Project Description and methods upon which this application for consent is based, fall within a range of defined criteria. This Project Design Envelope approach, often referred to as a 'Rochdale Envelope', allows a degree of flexibility in determining the final specific project details, while still meeting the requirements of the EIA process. This approach is outlined in more detail in **Chapter 2 Policy and Legislation**.
31. The approach defines a series of realistic maximum extents and magnitudes for the description of a development, so that a realistic 'worst case scenario' is assessed. **Chapter 5 Project Description** sets out the parameters of the proposed scheme in as much detail as is currently possible. Each technical chapter (**Chapters 6 to 23**) provides an outline of the relevant worst case for that receptor. Post consent, a detailed design of the scheme can vary within that envelope, without rendering the EIA inadequate. By adopting this approach, the ES can conclude that the environmental impact of the proposed scheme will be no greater than that set out in the ES and may actually be less.

3.3.4.3 Impact Assessment

32. The approach to making balanced assessments for the proposed scheme has been guided by Royal HaskoningDHV EIA team and technical specialists using available data, new data, experience and expert judgement. In order to provide a consistent framework and system of common tools and terminology, a matrix approach has been used to frame and present the judgements made.
33. This section sets out the assigned definitions that are used in the assessment process for a number of topics considered in the ES. For each topic of the EIA, the most relevant and latest guidance or best practice has been used and therefore definitions of sensitivity and magnitude of impact are tailored to each receptor. A description of the approach taken to the specific impact assessment for each environmental receptor is provided (in each relevant chapter) so that it is clear to the reader how impacts have been defined, particularly where such an approach differs to that described within this section.

34. The impact assessment considers the potential for impacts during the construction, operation and maintenance, and decommissioning phases of the proposed scheme.
35. EIA provides an assessment of the impacts on sensitive receptors as a result of the effects of a development upon the environment. The terms 'effects' and 'impacts' have, in the past, been used interchangeably, but they are in fact different and one drives the other. Effects are physical changes in the environment that are set in motion as a consequence of a particular development or activity. Effects do not impact all receptors, as some receptors are not always sensitive to them.
36. Effects are measurable physical changes in the prevailing environment (e.g. volume, time and area) arising from construction and operation activities. Effects can be classified as primary (e.g. the physical presence of a built element of the development) or secondary (e.g. increase in erosion due to a change in the rate of discharge of surface water). Impacts consider the possible changes in potentially sensitive receptors as a result of an effect.
37. Impacts can be classified as follows:
 - Direct impacts: these may arise from impacts associated with the construction, operation and maintenance, or decommissioning of the proposed scheme;
 - Indirect impacts: these may be experienced by a receptor that is removed (e.g. in space or time) from the direct impact (e.g. noise impacts upon fish which are a prey resource for fish or mammals).
 - Inter-relationships between impacts; or
 - Cumulative impacts: these may occur as a result of the proposed scheme in conjunction with other existing or planned projects within the study area for each receptor.
38. The EIA framework used herein is based on the 'source-pathway-receptor' conceptual model process used to provide a systematic and auditable approach to understanding the potential for effects to arise, the spatial extents of the effect-receptor interactions, impact pathways, and potential impact significance. The conceptual 'source-pathway-receptor' model is effective in the identification of potential effects and the means by which these can manifest themselves on the receiving environment and its sensitive receptors.
39. The term 'source' describes the origin of potential effects (e.g. construction activities) and the term 'pathway' describes the means (e.g. through air, water, or ground) by which the effect reaches the receiving sensitive 'receptor' (e.g. terrestrial habitats, archaeology and human receptors). If the source, pathway or receptor is absent, no linkage exists and thus there will be no potential for an impact to manifest.
40. For each effect, the assessment identifies receptors within the study area that are sensitive to that effect and implements a systematic approach to understand the impact pathways and the level of impacts on given receptors. The process considers the following:
 - The sensitivity of a receptor to the effect;
 - The probability that an effect-receptor interaction will occur;
 - The magnitude of the effect;

- The determination and (where possible) qualification of the level of impact on a receptor, considering the probability that the effect-receptor interaction will occur, the spatial and temporal extents of the interaction and the significance of the resulting impact; and
- The level of certainty at all stages.

Receptor Sensitivity

41. All receptors will exhibit a degree of sensitivity to the changes brought about by the proposed scheme and defining receptor 'sensitivity' as part of the definition of the baseline environment helps to ensure that the subsequent assessment is transparent and robust. The characterisation of the existing environment helps to determine the receptor sensitivity in order to assess the potential impacts upon it.
42. The ability of a receptor to adapt to change, tolerate, and/or recover from potential impacts is key in assessing its sensitivity to the impact under consideration. For ecological receptors, tolerance could relate to short term changes in the physical environment; for human environment receptors, tolerance could relate to impacts upon socio-economics or health impacts. The time required for recovery is an important consideration in determining receptor sensitivity.
43. The overall receptor sensitivity is determined by considering a combination of value, adaptability, tolerance and recoverability. This is achieved through applying known research and information on the status and sensitivity of the feature under consideration coupled with professional judgement and past experience.
44. In summary, the sensitivity of a receptor is a function of its capacity to accommodate change and reflects its ability to recover if it is affected, and is defined by the following factors:
 - Vulnerability: whether a particular effect has the ability to impact a receptor;
 - Adaptability: the degree to which a receptor can avoid or adapt to an effect;
 - Tolerance: the ability of a receptor to accommodate temporary or permanent change without a significant adverse effect;
 - Recoverability: the temporal scale over, and extent to, which a receptor will recover following an effect; and
 - Value: a measure of the receptors conservation importance, rarity and worth (see Section 3.3.4.3).
45. In order to define the sensitivity of a receptor, the guidelines presented in Table 3-3 have been adopted in this ES.

Table 3-3 Definitions of the sensitivity levels for environmental receptors

Sensitivity	Description
High	Individual receptor has very limited capacity to avoid, adapt to, accommodate or recover from the anticipated impact.
Medium	Individual receptor has limited capacity to avoid, adapt to, accommodate or recover from the anticipated impact.
Low	Individual receptor has some tolerance to avoid, adapt to, accommodate or recover from the anticipated impact.

Sensitivity	Description
Negligible	Individual receptor is generally tolerant to and can accommodate or recover from the anticipated impact.

46. It should be noted that the sensitivity criterion is a composite one; combining value (see Section 3.3.4.3) with sensitivity. In some instances, the inherent value of a receptor is recognised by means of designation, and the 'value' element of the composite criterion recognises and gives weight in the assessment to that designation. However, irrespective of the recognised value, all receptors will exhibit a greater or lesser degree of sensitivity to the potential changes brought about by the proposed scheme. It should be noted that the assessment of sensitivity is a matter of judgement applied by professional experts based on the receptors within the relevant study area.
47. Sensitivity to potential impacts is considered for each species, using available evidence including published data sources. The conclusions reached regarding the sensitivity of receptors have been presented in the baseline sections of each technical chapter (**Chapters 6 to 23**).

Receptor Value

48. Receptor value considers whether, for example, the receptor is rare, has protected or threatened status, has importance at a local, regional, national or international scale, and in the case of biological receptors whether the receptor has a key role in the ecosystem function.
49. The 'value' of a receptor forms an important element within the assessment, for instance, if the receptor is a protected species or has an economic value its value may be greater than otherwise.
50. It is important to understand that high value and sensitivity are not necessarily linked within a particular impact. A receptor could be of high value (e.g. an Annex II species), but have a low or negligible sensitivity to an effect. Similarly, low value does not equate to low sensitivity and is judged on a receptor by receptor basis. The value of the feature or receptor is a function of a range of factors (e.g. biodiversity value, social/community value and economic value).
51. Value will be considered, where relevant, as a modifier for the sensitivity assigned to the receptor, based on expert judgement. Table 3-4 provides definitions for the value afforded to a receptor based on its legislative importance.

Table 3-4 Definitions of the value levels

Value	Definition
High	Internationally or nationally important. Internationally protected species that are listed as a qualifying interest feature of an internationally protected site (i.e. Annex II protected species designated feature of a European designated site) and protected species (including EPS) that are not qualifying features of a European designated site.
Medium	Regionally important or internationally rare. Protected species that are not qualifying features of a European designated site, but are recognised as a Biodiversity Action Plan (BAP) priority species either alone or under a grouped action plan, and are listed on the local action plan relating to the marine mammal study area.
Low	Locally important or nationally rare. Protected species that are not qualifying features of a European designated site and are occasionally recorded within the study area in low numbers compared to other regions.

Value	Definition
Negligible	Not considered to be particularly important or rare Species that are not qualifying features of a European designated site and are never or infrequently recorded within the study area in very low numbers compared to other regions.

52. In addition to legislative factors, a range of other characteristics will be considered in the categorisation of importance, for example:
- Species or sub-species that are rare or uncommon, either internationally, nationally or more locally, including those that may be seasonally transient;
 - Endemic species or locally distinct sub-populations of a species;
 - Size of habitat or species population;
 - Species in decline;
 - Species rich assemblages;
 - Large populations of species or concentrations of species considered uncommon or threatened in a wider context; and
 - Species on the edge of their range, particularly where their distribution is changing as a result of global trends and climate change.
53. The value or potential value of a receptor or feature can be determined within a defined geographical context, for example, the following hierarchy to describe value is recommended by the Chartered Institute of Ecology and Environmental Management (CIEEM) (2018) with respect to ecological receptors:
- International and European;
 - National;
 - Regional;
 - Metropolitan, County, vice-county or other local authority-wide area; and
 - Local (e.g. assessment within a district or borough context or within a 'zone of influence').
54. Value is considered for each receptor, using available evidence including published data sources. The conclusions reached regarding the value of receptors have been presented in the baseline sections of each technical chapter (**Chapters 6 to 23**).

The Magnitude of Effect

55. In order to predict the significance of an impact, it is fundamental to establish the magnitude and probability of an impact occurring through a consideration of (CIEEM, 2018):
- Scale or spatial extent: the area over which an effect occurs (small scale to large scale or a few individuals to most of the population);
 - Duration: the time for which the effect occurs (short term to long term);
 - Likelihood of impact occurring;
 - Frequency: how often the effect occurs;
 - Nature of change relative to the baseline: positive or negative; and

- Reversibility: the degree of change relative to existing environmental conditions.

56. The categorisation of some of these elements is not always appropriate or required, and may rely on expert opinion.

57. The categorisation of duration for topics considered within this ES is presented in Table 3-5.

Table 3-5 Definitions of temporal scale of magnitude

Temporal Scale	Definition
Permanent	Impacts continuing indefinitely beyond the span of one human generation (taken as approximately 25 years), except where there is likely to be substantial improvement after this period.
Long term	Approximately 15 - 25 years or longer (refer to above).
Medium term	Approximately 5 - 15 years.
Short term	Up to approximately 5 years.

58. In order to help define impact magnitude, the criteria presented in Table 3-6 have been adopted for the purposes of this EIA. While Table 3-6 provides guidelines of a generic nature, it should be noted that more specific guidelines in relation to impact magnitude have been adopted for topics (i.e. marine ornithology and marine mammals), where considered necessary.

Table 3-6 Generic guidelines used in the determination of magnitude of effect

Magnitude	Description
High	Loss of resource and/or integrity of the resource; severe damage to key characteristics, features or elements (adverse). Permanent / irreplaceable change, which is certain to occur. Large scale improvement of resource or attribute quality; extensive restoration or enhancement (beneficial).
	Loss of resource, but not affecting integrity of the resource; partial loss of or damage to key characteristics, features or elements (adverse). Permanent / irreplaceable change, which is likely to occur. Improvement to, or addition of, key characteristics, features or elements of the resource; improvement of attribute quality (beneficial).
Medium	Minor loss of, or alteration to, one (maybe more) key characteristics, features or elements; measurable change in attributes, quality or vulnerability (adverse). Long-term though reversible change, which is likely to occur. Minor improvement to, or addition of, one (maybe more) key characteristics, features or elements of the resource; minor improvement to attribute quality (beneficial).
Low	Very minor loss of, or alteration to, one (maybe more) key characteristics, features or elements; noticeable change in attributes, quality or vulnerability (adverse). Short- to medium-term though reversible change, which could possibly occur. Very minor improvement to, or addition of, one (maybe more) key characteristic, feature or element; very minor improvement to attribute quality (beneficial).
Very low	Temporary or intermittent very minor loss of, or alteration to, one (maybe more) characteristic, feature or element; possible change in attributes, quality or vulnerability (adverse). Short-term, intermittent and reversible change, which is unlikely to occur. Possible very minor improvement to, or addition of, one (maybe more) characteristic, feature or element; possible improvement to attribute quality (beneficial).

Impact Significance

59. Subsequent to establishing the sensitivity and magnitude, the impact significance is predicted by using quantitative or qualitative criteria, as appropriate, to ensure a robust assessment. The significance of the potential impacts is assessed on the scale, degree or intensity of disturbance to the baseline conditions. Four levels of magnitude are used: high; medium; low; or negligible, as defined in Table 3-6 Generic guidelines used in the determination of magnitude of effect.
60. Impact statements carry a degree of subjectivity, as they are based on expert judgement regarding the effect-receptor interaction that occurs and on available data. As such, impact statements should be qualified appropriately. Where possible the matrix presented in Table 3-7 has been used to aid assessment of impact significance, combined with the application of expert judgement, to facilitate a consistent approach throughout the EIA. However, for each topic within the EIA, best practice methodology (based on the latest available guidance) has been followed and hence, when more appropriate, an alternative approach to the use of a matrix may be used.
61. By combining the magnitude of the impact and the sensitivity of the receptor in a matrix (see Table 3-7), the final significance of the impact (prior to the implementation of mitigation measures) can be obtained.

Table 3-7 Impact assessment matrix

		Negative Magnitude				Beneficial Magnitude			
		High	Medium	Low	Negligible	Negligible	Low	Medium	High
Sensitivity	High	Major	Major	Moderate	Minor	Minor	Moderate	Major	Major
	Medium	Major	Moderate	Minor	Minor	Minor	Minor	Moderate	Major
	Low	Moderate	Minor	Minor	Negligible	Negligible	Minor	Minor	Moderate
	Negligible	Minor	Minor	Negligible	Negligible	Negligible	Negligible	Minor	Minor

62. Definitions of impact significance are provided in Table 3-8. In the context of EIA, 'significant impacts' are taken to be those of moderate or major significance (as defined in Table 3-8 below); albeit that appropriate mitigation, where available, should be sought for all impacts. Whilst minor impacts would not be deemed to be significant in their own right, they may contribute to significant impacts through inter-relationships or cumulative impacts.

Table 3-8 Impact significance definitions

Value	Definition
Major	Very large or large change in receptor, either adverse or beneficial, which are important at a population (national or international) level because they contribute to achieving national or regional objectives, or, expected to result in exceedance of statutory objectives and / or breaches of legislation.
Moderate	Intermediate or large change in receptor, which may to be important considerations at national or regional population level. Potential to result in exceedance of statutory objectives and / or breaches of legislation.
Minor	Small change in receptor, which may be raised as local issues but are unlikely to be important at a regional population level.

Value	Definition
Negligible	No discernible change in receptor.

63. It should be noted that any residual impact (the impact after the implementation of mitigation; see Section 3.3.4.6 below) which remains at the level of 'moderate' or 'major' is regarded by the EIA Regulations as being significant.
64. It should also be reiterated that, although this section sets out the overall approach adopted for this EIA, individual chapters may take their own approach where industry standard methodologies are appropriate or another approach has been agreed with the relevant regulator. Where a different approach is taken, this is explained in the relevant methodology section.

3.3.4.4 Confidence

65. Once an assessment of a potential impact has been made, it is necessary to assign a confidence value to the assessment to assist in the understanding of the judgement. This is undertaken on a simple scale of high-medium-low, where high confidence assessments are made on the basis of robust evidence, with lower confidence assessments being based, for example, on extrapolation and use of proxies.

3.3.4.5 Mitigation Measures

66. Where an impact assessment identifies that an aspect of the proposed scheme is likely to give rise to significant environmental impacts, mitigation measures have been proposed, in order to avoid impacts or reduce them to acceptable levels.
67. For the purposes of the EIA, two types of mitigation have been defined:
- Embedded mitigation: mitigation measures that are identified and adopted as part of the evolution of the proposed scheme design, and are included and assessed in the EIA; and
 - Additional mitigation: mitigation measures that are identified during the EIA process specifically to reduce or eliminate any predicted significant impacts.
68. It is important to note that the mitigation measures applied should be proportionate to the scale of the impact predicted. Appropriate mitigation measures have been discussed and agreed, where possible, with the relevant regulatory authorities and stakeholders. Whilst mitigation for minor or negligible impacts may not be specifically defined as a matter of course, industry standard or 'embedded' mitigation often applies in these cases (and is set out herein). It is also recognised that minor and negligible impacts could become significant when considered cumulatively with other pressures on a receptor and, in this event, mitigation may be required.
69. All mitigation associated with the proposed scheme is identified and described in more detail in the relevant chapters of the ES (**Chapters 6 to 23**).

3.3.4.6 Residual Impacts

70. Where further mitigation measures are identified, the significance of the residual environmental impact (i.e. the post-mitigation impact) has been re-assessed and residual impacts described.
71. Where no mitigation measure is proposed, a discussion explains why the impact cannot be reduced.

3.3.4.7 Monitoring

72. Appropriate mitigation measures have been identified and recommended in this ES where the EIA process has identified an adverse impact and mitigation is available (see Section 3.3.4.5 above). In some cases, in order to ensure that the mitigation measures are successful or where there is significant uncertainty with respect to important receptors, monitoring may be appropriate.
73. Monitoring programmes are most commonly required during and shortly after construction, but can also be prior to and during operations. The nature of any monitoring is dependent on the nature of the effect or mitigation measure under inspection and is discussed within the relevant chapters of the ES (**Chapters 6 to 23**).

3.3.4.8 Inter-relationships

74. The impact assessment also considers the inter-relationship of impacts on individual receptors. For example, a landscape and visual effect and noise impact may cumulatively impact on a single receptor. This has been covered within each technical chapter in the inter-relationship section.

3.3.4.9 Interactions

75. The impacts identified and assessed for each topic have the potential to interact with each other, which could give rise to synergistic impacts as a result of that interaction. The areas of interaction between impacts are presented in each chapter, along with an indication as to whether the interaction may give rise to synergistic impacts. This provides a screening tool for which impacts have the potential to interact. There is then an assessment for each receptor (or receptor group) related to these impacts in two ways. Firstly, the impacts are considered within a development phase (i.e. construction, operation or decommissioning) to see if, for example, multiple construction impacts could combine. Secondly, a lifetime assessment is undertaken which considers the potential for impacts to affect receptors across development phases.

3.3.4.10 Cumulative Impacts

76. Cumulative Impact Assessment (CIA) is undertaken as part of each technical chapter impact assessment. There is no legislation that outlines how CIAs should be undertaken. However, the EIA and Habitats Directives and their associated regulations require the consideration of direct impacts and any indirect, secondary and cumulative effects of a project. Schedule 4, of Regulation 17 (3), of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 states that the CIA should consider: “the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources”.
77. Guidance on CIA is provided in a number of good practice documents. This guidance is not prescriptive, but rather suggests various approaches which may be used, depending on their suitability to the proposed scheme (for example the use of matrices, expert opinion, consultation, spatial analysis and carrying capacity analysis).
78. A tiered approach has been adopted for the proposed scheme, based upon the following definitions:

- Site-specific (or within-development) cumulative impacts - different effects associated with the proposed scheme have the potential to interact and, together, influence common receptors. Where applicable, these inter-relationships are considered in the ES and HRA.
- Wider cumulative impacts which are the combined impacts (additive or interactive) that may occur between the proposed facilities, and any other relevant development(s) for which information is publicly available.

79. With respect to 'past' projects, a useful ground rule in CIA is that the environmental impacts of schemes that have been completed should be included within the environmental baseline; as such, these impacts will be taken into account in the EIA process and, generally, can be excluded from the scope of CIA. Where projects are already in existence they are therefore deemed to be part of the existing environment, contributing to the baseline conditions and are therefore not considered to provide a further cumulative impact. However, the environmental impacts of recently completed projects may not be fully manifested and, therefore, the potential impacts of such projects should be taken into account in the CIA.
80. The study area for the CIA varies depending on the range and characteristics of the receptor as well as the extent of impacts associated with the proposed scheme and therefore each technical chapter provides information on the relevant foreseeable projects for consideration in the CIA.

3.3.4.11 Royal HaskoningDHV as Competent Experts

81. The EIA process also requires that an ES is prepared by competent experts. This ES has been compiled by Royal HaskoningDHV. Royal HaskoningDHV has a demonstrable track record of successful delivery of both design and environmental assessment of marine and coastal infrastructure projects, including coast protection and flood alleviation schemes that add value to the local community and enable regeneration and economic growth. This experience includes a number of multi-award winning schemes, and includes other projects where we have worked closely with the landscape design subconsultants for this scheme, Oobe.
82. Royal HaskoningDHV is a corporate member of the Institute of Environmental Management & Assessment (IEMA) (number 0001189) and also a Corporate Registered Assessor for EIA under IEMA's voluntary EIA Quality Mark scheme, through which EIA activity is independently reviewed, on an annual basis, to ensure it delivers excellence in areas including EIA management, team capabilities, regulatory compliance, content, presentation, and improving practice.
83. All Royal HaskoningDHV's lead authors are senior professionals with a significant track record in undertaking technical assessment and EIA in their discipline, and many are chartered in their field. The team undertaking the EIA for the Millport Coastal Flood Protection Scheme is comprised of a dedicated core team of EIA professionals who take the lead role in the co-ordination and management of the EIA and the preparation of the ES. The core team is then supported by a wider team of technical specialists taking responsibility of the data collection, data analysis and technical impact assessment.
84. Some of the technical assessment and associated ES chapters are undertaken by specialist consultancies appointed as subcontractors to Royal HaskoningDHV. These include, Seascope, Landscape and Visual Impacts Assessment and Ornithology. All subconsultants have been selected by Royal HaskoningDHV and approved by North Ayrshire Council based on stringent quality checks.

85. Expert advice on landscape and visual impacts has been provided by OOBE, a Landscape Institute registered practice where all senior grade staff are Chartered Members of the Landscape Institute and bound by the Institute's Code of Conduct. OOBE have successfully worked with Royal HaskoningDHV on a number of similar projects, including award winning schemes.
86. The assessment of impacts on ornithology and the commissioned one-year bird survey of Millport Bay were undertaken by Atlantic Ecology. Atlantic Ecology is an ornithology consultancy headed by Digger Jackson that specialises in marine and terrestrial ornithology impact assessment studies and bird survey work. Digger holds a PhD in zoology and has over 30 years' experience as a research biologist and senior consultant working on a wide range of conservation science and commercial projects. Atlantic Ecology has worked previously with Royal HaskoningDHV on a number of tidal stream and offshore wind energy and port developments

3.3.4.12 Assumptions and Limitations

87. The EIA process requires an ES to provide an indication of any difficulties (technical deficiencies or lack of know-how) encountered during the assessment process. Any such assumptions or limitations are identified within the relevant topic chapter, where relevant.
88. The information provided by third parties, including publicly available information and databases, is correct at the time of publication. The EIA has been subject to the following limitations:
 - Existing environmental conditions have been assumed to be accurate at the time of the physical surveys; however, due to the dynamic nature of the environment, conditions may change during the various phases of the development; and
 - The assessment of cumulative impacts has been reliant on the availability of accurate information on the proposed developments that may act in combination with the one outlined within this ES.

3.4 Consultation

89. **Appendix 3.2** details the consultation responses received for the Scoping Report and how these have been taken into consideration. It is North Ayrshire Council's intention is to work closely with the local community throughout the life of the proposed scheme. As such, further to the responses to the Scoping Report, additional consultation has been undertaken with relevant consultees and stakeholders, including the local community. A number of public exhibitions and design workshops have been held in Millport throughout the development of the proposed scheme, to provide information to the public about the proposed development and gain feedback to inform the assessment of options and development of the proposed scheme design. During design development, local consultation and community engagement has taken the form of:
 - Public Meetings (**Appendix 3.3**);
 - Questionnaires (**Appendix 3.2**);
 - Newsletters (**Appendix 3.4**);
 - Adverts in the local paper;
 - Council website; and,
 - Working with local schools.

3.4.1 General Approach to Consultation

90. North Ayrshire Council recognises that effective and meaningful consultation is an integral part of its development activities and is committed to ensuring an open and transparent approach to engagement and consultation with stakeholders.
91. Early engagement of local communities and statutory consultees aims to bring about the following shared benefits:
- To allow the public to influence how the proposed scheme is developed and how it is integrated in the community by providing the development team with feedback on potential options;
 - To help local people and stakeholders understand better what the proposed scheme means for them;
 - To obtain important information about the economic, social and environmental impacts of the proposed scheme – helping North Ayrshire Council to identify unsuitable Scheme options as early as possible;
 - To enable potential mitigating measures to be considered and, where appropriate, built into the proposed scheme before the application is submitted; and
 - To identify new ways in which the proposed scheme could support wider strategic and/or local objectives.
92. Public engagement and consultation has been undertaken to engage with user groups, communities and individuals potentially affected by the proposed scheme. These groups were provided with details of the proposed scheme, an overview of studies and surveys being undertaken and an explanation of the EIA process. This process provided the framework for expression of opinions, information sharing and stakeholder feedback. A summary of public engagement and consultation is set out in the following sections.
93. The purpose of early EIA stakeholder consultation on the proposed scheme is to enable discussion of the proposals and potential impacts with stakeholders and to seek feedback so that comments can inform proposals, including the EIA and design development process.

3.4.2 Approach to EIA Consultation

94. A Scoping Report was submitted to competent authorities and statutory in March 2017 as part of the EIA process (Royal HaskoningDHV, 2017). This outlined three potential options for the proposed scheme and broadly described the impact to be assessed as part of the EIA along with the methodology for these assessments.
95. Formal responses were received in April and May 2017, which have informed this EIA. All responses are detailed and considered within the EIA (Chapters 6 to 23). The responses provided comments on the approach to the assessments of environmental impact and agreement on which topics could be scoped in or out of the EIA. The responses also informed the assessment of options for works within the coastal waters at Millport Bay.
96. An interim Environmental Report was produced in December 2018, and it summarised the initial findings and interpretations of surveys and desk-based assessments which have been undertaken

and detailed how the design of the scheme was developed. A Red Amber Green (RAG) assessment was presented for all scheme options which led to the identification of the preferred scheme option. This report was issued to all key stakeholders, with a request for comments to be provided.

97. Additional consultation with key stakeholders has been ongoing, led by North Ayrshire Council and Royal HaskoningDHV. Details of this stakeholder consultation is provided in **Error! Reference source not found.**

Table 3-9 Stakeholder consultation undertaken

Topic	Date	Attendees	Agenda
Infrastructure constraints	16 th August 2016	Scottish Water	<ul style="list-style-type: none"> Site visit to review potential constraints on the proposed scheme due to the location of Scottish Water assets.
Scheme options, particularly in relation to Navigation and Moorings	16 th August 2016	Millport Harbour Users Group	<ul style="list-style-type: none"> Minutes included in Appendix 3.3 Comments on Newsletter 1 Flood risks to Millport Millport pier and proposed breakwater extension Alternative options Other issues regarding initial scheme proposals Future engagement
Navigation and moorings	17 th May 2017	The Crown Estate Scotland	<ul style="list-style-type: none"> TCE Scotland Interests in Millport Navigation and moorings in Millport Bay Discussion of potential options
Millport Marina Focus Group	4 th December 2017	Millport Marina Focus Group	<ul style="list-style-type: none"> Minutes included in Appendix 3.3 Background to FPS Cabinet Meeting of 14th November 2017 Marina Study Millport Pier
Millport Marina Focus Group	2 nd May 2018	Millport Marina Focus Group	<ul style="list-style-type: none"> Minutes included in Appendix 3.3 Update on FPS progress Planned public consultation Dive survey Marina options
Navigation	3 rd May 2018	P.S. Waverley	<ul style="list-style-type: none"> Potential constraints of the proposed scheme on navigation by the P.S. Waverley
Need for the Scheme, Recommended proposed scheme and Affordability	23 rd May 2018	Scottish Government	<ul style="list-style-type: none"> Flood risks to Millport Potential scheme options Scheme recommendation – environmental, geotechnical, economic and project risk considerations Affordability of proposed scheme
Millport Marina Focus Group	17 th January 2019	Millport Marina Focus Group	<ul style="list-style-type: none"> Minutes included in Appendix 3.3 Update on FPS progress Planned public consultation Ayrshire Growth Deal Millport Pier

Topic	Date	Attendees	Agenda
Landowner agreement	14 th February 2019	Land agent for the Bute Estate	<ul style="list-style-type: none"> Scheme introduction
Flood Risk Assessment	21 st March 2019	SEPA	<ul style="list-style-type: none"> Baseline flood risk assessment and economic appraisal of the proposed scheme.
Navigation and moorings	20 th August 2019	Northern Lighthouse Board	<ul style="list-style-type: none"> Design mitigation measures (navigation aids) required for proposed scheme
Navigation and moorings	21 st August 2019	The Crown Estate Scotland	<ul style="list-style-type: none"> Potential impacts of Proposed scheme on existing moorings Agreements for occupation of Crown land
Landowner agreement	30 th September 2019	Land agent for the Bute Estate	<ul style="list-style-type: none"> Consents process for the proposed scheme and landowner agreement
Infrastructure constraints	1 st October 2019	Scottish Water	<ul style="list-style-type: none"> Potential constraints on the proposed scheme due to the location of Scottish Water assets, and mitigation measures.
Navigation	28 th October 2019	Clydeport	<ul style="list-style-type: none"> Introduction to Proposed scheme Navigation responsibilities Consents process Potential mitigation measures (navigation aids)

98. After the consultation meeting with the Millport Harbour Users group in August 2016, North Ayrshire Council held subsequent meetings with this group to discuss and resolve various issues relating to the harbour, including the developing proposals for the proposed scheme.
99. North Ayrshire Council and Royal HaskoningDHV have reviewed all stakeholder consultation responses and in light of the feedback, have made a number of key decisions in relation to the design of the proposed scheme, which are outlined in **Chapter 4 Site Selection and Assessment of Alternatives** and **Chapter 5 Project Description**.

3.4.2.1 Consultation with the Local Community

100. Four community engagement workshops have been held, with consultation questionnaires issued alongside each of these workshops. Reports were prepared to summarise the consultation process and the questionnaire feedback following each event. These are provided in **Appendix 3.2** and include the details of the following consultations and questionnaires:
- The first consultation and questionnaire (November/December 2016) focussed on how the seafront is used and the important aspects to be considered in development of the scheme.
 - The second consultation and questionnaire (March 2017) provided an update on the development of the scheme proposals and explored the community's wider ambitions for the town (led by the Council's Tourism and Coastal Economy team).
 - The third consultation and questionnaire (February 2019) updated local residents on progress with scheme development, including the findings of the Scheme Recommendation

Report that was presented to North Ayrshire Council's Cabinet. The community design workshops explored the requirements for the onshore works, including the location, appearance, landscaping and access needs for the flood walls and other structures.

- The fourth consultation and questionnaire (August 2019) event updated the Millport community on the progress with the development of the scheme proposals. The aim of the questionnaire provided alongside this event was to provide a further opportunity for comment before the formal Flood Protection Scheme documents were prepared and submitted for statutory consultation and approval by the Scottish Government.
101. All consultation materials prepared for the community engagement workshops were made available on the North Ayrshire Council website (North Ayrshire Council, 2019). The consultation questionnaires were also provided digitally for completion online.
102. Targeted consultation meetings have also been held with groups of residents to discuss particular issues relating to the Cross House, Clyde Street and Crichton Street parts of the proposed scheme, in advance of the August 2019 public consultation:
- For the Cross House, the position of the flood wall in front of the property was reviewed. The main conclusion from this discussion was agreement that the garden wall should be replaced with a flood wall, instead of having an additional wall seaward of the garden wall in an area where there is limited space;
 - For Clyde Street, additional information was provided about the rock revetment proposals, including the height of the rock revetment compared to the natural rock foreshore. The impact of the flood protection scheme construction on property boundaries was also discussed. Further details of the rock revetment proposals (cross-sections, elevations and visualisations) were provided at the August consultation event to confirm the information provided during the targeted meetings; and
 - The flood protection scheme proposals for Crichton Street have been reviewed again to ensure that access to the foreshore is maintained and the height of the flood wall minimised to reduce visual impact.
103. As the Community Consultation Programme has developed, feedback has been increasingly positive. The August 2019 Community Consultation was a very positive event, with good attendance. Support for the scheme proposals was again strong, building on the positive feedback previously received during the February 2019 consultation. Millport residents provided overwhelmingly positive feedback on how their comments had been taken on board in the development of the onshore elements of the scheme since the February community design workshops.
104. Five newsletters have been produced, informing the local community of the ongoing development of the proposed scheme and welcoming feedback. They are provided in **Appendix 3.4** and were published:
- July 2016;
 - September 2016;
 - February 2017;
 - June 2017; and



- Autumn 2018.

3.5 References

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REPORT

Millport Coastal Flood Protection Scheme: Environmental Statement

Appendix 3.1 Interim Environmental Appraisal

Client: North Ayrshire Council

Reference: PB4749-RHD-ZZ-XX-RP-Z-0003.1

Status: Final/F01

Date: 31 January 2020

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Document short title: Millport Interim EA
Reference: I&BPB4749R001F1.0
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Date / initials: AS 13/11/2018

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Classification

Project related



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Appendices

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1 Introduction

1.1 Background

The town of Millport is located at the southern end of the island of Great Cumbrae, 2.5km offshore from mainland North Ayrshire in the Firth of Clyde, as shown in **Figure 1**.

Millport is a town which is built within a narrow low-lying coastal strip, with properties located to the landward side of the coastal road. Tourism is a strong component of the local economy of Millport. Furthermore, the project area contains a number of important areas of ecological interest such as Kames Bay and Ballochmartin Bay, which are designated as Sites of Special Scientific Interest (SSSI).

Millport is at risk from coastal flooding due to wave overtopping, which poses a risk to residential and commercial properties within the flood risk zone. Flood risk could result in serious economic damage, up to £100 million over the next 100 years. Investment in flood defences has the potential to encourage economic development and regeneration of Millport. A flood defence scheme for Millport is proposed, the study area for which is shown in Figure 1.

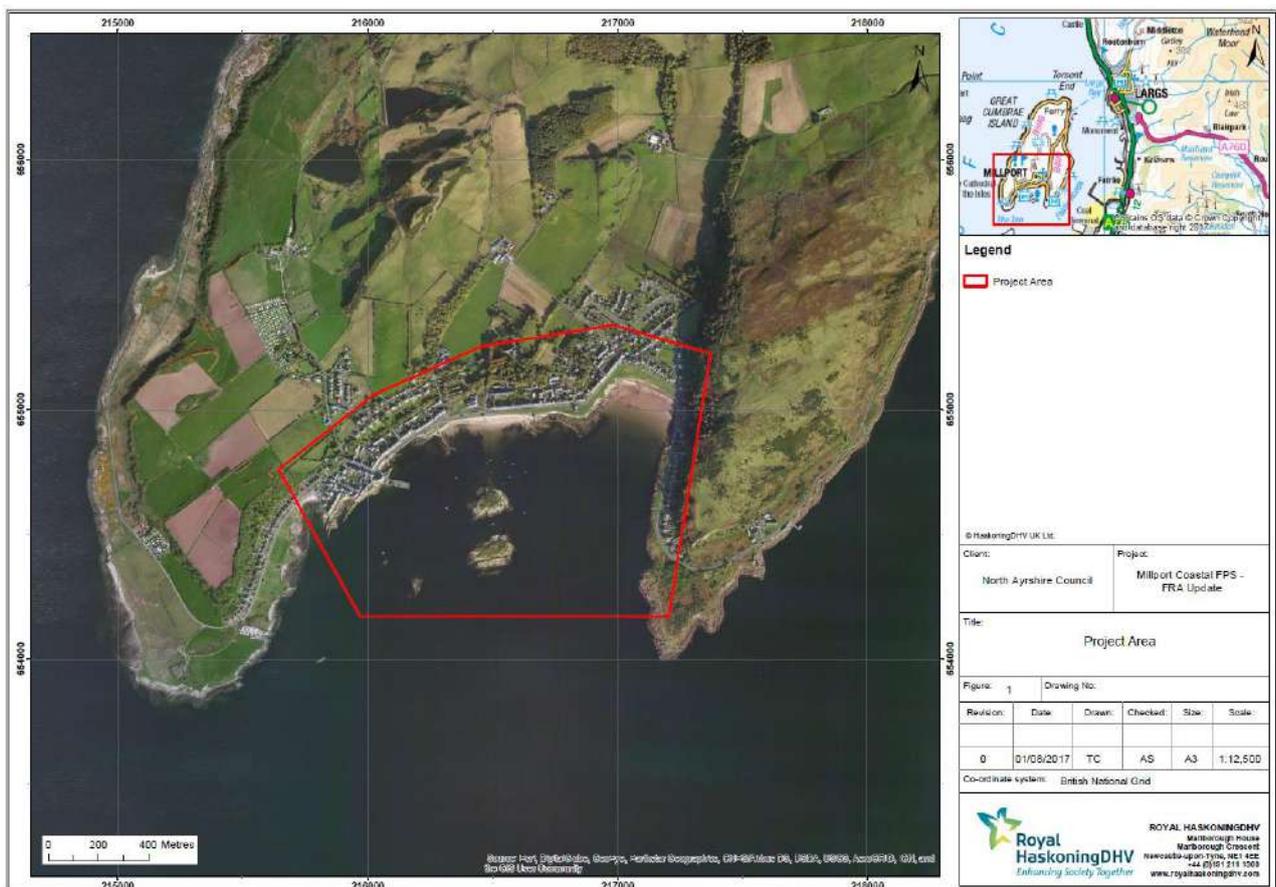


Figure 1 - Study Area

1.2 Purpose of this interim Environmental Report

An interim Environmental Assessment (EA) has been undertaken of the proposed scheme, focusing on the alternative options for the coastal waters at Millport Bay, to support transparent dialogue with regulators,

stakeholders and the local community. The findings of the interim EA are reported in this interim Environmental Report.

A Scoping Report was submitted to competent authorities and statutory consultees, as listed in **Appendix 5**, in March 2017 as part of the EIA process (Royal HaskoningDHV, 2017 [Ref. 3]). This outlined the proposed project and broadly described the impacts to be assessed as part of the EIA and methodology for these assessments. Formal responses were received in April and May 2017, as detailed in **Appendix 5**, which have informed this interim EIA. The responses provided comments on the approach to the assessments of environmental impact and agreement on which topics could be scoped in or out of the EIA. The responses also informed the assessment of options for works within the coastal waters at Millport Bay. The preferred options have been selected based on the elements presented in the Scoping Report, desk based assessments and surveys, as presented in the sections below.

This interim Environmental Report summarises initial findings and interpretations of surveys and desk based assessments which have been undertaken and details how the design of the scheme has been developed. A Red Amber Green (RAG) assessment is presented for all scheme options which leads to identification of the preferred scheme options. The methodology for the RAG assessment is presented in **Section 3.2**.

1.3 Proposed Solutions

Royal HaskoningDHV was commissioned by North Ayrshire Council to develop coastal flood risk management options for Millport. The options include works on land, works on the foreshore, and works within the coastal waters at Millport Bay.

All of the options considered for this development will involve the same onshore and foreshore works, for which the range of potential solutions is limited. These works will include flood walls and improvements to existing structures onshore, as well as shore connected rock armour breakwaters and rock armour revetments on the foreshore.

Alternative options for foreshore works have previously been considered. The arrangements of shore-connected breakwater and revetments shown in Figure 2 and Figure 3 are preferred. Alternative layouts previously considered did not provide an equivalent level of flood protection, and there was no difference between the environmental impacts and benefits of those alternatives and the preferred options.

This interim Environmental Report focuses on the offshore works required under each of three preferred options, to inform the selection of a preferred approach. These offshore works include:

- **Option 1 (Figure 2):** The timber section of Millport Pier would be removed. The existing masonry part of Millport Pier would be retained and extended seaward by about 135m. The nearshore breakwater would be constructed using either tied sheet piles with a concrete deck and a rock armour revetment along the seaward face. Alternatively, a rock armour breakwater could be constructed around a 30m long bored pile pier structure. If Option 1 is preferred, then the construction method for the nearshore breakwater will depend on the findings of further offshore geotechnical investigations.
- **Option 2 (Figure 3):** A 120m long rock armour breakwater would be constructed to connect The Leug and The Spoig. A 210m long breakwater would be constructed between The Spoig and the southern Eilean. Alternative breakwater layouts have previously been considered and ruled out based on potential risks to navigation, coastal process impacts and high costs. No works would be undertaken to the timber section of Millport Pier. The future management of the pier would be considered separately.

- **Option 3 (Figure 3):** This option is the same as Option 2 in terms of the offshore breakwaters. In addition, the timber part of Millport Pier would be replaced with a 30m x 25m bored concrete pile structure, which would have a similar open appearance to the existing pier.

1.4 Consultation to Date

Appendix A1 details the consultation responses received for the Scoping Report and how these have been taken into consideration. Further to the responses to the Scoping Report, additional consultation has been undertaken with relevant consultees. Public exhibitions have been held in Millport to provide information to the public about the proposed development and gain feedback to inform the assessment of options.

It is North Ayrshire Council's intention is to work closely with the local community throughout the life of proposed project, and particularly during the development and ultimate selection and design of the scheme. As such, specific consultation with the local community has been undertaken to take in their views on the scheme proposals, which will inform the final project design.

During design development, local consultation and community engagement has taken the form of:

- Public Meetings;
- Newsletters;
- Questionnaires;
- Adverts in the local paper;
- Council website; and,
- Working with the local school.

2 Surveys

Surveys and desk-based assessments for specific environmental topics / receptors have been undertaken following submission of the Scoping Report. **Table 1** summarises the survey methodologies and / or aims of desk based assessments which have been undertaken so far. The findings of these have helped establish the baseline environment, which in turn has informed this interim EIA and potential impacts which are presented in **Table 2**.

This initial Environmental Report focusses on the options for the offshore components of the scheme. Further assessments and interpretation will be undertaken as part of a full Environmental Impact Assessment (EIA), detailing significance of impacts, and reported within a formal Environmental Statement (ES).

Table 1 - Environmental Assessments

Environmental Topic	Assessment
Coastal Processes	<p>Whilst the Scoping Report concluded impacts on coastal processes were unlikely to be significant, concern about coastal processes has been expressed by the local community, Marine Scotland and Scottish Environment Protection Agency (SEPA). As such, a desk-based assessment has been completed of the predicted effects on coastal processes of the scheme options (Royal HaskoningDHV, 2018 [Ref. 8]).</p> <p>This desk based assessment demonstrated that a conceptual understanding of coastal processes is proportionate to the risk of impacts on coastal processes. The assessment was supported by Wave Disturbance Modelling (Royal HaskoningDHV, 2017b), beach samples, and nearshore drop-down videos.</p>
Marine Water and Sediment Quality	<p>A desk based assessment, including consultation with SEPA and North Ayrshire Council, will be conducted in the next phase of assessments to inform the final EIA.</p>
Ground Conditions and Contamination	<p>A geotechnical desk study has been undertaken which considered the ground conditions at Millport based upon existing information available (Royal HaskoningDHV, 2016 [Ref. 2]). The outcome of the study informed the conceptual design of scheme options at Millport and proposed ground investigations required to inform development of the proposed options.</p> <p>A Ground Investigation Report (GIR) was prepared in 2017 (Royal HaskoningDHV, 2017 [Ref. 6]). This identified the ground conditions in the vicinity of the proposed works at Millport following the completion of the ground investigations proposed by the desk study. The GIR identified the level at which bedrock was founded, below the superficial bed deposits, within the footprint of the proposed onshore works and the breakwater options.</p> <p>To further this work, a Phase 2 site investigation will be undertaken. This will focus on the geotechnical and environmental properties of the superficial bed deposits offshore, including recovery and analysis of a limited number of soil samples in agreed locations in the vicinity of the proposed breakwater options. An interpretative report will be produced.</p>
Terrestrial and Coastal Ecology	<p>An Extended Phase 1 Habitat Survey and an Otter Presence/Absence Survey has been conducted (Royal HaskoningDHV 2018 [Ref. 9]). These surveys were completed in conjunction with an Intertidal Survey which focussed on the intertidal habitats offshore and adjacent to the area surveyed as the Extended Phase 1 Habitat Survey (Royal HaskoningDHV, 2018 [Ref. 10]).</p> <p>The Extended Phase 1 Habitat Survey and Otter Presence/Absence Survey covered the terrestrial habitats within the scheme area plus an additional 250m buffer. This was designed to cover all terrestrial areas which may be impacted by the proposed scheme. The Extended Phase 1 Habitat Survey comprised three components, which collectively enabled a preliminary ecological assessment of the survey area to be undertaken. These components included:</p> <ul style="list-style-type: none"> • A desktop review that summarised information on existing protected species records and nature conservation designations in the area; • An assessment of the habitats recorded within the survey area obtained from the ecological walkover survey; and • An assessment of the survey area for its likelihood of supporting protected species or species of conservation concern. <p>The Otter Presence/Absence Survey involved looking for evidence to confirm the presence/absence of otters within the survey area and the presence/absence of holts and/or resting places that may be impacted by the scheme. The objectives of the intertidal survey were to:</p>

Environmental Topic	Assessment
	<ul style="list-style-type: none"> Identify the habitats and communities present within the survey area; Identify and locate the presence of any rare or protected species within the study area boundaries; and Provide target notes of each biotope, including characterising, rare, protected and non-native species encountered.
Ornithology	<p>Ornithology surveys are required throughout the year to include coastal areas identified for development (plus a buffer of 500m along the coast) and birds on the sea in Millport Bay. These surveys commenced in April 2018 and will include:</p> <ul style="list-style-type: none"> Breeding birds – along the Millport foreshore within the development footprint plus 500m buffer, and across each of the islands of ‘The Eileans’, ‘The Spoig’ and ‘The Leug’. Wintering birds along the coastal and near-shore areas encompassed by the development footprint plus 500m buffer. Seabirds or other marine birds using the near-shore and offshore areas within the development footprint plus surrounding 500m buffer (which would be incorporated within the above surveys for breeding and wintering birds). <p>Surveys will cover range of tidal states in the breeding and non-breeding seasons. Monthly bird surveys are being conducted over a full year (April 2018 – March 2019).</p>
Marine mammals	<p>A desk based assessment for marine mammals has been conducted which summarised the potential risk of impacts to marine mammal species and basking shark as a result of the scheme options (Royal HaskoningDHV, 2018 [Ref. 11]). Potential impacts on designated sites near the proposed development were also assessed.</p>
Fish and Shellfish Resource	<p>A desk based assessment was undertaken to understand the existing baseline on fish and shellfish resource to inform this interim EIA and the final Environmental statement (Royal HaskoningDHV, 2018 [Ref. 12]).</p>
Benthic Ecology	<p>Following consultation with Scottish Natural Heritage (SNH) it was agreed that benthic surveys were required to confirm the presence/absence of maerl in Kames Bay and to provide baseline information on the benthic environment to inform any further developments within the study area. These surveys included:</p> <ul style="list-style-type: none"> Drop-down video to facilitate biotope classification; and Inter-tidal transects to identify biotopes along the shore. <p>The drop-down video surveys were conducted within 25 locations within Kame Bay and the intertidal habitats of the Eileans were also surveyed for evidence of biotopes (Royal HaskoningDHV, 2018 [Ref. 13]).</p>
Tourism and Recreation	<p>A desk-based appraisal was undertaken to establish the baseline environment for tourism and recreation which will inform the EIA. Consultation with the local community through questionnaires also informed this study (Royal HaskoningDHV, 2017 [Ref. 4])</p>
Commercial Fisheries	<p>Consultation with the Scottish Fisherman’s Federation will be undertaken during the design process, once a preferred option has been chosen, to further understand any potential impacts on landing facilities.</p>

Environmental Topic	Assessment
Archaeology and Heritage	A desk-based appraisal and site visit was undertaken in order to establish the archaeological and cultural heritage baseline (Royal HaskoningDHV, 2018 [Ref. 14]).
Landscape, Seascape and Visual	An initial Seascape, Landscape and Visual Impact Assessment (SLVIA) was undertaken to identify the likely significant effects of the different options on seascape, landscape and visual amenity (OOBE, 2018 [Ref. 1]). This assessed predicted visual effects from different viewpoint locations in Millport assessing the magnitude and level of visual effect during construction and operation for each option. Once a final option is chosen the SLVIA will be developed in more detail to assess the predicted impacts of the scheme.
Infrastructure and other Users	This primarily includes effects on navigation and moorings. The Scoping Report consultation response from The Crown Estate Scotland (as detailed in Appendix A) provided information regarding potential impacts on existing moorings in Millport Bay and this has informed this interim EIA. Commercial and recreational navigation at (and near to) Millport is limited to small fishing boats and recreational vessels, a cruise vessel and a paddle steamer (PS Waverley). Targeted consultation with organisations with interests in navigation has been undertaken following on from the Scoping Report. A response has been received from the Northern Lighthouse Board, and the Royal Yachting Association Scotland are expected to reply within the next week, these responses will inform the final EIA. A high-level navigation risk assessment will be undertaken for the preferred option to assess the potential implications of the offshore works on navigation practices.
Noise and Vibration	An assessment of construction traffic noise will be undertaken, based on current best practice. The results will inform the final EIA.
Air Quality	An air quality assessment will be undertaken following best practice guidance which will inform the final EIA.

3 Assessment of Options

3.1 Description of Options

3.1.1 Option 1: Nearshore Breakwater Extension to Millport Pier

The location plan for Option 1 (onshore and offshore works) is shown in **Figure 2**. Millport Pier would be extended by 135m in a south-easterly direction. The breakwater would most likely be constructed from tied sheet piles infilled with processed demolition materials, with a concrete deck and rock armour protection to the seaward face. An alternative construction method would be to construct a rock armour breakwater around a 30m long bored pile structure. Should this option be preferred, the form of construction will be selected based on local consultation and the findings of offshore ground investigation.

The breakwater would be built using either offshore plant (barge or temporary platform) or land-based plant (from the existing pier or using a causeway built out from within the existing harbour). The breakwater would be approximately 60m wide and reach a height of 9m to 10m above the sea bed (a comparable level to the deck of the existing masonry and timber pier). Any rock armour required for the breakwater would be delivered by sea.

The existing timber section of the pier (which is not currently in use due to safety considerations) will need to be demolished as part of the construction process. It is expected that improvements will be made to the existing masonry and concrete section of the pier to reduce the risk of structural failure to the pier in the future. This work might involve replacing the infill material to the existing pier, grouting of the masonry and replacement of the concrete deck. Construction works would be undertaken from the land.

There is the potential for additional moorings and associated pontoons to be attached to the breakwater in the future to improve facilities for vessels using the bay, which might include the Waverly Paddle Steamer or other large vessels.

3.1.2 Option 2: Offshore Breakwaters

The proposed offshore breakwaters are shown in **Figure 3**. Option 2 consists of a 120m breakwater connecting The Leug and The Spoig rock outcrops and a 210m breakwater connecting The Spoig and the southern Eilean.

The offshore breakwaters would be constructed from 5 to 7 tonne primary rock armour, with 0.3 to 1 tonne rocks forming an underlayer and a quarry-run core. Geotextiles may be required around the toe of the breakwater, and the design process is currently investigating if it is possible to avoid any drilling or excavation activity at the toe. The 120m rock breakwater extending between The Leug and The Spoig rock outcrops would be about 50m wide at its base, reaching a height of 8.5 m above the sea bed. The crest level of the breakwater is expected to be about +4.0 m AOD, 2.2m above MHWS (1.8 m AOD) and 5.2m above MLWS (-1.2 m AOD).

The rock breakwaters between the Spoig and the southern Eilean would be about 60m wide reaching a height of 13m above the average sea bed level. The breakwaters would be located between 300m and 700m from the shoreline, requiring construction via barge. The delivery of rock and other materials will be via barge, which will lead to a large working footprint.

This option does not include works to the existing timber section of Millport Pier (which is not currently in use due to safety considerations). This enables plans for the future management of the pier to be progressed separately from the development of the FPS. It is expected that improvements will be made to the existing masonry and concrete section of the pier to reduce the risk of structural failure to the pier in the

future. This work might involve replacing the infill material to the existing pier, grouting of the masonry and replacement of the concrete deck. Construction works would be undertaken from the land.

3.1.3 Option 3: Offshore Breakwaters and Replace Timber Pier

The proposed offshore breakwaters for this option are the same as for Option 2, as shown in **Figure 2**. For Option 3 the existing timber section of Millport pier would be removed and replaced with a bored concrete pile structure, with a similar open appearance to the existing timber pier. A concrete deck would be constructed over the concrete piles. Works would be undertaken from the existing masonry pier and from a temporary platform or causeway built out from the foreshore.

3.2 RAG Methodology

A Red / Amber / Green (RAG) methodology was used to inform the interim EIA and options appraisal. This is considered appropriate to compare a number of options for the same area given the ability to capture and classify the main differentiating issues in three fundamental categories. A RAG assessment of this type enables a clear and direct comparison between each option.

Development considerations captured within the RAG assessment include topics which were scoped in in the Scoping Report (or scoped back in following consultation), and for which initial environmental assessments have been conducted. This includes:

- | | |
|--|---|
| <ul style="list-style-type: none"> • Coastal Processes • Marine Water and Sediment Quality • Terrestrial and Coastal Ecology • Marine mammals and basking shark • Fish and Shellfish Resource | <ul style="list-style-type: none"> • Benthic Ecology • Tourism and Recreation • Archaeology and Cultural Heritage • Landscape, Seascape and Visual Impact • Infrastructure and Other Users |
|--|---|

These topics were assessed by a team of specialists comprising engineers, EIA consultants, landscape, archaeology and ecological experts. The assessment was undertaken using the RAG system which ranks the influence of the consideration on future development, either using defined parameters, professional judgement, or assessing the issue relative to the other potential options. RAG is a standard assessment tool used in the pre-EIA process to assess the potential risks to proposed development options.

Each development consideration is given a score of Red / Amber / Green. These scores indicate the adverse or positive attributes to development respectively. It should be noted that if an option is awarded a Red score, this will not necessarily prevent an option being taken forward as preferred into the next stage if, overall, it performs better than another option.

The surveys and desk based assessments undertaken to date and the performance of the options relative to one another, along with professional judgement, have influenced the criteria of the Red / Amber / Green as well as the scores given. Information about the considerations is provided within the individual cells of the RAG assessment tables.

The method presents all the identified development considerations equally, i.e. there is no weighting of different development considerations relative to each other. Whilst any weighting is not incorporated in the RAG assessment findings, professional judgement, specific guidance and feedback through the consultation process is taken into consideration to inform decisions.

3.3 Assessment of Impacts

Table 2 presents the RAG assessment of impacts for offshore works associated with the three options. As detailed above, only topics for which desk based assessments or surveys have been conducted, and had impacts which were assessed as significant in the Scoping Report, are assessed in this table. Topics for which further assessments are to be undertaken, as detailed in **Table 1**, have not been included.

Table 2 demonstrates that the key issues for selection of a preferred option relate to the impact of the proposed solutions on the human environment. These impacts relate to the visual appearance of the scheme, potential impacts on tourism, recreation and the local economy and changes to navigation in Millport Bay. These issues must be given appropriate consideration in the selection of the preferred option. Their importance is reflected by the investment from North Ayrshire Council in community consultation undertaken to date, and the changes to the scheme proposals and identification of mitigation measures that have resulted from this consultation. Community consultation will continue during detailed design of the scheme.

Predicted impacts on the physical environment and natural habitats have been assessed as relatively limited, particularly on completion of construction, and these impacts can be mitigated through appropriate design and construction methodology.

Table 2 shows that the differences in impacts associated with each option are not significant. Options 2 and 3 have fewer identified impacts than Option 1.

- Option 1: 18 Amber impacts, 1 Red impact
- Option 2: 16 Amber impacts
- Option 3: 16 Amber impacts

The Red categories identified (major adverse predicted impact) were as follows:

- Potential impact on landing facilities for commercial fisheries following construction (Option 2). Further consultation would be required with the Clyde Fisherman's Association regarding this risk if Option 2 was to be preferred.
- Potential long-term visual impact of the nearshore breakwater proposed for Option 1, particularly when viewed from Millport Harbour, Stuart Street and the west end of Glasgow Street.

4 Mitigation Measures

Table 3 sets out potential mitigation measures to address the key residual impacts associated with each of the options. As for the assessment of options, this table focusses on those potential impacts which affect the selection of a preferred option.

This table demonstrates that there are suitable mitigation measures which could be included in the scheme design to address the majority of the residual environmental impacts.

Further assessment of potential environmental impacts and associated mitigation measures will be undertaken on completion of the remaining environmental assessments, which will be progressed when the preferred solution has been identified. This work will include assessment of the potential impacts of the onshore works (flood walls), informed by the findings of the next phase of community consultation, which will include landscape design workshops.

Potential mitigation measures will continue to be developed during detailed design of the preferred option.

Table 2 - Assessment of Options

Potential Impacts	Impact of Options		
	Option 1: Nearshore Breakwater Extension to Millport Pier	Option 2: Offshore Breakwaters	Option 3: Offshore Breakwaters, Replace Timber Pier
Coastal Processes			
Potential temporary increase in suspended sediment concentrations due to construction activities	The coast is dominated by rock platform and relatively coarse mobile sediments. Hence, any plume created by construction activities will be of very low concentration, locally distributed and temporary in nature. Dredging could have negative impacts on water quality although this is likely to be temporary in nature.	The coast is dominated by rock platform and relatively coarse mobile sediments. Hence, any plume created by construction activities will be of very low concentration, locally distributed and temporary in nature. Dredging could have negative impacts on water quality although this is likely to be temporary in nature. In the longer term for Options 2 and 3, there is a risk of accretion in the mooring areas that could require dredging. Dredging of sediment from the seabed could have negative impacts on water quality.	
Potential changes to local waves and bedload sediment transport in the Bay due to presence of the structures	The potential for Option 1 to divert waves / tidal current towards Newtown Beach causing draw-down of sediment is noted as a key concern of local consultees. Option 1 is predicted to result in a reduction in wave penetration into West Bay and a reduction in wave heights immediately to its north. This could potentially lead to enhanced accretion in the bay and along adjacent coasts. However, the drop-down video survey shows that the inshore zone here is dominated by rock outcrops and mixed sediments (sand, gravel and pebbles), and the coast is a rock shore platform with little mobile sediment. This means that the potential for sediment transport is limited and subtle changes in wave height are likely to have a negligible effect. All options are predicted to have an effect on significant wave heights from Millport Pier east to the War Memorial Jetty. The predicted effect on wave heights of Option 1 is less than for Options 2 and 3 and is mainly restricted to a reduction in the coastal zone north of	The implementation of Option 2 or Option 3 would have very little predicted effect on wave heights at West Bay and its immediate coasts. Hence, sediment transport patterns would also be unaffected. All options are predicted to have an effect on significant wave heights from Millport Pier east to the War Memorial Jetty. Options 2 and 3 would have the greatest effect because a continuous breakwater between the offshore islands significantly reduces wave heights in its lee. The effect of the breakwater is not only at the coast, but extends out into the nearshore zone adjacent to the islands. Options 2 and 3 are predicted to slightly reduce wave heights along the western part of Newtown Bay Beach (the eastern half is predicted to change little). This subtle change in wave height caused by the breakwater may have a very small effect on transport and change the patterns of erosion and accretion at the beach.	

Potential Impacts	Impact of Options		
	Option 1: Nearshore Breakwater Extension to Millport Pier	Option 2: Offshore Breakwaters	Option 3: Offshore Breakwaters, Replace Timber Pier
	<p>Millport Pier with wave heights further offshore largely unaffected.</p> <p>At Newtown Bay beach, in the lee of the Eileans, the wave heights predicted for Option 1 are similar to the baseline and so the sediment transport conditions are also unlikely to change.</p>		
	<p>Although there are predicted changes to the waves caused by all options, their effect on sediment transport is considered to be minimal. This is because the drop-down video survey shows that the sediments in the areas affected by changes to wave heights are dominated by mixed sediment (gravel, pebbles, cobbles) with rock outcrop closer inshore, and rock platform at the coast. The means that changes in wave height will have little effect on their ability to transport sediment of these coarse sizes.</p> <p>Given the absence of change in predicted wave heights in Kames Bay and at Kames Bay Beach for both options, the sediment transport patterns at these locations are unlikely to change. The drop-down video survey and beach sampling show a predominance of fine sand to the east of the Eileans, and it is likely that the natural transport of this sediment would continue regardless of which option is chosen. This means that the natural seasonal variations in beach elevation and cross-shore transport would be unaffected.</p>		
Potential changes to local tidal currents in the Bay due to presence of the structures	The layout of all options is only likely to have a very small effect on tidal currents because the tidal currents are very low velocity and not capable of transporting sediment. Hence, there will be a very small change local to the options with very little change elsewhere.		
Potential changes to flushing /exchange of water due to the presence of the structures	<p>The layout of Option 1 will have no effect on tidal flushing of the main area of Millport Bay because all passages for entry and exit of water remain open.</p> <p>Option 1 may impact on tidal flushing of the inner harbour area close to the shore, as the breakwater will change the flow of water from the south and south-west.</p>	<p>Option 2 and Option 3 are only likely to have a very small effect on tidal flushing in Millport Bay because only the narrowest passage for entry and exit of water is blocked.</p> <p>Options 2 and 3 are unlikely to impact on tidal flushing of the inner harbour area because all passages for entry and exit of water remain open.</p>	
Terrestrial and Coastal Ecology			
Direct and indirect impact to otters	Although Millport is a busy tourist town, there is potential for otters to traverse the Millport coastline as they move between the headlands and records of the species have been made in the area. As such there is potential for the direct and indirect impacts to occur to otters. The otter survey found no evidence of otter (such as; spraints, feeding remains, pathways, couches or holts) throughout the survey area, and no otter were observed.		
Marine mammals and basking shark			

Potential Impacts	Impact of Options		
	Option 1: Nearshore Breakwater Extension to Millport Pier	Option 2: Offshore Breakwaters	Option 3: Offshore Breakwaters, Replace Timber Pier
Disturbance from underwater noise during drilling, rock dumping and excavation activities	<p>Drilling: No risk of injury to marine mammals, no risk of impact to basking shark.</p> <p>Rock dumping: No risk of impact to all marine mammals and basking shark.</p> <p>Vessels: No significant risk of disturbance beyond 10m from vessels for all marine mammals. No increased potential impact for basking shark.</p> <p>Dredging: No risk of impact to cetaceans, pinnipeds and basking sharks.</p>		
Disturbance to seal haul outs from increased human activity during construction	<p>Vessel disturbance: Negligible risk of impact to pinnipeds</p> <p>Visual Disturbance during Construction: Potential disturbance of seals at haul-out site depending on construction activities in relation to the location of the haul-out site.</p> <p>Vessel disturbance: Negligible risk of impact to pinnipeds</p> <p>Visual Disturbance during Construction: Potential disturbance of seals at haul-out site depending on construction activities in relation to the location of the haul-out site</p>		
Fish and Shellfish Resource			
Changes in habitat due to changes in hydrodynamic and sediment transport processes following construction	This option has potential to divert waves/ current to Newtown Beach which could lead to draw-down of sediment. Whilst this could change the substrate used by fish for feeding, spawning or nursery grounds, the area affected by option 1 is limited in scale and in a location where it is unlikely to affect fish and shellfish resource.	These options have the potential to reduce wave heights at the breakwater and further out into the nearshore zone adjacent to the islands, and reduce wave heights along western part of Newtown Bay. This could affect sediment transport and change the patterns of erosion and accretion at the beach. However, the coastal processes assessment determined that this option would not have significant impacts on coastal processes. Therefore this is unlikely to impact fish and shellfish resource.	
Reductions in water quality due to reduced tidal flushing following construction	Option 1 is expected to impact wave heights less than Options 2 and 3, with any reduction mainly restricted to the coastal zone rather than further offshore. Sediment transport conditions are unlikely to change at Newtown Beach or Kames Bay, so a reduction in water quality due to reduced tidal flushing is not expected.	Options 2 and 3 will reduce wave heights at Newtown Bay, at the breakwater and further out at in the nearshore zones adjacent to the island. Sediment transport at Kames Bay is unlikely to change. Changes to coastal processes are not likely to be significant therefore reductions in water quality due to reduced tidal flushing is not expected.	
Habitat Loss following construction	This option will result in permanent loss of habitat. The footprint of this option is smaller than Options 2 and 3. Overall the footprint of habitat that would be lost is small in comparison to the habitat available throughout Millport Bay.	These options will result in permanent loss of habitat. The footprint of these options is larger than Option 1. However, the footprint of habitat that would be lost is small in comparison to the habitat available throughout Millport Bay. Therefore, significant impacts on fish and shellfish resource due to habitat loss are not expected.	

Potential Impacts	Impact of Options		
	Option 1: Nearshore Breakwater Extension to Millport Pier	Option 2: Offshore Breakwaters	Option 3: Offshore Breakwaters, Replace Timber Pier
	Therefore, impacts to fish and shellfish resource due to habitat loss are not expected.		
Noise and Vibration disturbance during construction	Noise and vibration from construction activities have the potential to impact fish and shellfish resource. Piling is generally considered the noisiest construction activity, and would be required for construction of the nearshore breakwater. Piling would only be undertaken in the nearshore area close to Millport Pier, over a relatively small area of Millport Bay. Impacts to fish and shellfish resources are expected to be limited.	Noise and vibration from construction activities have the potential to impact fish and shellfish resource. Piling is not required for Option 2, and only a small amount of dredging would be undertaken for this option. Impacts on fish and shellfish due to disturbance is not expected.	Noise and vibration from construction activities have the potential to impact fish and shellfish resource. Piling is generally considered the noisiest construction activity, and would be required for construction of the replacement to the timber part of Millport Pier. Piling would only be undertaken in the nearshore area close to the existing pier, over a relatively small area of Millport Bay. Impacts on fish and shellfish resources are expected to be limited.
Reduction in water quality during construction	Reductions in water quality (suspended sediment, release of contaminated sediment, spills/ leakage of fuel from construction vessels) are not expected to be significant due to the small amount of dredging required for all options. Best practice measures will be adhered to, to minimise the risk of spills/leaks.		
Increase in fish and shellfish abundance following construction	The construction of the nearshore breakwater will provide additional hard and soft substrate throughout the project area. The new hard substrate has the potential to be colonised by marine fauna and flora, providing additional food resources. The footprint of Option 1 is smaller than Options 2 and 3, therefore there is less potential for colonisation.	The construction of the offshore breakwaters will provide additional hard and soft substrate throughout the study area. The new hard substrate has the potential to be colonised by marine fauna and flora, providing additional food resources. The footprint of Options 2 and 3 is larger therefore there is a greater potential for colonisation compared to Option 1.	
Benthic Ecology			
Physical disturbance of intertidal habitats during and following construction	The proposed works on the foreshore may cause disturbance of intertidal areas through habitat loss or disturbance. As the nearshore breakwater works will occur closer to the shore than the offshore breakwater works this option is likely to have a larger impact than Option 2.	The proposed works on the foreshore may cause disturbance of intertidal areas through habitat loss or disturbance.	The proposed works on the foreshore may cause disturbance of intertidal areas through habitat loss or disturbance. The replacement of the timber part of Millport Pier is an additional activity close to the shore meaning this option may have a greater impact than Option 2, although less impact than Option 1.

Potential Impacts	Impact of Options		
	Option 1: Nearshore Breakwater Extension to Millport Pier	Option 2: Offshore Breakwaters	Option 3: Offshore Breakwaters, Replace Timber Pier
Spread of marine non-native invasive species following construction	All Options would provide suitable habitat for the establishment of <i>Sargassum muticum</i> . However this species was not identified during benthic grab sampling nor intertidal surveys.		
Tourism and Recreation			
Disturbance to tourism and recreational users during construction	<p>The construction works for all options have the potential to temporarily impact upon tourism and recreational users of the area as a result of increased disturbance and construction activity, generating noise and vibration, increased traffic, reduced air quality, visual impacts and potentially diversions of the routes of walking trail and cycle routes.</p> <p>There may be temporary disturbance to access to mooring buoys during construction activities.</p> <p>The construction of rocky structures in the coastal waters has potential to disturb existing navigation practices around Millport, as these elements of the proposed scheme will require the use of barges and/or temporary platforms. There is therefore potential for conflict (e.g. increased collision risk, delays to movements) between the construction plant and existing navigation practices. As this is temporary in nature it is not assessed to be a significant impact.</p> <p>There is a potential requirement for closure of the inner harbour during construction which could impact upon existing tourism and recreational practices, however as this is temporary in nature this is not assessed to be a significant impact.</p> <p>It should be noted that coastal protection schemes can sometimes become tourist attractions in their own right, attracting a range of interested parties who come to view the construction works.</p>		
Disturbance to tourism and recreational users following construction	<p>Consultation with the local community found that there is a perceived negative impact on tourism due to changes to the pier, unless this can be designed to enable improved access for large and small vessels.</p> <p>There is the potential to improve mooring facilities following completion of the nearshore breakwater.</p>	<p>For this option, works to the timber part of Millport Pier are not considered to be part of the Flood Protection Scheme. But if no improvements are made as part of the scheme, there may be perceived negative impacts for tourism and recreational users.</p>	<p>Replacement of the timber part of Millport pier with an alternative open structure would improve mooring facilities at the pier.</p>
Reduced availability on the ferry during construction	<p>Although it is proposed that delivery of construction plant and materials to site uses barges as far as possible, some construction vehicles and personnel will still travel to site via the ferry from Largs. For all options, a temporary increase in numbers of construction personnel and vehicles using the ferry could impact upon the space available for recreational users.</p>		
Noise and Dust issues during construction	<p>Construction works for all options have the potential to generate noise and create dust (particularly for construction works on land). Such noise and dust disturbance has potential</p>	<p>Construction works for all options have the potential to generate noise and dust (particularly when undertaking construction works on land). Such noise and dust disturbance has potential to impact upon the tourism and recreational value of the area, albeit on a temporary basis.</p>	

Potential Impacts	Impact of Options		
	Option 1: Nearshore Breakwater Extension to Millport Pier	Option 2: Offshore Breakwaters	Option 3: Offshore Breakwaters, Replace Timber Pier
	to impact upon the tourism and recreational value of the area, albeit on a temporary basis. As the offshore works for Option 1 will be undertaken closer to shore than Options 2 and 3 this option will have a greater impact.		
Traffic and transport link disruption during construction	Construction works for all options are likely to result in temporarily increased traffic on the existing road network. Increased vehicle numbers on local roads could directly impact upon recreational cyclists / walkers using the road network (e.g. users of the Great Cumbrae Island Loop). Increased traffic on local roads could also indirectly impact upon tourism and recreational use as a result of noise, dust and exhaust emissions generated by traffic.		
Temporary visual impact of construction works	Construction works for all options would temporarily impact on the existing visual amenity value of the area as a result of personnel presence, activity, construction materials and construction plant / machinery. A reduction in visual amenity value could impact the number of people undertaking recreational and tourism activities within Millport for the duration of the construction works.		
Reduced disruption to recreational activities following construction	The scheme proposed aims to provide long term flood protection to Millport. All scheme options would result in reduced disruption to recreational users, residents, local businesses and tourists during the operational phase, in comparison with existing levels of disruption during flood events. The proposed scheme would significantly reduce the potential for flooding at Millport.		
	Option 1 would remove the wooden part of Millport Pier. This will reduce safety hazard to the public. Furthermore, there is potential for additional moorings to be incorporated into the nearshore breakwater design, or for pontoons to be attached to the breakwater in the future.	Option 1 would remove the wooden part of Millport Pier. This will reduce safety hazard to the public. However, if the timber pier is not replaced there would be a negative impact on access and mooring facilities compared to Option 1 and Option 3.	Option 3 would replace the wooden part of Millport Pier with an open concrete pile structure. This will reduce safety hazard to the public and improve both access and mooring facilities for recreational users.
Enhanced conditions for water sports following construction	All of the proposed options for works in the coastal waters at Millport Bay are intended to reduce the wave activity in the nearshore zone at Millport. Reduced wave activity may result in an enhanced (safer) environment for recreational sailors, sea kayakers, swimmers and canoeists who utilise the coastal waters at Millport.		
	Option 1 reduces wave activity over a smaller area of Millport Bay compared to Options 2 and 3, so has less potential for beneficial impact.		
Disruption to existing navigation practices for	Discussed in Navigation section.		

Potential Impacts	Impact of Options		
	Option 1: Nearshore Breakwater Extension to Millport Pier	Option 2: Offshore Breakwaters	Option 3: Offshore Breakwaters, Replace Timber Pier
recreational users following construction			
Commercial Fisheries			
Impact on landing facilities following construction	Depending on the design of the nearshore breakwater, Option 1 has potential to enhance the nearshore mooring facilities which improve landing facilities for local fishermen.	If no improvements are made to the timber part of Millport Pier, Option 2 will not change the current status of landing facilities at Millport Pier. Access to landing facilities on the foreshore or at the inner harbour may be altered due to changing navigation routes as a result of the offshore breakwater.	With the replacement of the timber part of Millport Pier with a similar (non-timber) structure, Option 3 has the potential to improve landing facilities. However, access to these facilities may be altered due to changing navigation routes as a result of the offshore breakwater.
Navigation			
Impacts on local mooring following construction	<p>The change in navigation route around the pier is expected to require existing local moorings (inshore of the Eileans) to be moved.</p> <p>Depending on the design of the nearshore breakwater, there may be the potential to provide moorings along the landward and/or seaward faces of the breakwater for small and large vessels.</p> <p>Additional moorings could also be created in the future if pontoons are attached to the landward face of the breakwater, although this could have impacts for navigation around the breakwater.</p>	<p>There is potential to increase the number of moorings inshore of the breakwater, which could include development of a small-scale marina.</p> <p>Visitor moorings located to the north of the Leug will need to be relocated, e.g. to the area inshore of the breakwater.</p> <p>The existing western small vessel anchorage located off of the Leug would need to be adjusted, probably extending further eastwards (i.e. utilising the shelter provided by the breakwater).</p>	<p>Replacement of the timber part of Millport Pier with a concrete piled structure would improve the existing mooring facilities at the pier itself, and access for users of the moorings in Millport Bay.</p>
		<p>With no works to the timber part of Millport Pier there would be no change to the current status of moorings at the pier itself, and the ability for users of the moorings in Millport Bay to get to shore.</p>	
Changing navigation routes	<p>All options have the potential for adverse impacts on the existing navigation practices at Millport due to the presence of rocky structures in the coastal waters. A navigational risk assessment will be undertaken for the preferred option to assess these impacts in more detail. Targeted consultation with stakeholders with interests in navigation is currently ongoing to inform the EIA and to identify appropriate mitigation measures.</p>		
	<p>With Option 1 there would be a change in the navigation route around the pier. Consultation with local harbour users has indicated</p>	<p>Options 2 and 3 would require the navigation route to be changed to east of the Leug. Access to Millport Pier and the inner harbour would not be reduced, although the navigation route would be different, requiring new aids to navigation.</p>	

Potential Impacts	Impact of Options		
	Option 1: Nearshore Breakwater Extension to Millport Pier	Option 2: Offshore Breakwaters	Option 3: Offshore Breakwaters, Replace Timber Pier
	potential risks to navigation inshore of extended breakwater.	Local consultation and risk assessment completed to date have shown that focusing the navigation routes into one channel may reduce some existing risk around the Leug, the Spoig and the Eileans. Closer to the shore the change in navigation route might increase risk for small local vessels.	
Archaeology and Cultural Heritage			
Direct impacts on known/unknown archaeological resources (onshore and foreshore)	<p>Direct impacts on unrecorded archaeological material may occur due to the following:</p> <ul style="list-style-type: none"> excavation works required to construct the proposed scheme (onshore and foreshore scheme elements); placement of rock for the shore connected breakwater and revetment; and vehicle movements across the foreshore. <p>The potential for buried archaeology to be present within the footprint of onshore and foreshore works is anticipated to be low.</p>		
Direct impacts on known and unknown archaeological resources (offshore)	The potential for buried archaeology to be present within the footprint of the offshore works for Option 1 is assessed as low, due to the limited area of works for that option and therefore more limited potential for the presence of archaeological resources close to shore.	Options 2 and 3 have been assessed as having higher risk of impact on known and unknown archaeological resources than Option 1, due to their larger areas of works and the location of works further offshore, increasing the potential for presence of archaeological resources within the works footprint.	
Seascape, Landscape and Visual Impact (SLVIA)			
Onshore construction works, (incl. construction compound, temporary fencing, storage of material, demolition works and plant/ other vehicle location and movements)	The draft SLVIA has assessed the potential impact of onshore construction works for all options, and in all parts of Millport, to be Substantial, Significant & adverse, and temporary .		
Construction works on the foreshore (rock revetment & shore-connected breakwater)	The draft SLVIA has assessed the potential impact of onshore construction works for all options, and in all parts of Millport, to be Substantial, Significant & adverse, and temporary . Any potential adverse visual effects are avoided due to the broad, open coastal views, and background views from this location.		
Construction in the coastal waters of Millport Bay	The draft SLVIA has assessed the potential impact of onshore construction works for all options, and in all parts of Millport, to be Substantial, Significant & adverse, and temporary . Option 1 is closer to shore so the	The draft SLVIA has assessed the potential impact of onshore construction works for all options, and in all parts of Millport, to be Substantial, Significant & adverse, and temporary .	

Potential Impacts	Impact of Options		
	Option 1: Nearshore Breakwater Extension to Millport Pier	Option 2: Offshore Breakwaters	Option 3: Offshore Breakwaters, Replace Timber Pier
	construction works will be more visible and have a greater impact than Options 2 or 3.		
Onshore works after completion	The draft SLVIA has assessed the potential long term impact of the onshore works for all options, and in all parts of Millport, to be Substantial, significant and adverse , due to the proximity of the proposed onshore works to the nearest properties. For the Old Town area, impacts are greater due to the presence of large scale landscape / engineering elements within a small / intimate bay location.		
Coast protection works on the foreshore after completion	The draft SLVIA has assessed the potential long-term impact of the proposed foreshore works onshore construction works to be Substantial, significant and neutral for West Bay, Millburn Street and Crichton Street, due to the small proportion of the view that would be occupied by the foreshore works, and assuming with careful design / selection of materials. For Clyde Street the potential impact of the foreshore works is assessed to be Substantial, significant and adverse , due to the proximity of the proposed onshore and foreshore works to the nearest properties. Elsewhere in Millport, the potential impacts are assessed to be Substantial, significant and neutral , with any potential adverse visual effects reduced due to the broad, open coastal views, background development and assuming careful design and selection of materials.		
Coastal protection works in the coastal waters of Millport Bay, after completion	The potential long-term visual impact of the proposed nearshore breakwater works, when viewed from Millport Harbour, Stuart Street and the west end of Glasgow Street has been assessed as Substantial, significant and adverse , with a man-made structure of substantial size located a short distance offshore. The nearshore breakwater would be located closer to shore, would be more visible and have more impact than Options 2 and 3. Visual impacts could be mitigated through careful design and selection of materials. Elsewhere in Millport, the potential visual impacts of the nearshore breakwater have been assessed to be Substantial, significant and neutral . Any potential adverse visual effects are reduced by the broad, open coastal views, and the small proportion of the view occupied by the offshore works, and assuming careful design / selection of materials.	Option 2 will cause a change in outlook with a man-made structure located offshore, which may have significant impact. The potential long-term visual impact of the offshore breakwaters proposed for Option 2 has been assessed to be Substantial, significant and neutral with any potential adverse visual effects being reduced by the broad, open coastal views, background development and the small proportion of the view occupied by the offshore works. Careful design and selection of materials is assumed.	Option 3 will cause a change in outlook with a man-made structure located offshore, which may have significant impact. The potential long-term visual impact of the offshore breakwaters proposed for Option 3 has been assessed to be Substantial, significant and neutral with any potential adverse visual effects being reduced by the broad, open coastal views, background development and the small proportion of the view occupied by the offshore works. Careful design and selection of materials is assumed. The replacement of the timber pier will also have a visual impact, although the structure is expected to be of a similar open design to the existing timber part of Millport Pier and therefore the change in outlook should be neutral.
Infrastructure and Other Users			

Potential Impacts	Impact of Options		
	Option 1: Nearshore Breakwater Extension to Millport Pier	Option 2: Offshore Breakwaters	Option 3: Offshore Breakwaters, Replace Timber Pier
Damage to known and unknown buried services	All options have the proposed scheme has potential to impact upon known and unknown buried services, most likely through excavations required to construct the new set-back floodwalls. There is also potential for the works to the existing coastal defences, construction of the shore-connected breakwater, rock revetment and nearshore or offshore breakwaters to impact upon outfall pipes on the foreshore, or on subtidal cables / pipelines in the coastal waters at Millport.		

Table 3 – Possible Mitigation Measures

Potential Impacts	Potential Mitigation Measures
GENERAL	
General approach to identification and design of mitigation measures for all impacts for all options.	<p>The approach taken to project appraisal and design development for this scheme includes incorporating mitigation into the design of the scheme (<i>'(environmental) mitigation by design'</i>) is an industry best practice approach. Environmental decisions are key to the development of the scheme.</p> <p>The work to date and any future impact assessment and development of mitigation measures for the project will feed into the preparation of the ES for the preferred option. The ES will confirm the requirement for the implementation of mitigation measures as part of the proposed scheme.</p> <p>Many of the identified mitigation measures will be implemented through appropriate design and the construction methodology. Relevant guidance published by SEPA and CIRIA will be used to inform the design of mitigation measures, in addition to consultation with key stakeholders. A Construction Environmental Management Plan (CEMP) will be prepared, which will form part of the contract documents for the scheme, setting out best practice mitigation measures for the construction phase and other relevant construction guidance which will be followed. A Site Waste Management Plan will also be prepared.</p> <p>An Operations and Maintenance Plan will be prepared, including mitigation measures relevant to scheme operation.</p>
Coastal Processes	
Potential temporary increase in suspended sediment concentrations due to construction activities	To be addressed via CEMP and planning for disposal of dredged sediments. Dredging methodology to be informed by environmental sampling works to be undertaken following identification of the preferred opinion.
Potential changes to local waves and bedload sediment transport, tidal currents and flushing/exchange of water in the Bay due to presence of the structures	Impacts minimised through best practice design of rock armour structures, which have less impact on coastal processes than a 'solid' structure.
Marine mammals and basking shark	
Disturbance to seal haul outs from increased human activity during construction	<p>Consultation with SNH following identification of the preferred option to agree any further monitoring and/or mitigation.</p> <p>CEMP to ensure correct procedures are adhered to in order to minimise the risk of a pollution incident. To include appropriate timing of offshore works to minimise impacts on marine mammals.</p>

Potential Impacts	Potential Mitigation Measures
	The selection of Option 1 would represent a mitigation measure from a marine mammal perspective. Whilst there is expected to be less risk of impacts on marine mammals with Option 1, mitigation measures would still need to be incorporated into the CEMP if this option was to be taken forward.
Benthic Ecology	
Physical disturbance of intertidal habitats during and following construction	Scheme design to minimise the benthic footprint of the elements located in intertidal and subtidal areas. Opportunities will be sought to enhance the design of the offshore elements of the proposed scheme (either option 1, 2 or 3) for the benefit of the local benthic ecology.
Tourism and Recreation	
Disturbance to tourism and recreational users during construction	<p>Further consultation to be undertaken on preferred option with the aim of minimising impacts and identifying mitigation measures, which might relate to: timing of works, traffic, noise and vibration, air quality and landscape and visual impact. Further work is required to assess these issues and impacts when the preferred option is identified.</p> <p>Appropriate scheduling of construction works by the contractor to ensure large and noisy operations take place outside of the main summer holiday period. Adherence to pre-agreed working hours.</p> <p>CEMP and Construction Traffic Management Plan (CTMP) to be prepared.</p> <p>Mitigation measures which could be adopted to minimise disruption to navigation practices during construction include updating the aids to navigation and minimising the construction programme and working area as far as practicable.</p>
Disturbance to tourism and recreational users following construction	<p>Future plans for harbour area (Millport Pier and wider Millport Bay area) to be discussed with harbour users working group and taken forward as separate project(s).</p> <p>Consideration will be given during the design stage to incorporate additional moorings and/or large vessel berths into the breakwater design, if Option 1 is selected as the preferred solution.</p>
Traffic and transport link disruption during construction	<p>Further assessment to be undertaken for preferred option to identify specific mitigation measures.</p> <p>Traffic and Transport Management Plan (TTMP) to be prepared.</p> <p>Construction Contract Documents to require contractor to maximise use of sea transport</p>
Temporary visual impact of construction works	<p>Construction Contract Documents and CEMP to require contractor to take a best practice approach to site management to minimise visual impact.</p> <p>Agreement of most appropriate locations for construction compound and storage of materials, including visual impact assessment and community consultation.</p>
Commercial Fisheries	
Impact on landing facilities following construction	<p>Specific mitigation measures to be identified for the preferred option through consultation with local fisheries organisations.</p> <p>CEMP to be prepared and adhered to by contractor with correct procedures followed to minimise the risk of a pollution incident.</p>
Navigation	

Potential Impacts	Potential Mitigation Measures
Impacts on local mooring following construction	<p>Navigation risk assessment to be prepared for preferred option.</p> <p>Ongoing consultation with organisations with an interest in navigation.</p> <p>Temporary aids to navigation may be required during construction.</p>
Changing navigation routes	<p>Navigation aids to be included in design for permanent works.</p> <p>Ongoing consultation with organisations with an interest in navigation.</p>
Archaeology and Cultural Heritage	
Direct impacts on known and unknown archaeological resources (offshore)	<p>ES to consider requirements for monitoring during construction.</p> <p>The methodology for archaeological mitigation will be agreed in consultation with the archaeological adviser to North Ayrshire Council and Historic Scotland. This is currently expected to comprise an archaeological Written Scheme of Investigation (WSI). The WSI will include provision for a protocol for archaeological discoveries in the event that any unexpected archaeological material is identified during the construction works.</p> <p>Ongoing consultation with North Ayrshire Council and community design workshop to be undertaken to ensure the materials used during the construction phase meet with approval so that the appearance of the works reflects the historical character of the area.</p>
Seascape, Landscape and Visual Impact (SLVIA)	
<p>Construction works (onshore, foreshore and in Millport Bay)</p> <p>Works after completion (onshore, foreshore and in Millport Bay)</p>	<p>Landscape design related mitigation measures to be developed through consultation with the community, and incorporated into scheme design and CEMP.</p> <p>The design process will involve a combination of environmental design and engineering to provide an appropriate compromise between fulfilling the engineering requirements and achieving acceptable design in terms of landscape and visual issues. As a result, the design will evolve iteratively to ensure that significant landscape mitigation is already 'embedded' within the scheme, prior to the assessment of residual effects.</p> <p>The final design will evolve to meet, as far as practical, the following design objectives:</p> <ul style="list-style-type: none"> • develop 'an acceptable design' for this site, that responds to the local landscape character and provides an acceptable design solution in terms of scale, layout, and visual composition; • achieve a simple, balanced, rational, and coherent image that may be viewed as an acceptable or neutral component of the visual composition; • minimise seascape, landscape and townscape effects; • minimise visual effects on views from local residents and communities; • minimise landscape and visual effects from recreational areas/recreational routes and local footpath network; and • opportunity to enhance and soften engineering solutions through bespoke detailing and landscaping which considers the projects wider context. <p>Cumulatively (considering the multiple elements of the scheme and other existing medium to large scale developments) the development should aim to appear proportional to the underlying seascape, landscape and townscape character such that the proportion of undeveloped coastal areas, the associated landscape characteristics remain as the dominant key characteristic.</p> <p>The final design of the proposed scheme will be assessed against these objectives via the SLVIA / SCLVIA process and the results will be summarised in the Design & Access Statement as part of the documents submitted with the ES.</p>

Potential Impacts	Potential Mitigation Measures
	Ongoing consultation will be undertaken with North Ayrshire Council regarding the appearance of the proposed scheme in historic setting with the Millport Conservation Area.

DRAFT

5 Next Steps

5.1 Scheme Recommendation

In addition to this interim EA, the following actions are also being progressed to recommend the preferred option for the Millport Coastal Flood Protection Scheme:

1. Economic Appraisal Report, including the findings of the recent Sensitivity Assessment of Options and assessment of national and local amenity damages and benefits;
2. Consultation with The Scottish Government regarding availability of funding, and review of potential alternative funding sources that might enable replacement of the timber pier; and
3. Scheme Recommendation Report to be prepared to compare technical, health and safety, environmental and economic benefits and constraints of all potential options based on the information currently available.

Further consultation with the community will also be undertaken, informed by this interim EIA and the Scheme Recommendation Report. This consultation will include workshops to explore potential mitigation measures relating to the identified landscape and visual impacts, as well as access to and along the seafront.

5.2 Environmental Impact Assessment and Environmental Statement

Flood protection schemes have deemed planning permission under the Flood Risk Management (Scotland) Act 2009. Flood protection scheme operations that constitute development will, pursuant to section 57(2B) of the Town and Country Planning (Scotland) Act 1997, be deemed to have been granted planning permission under the Act. A request must be submitted to Scottish Ministers for deemed planning permission to be granted, and the Scottish Ministers may attach conditions to the deemed planning consent.

Guidance for local authorities taking forward a flood protection scheme advises that they may benefit from following the normal planning guidance to ensure issues like the aesthetics of the scheme are properly taken into consideration and thus avoiding subsequent valid objections.

The requirement for EIA of projects requiring planning permission is considered under the Town and Country Planning (EIA) (Scotland) Regulations 2011, which came into force in June 2011. The requirement for EIA comes from European Directive 2011/92/EU, however in April 2014 Directive 2014/52/EU, amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, was published in the European Union's Official Journal. The requirements of Directive 2014/52/EU have been formally implemented in Scotland in the form of a revised set of regulations entitled The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2017.

Under Article 3(2) of the Directive, transposed by Regulation 60, the EIA Regulations 2017, where an Environmental Statement (ES) is submitted or where a scoping opinion has been sought before 16 May 2017, the project can benefit from transitional provisions to continue under the provisions of the EIA Regulations 2011. As such, Millport Coastal Flood Protection Scheme will undertake an Environmental Impact Assessment and submit the findings within an Environmental Statement (ES) under the Town and Country Planning (EIA) (Scotland) Regulations 2011.

The ES will include:

- Project introduction, including a statement of need and a description of the environmental assessment process, including details on screening, scoping, consultation and potential impact assessment;
- Detailed description of the proposed management programme, including the alternative options considered, and the reasons for selecting the preferred option;
- Detailed description of the existing environment for those impacts taken forward to detailed assessment;
- Detailed description of the potential impacts and mitigation measures identified during the assessment process for each of the environmental issues under consideration. This part of the Report will cover both the construction and operational phases of the scheme. Any requirements for decommissioning will also be considered separately;
- Summary of findings, including a table showing the predicted potential impacts and the potential residual impacts remaining following mitigation;
- Proposals for monitoring, if required;
- A list of references of information and publications cited in the report;
- Appendices, containing relevant survey information and reports that may be produced during the undertaking of the assessment; and
- A non-technical summary.

6 References

1. OOBE (2018), Millport Coastal Flood Protection Scheme: Predicted Visual Effects from Viewpoint Locations.
2. Royal HaskoningDHV (2016), Millport Coastal Flood Protection Scheme, North Ayrshire: Geotechnical and Land Contamination Desk Study.
3. Royal HaskoningDHV (2017), Millport Coastal Flood Protection Scheme Environmental Scoping Report.
4. Royal HaskoningDHV (2017), Millport Coastal Flood Protection Scheme Community Questionnaires.
5. Royal HaskoningDHV (2017), Millport Coastal Flood Protection Scheme Wave Modelling Report. Draft Report to North Ayrshire Council, December 2017.
6. Royal HaskoningDHV (2017), Millport Coastal Flood Protection Scheme: Ground Investigation Report.
7. Royal HaskoningDHV (2017), Millport Coastal Flood Protection Scheme: Tourism and Recreation Baseline Assessment.
8. Royal HaskoningDHV (2018), Millport Coastal Flood Protection Scheme: Coastal processes Assessment of Potential Options.
9. Royal HaskoningDHV (2018), Millport Coastal Flood Protection Scheme: Phase 1 Habitat Survey Report.
10. Royal HaskoningDHV (2018), Millport Coastal Flood Protection Scheme: Intertidal Survey.
11. Royal HaskoningDHV (2018,) Millport Coastal Flood Protection Scheme: Marine Mammal and Basking Shark Assessment of Potential Options.
12. Royal HaskoningDHV (2018), Millport Coastal Flood Protection Scheme: Fish and Shellfish Resource Baseline.
13. Royal HaskoningDHV (2018), Millport Coastal Flood Protection Scheme: Benthic Surveys Technical Note
14. Royal HaskoningDHV (2018), Millport Coastal Flood Protection Scheme: Archaeology and Cultural Heritage Desk Based Appraisal.

Annex A

Consultation Responses

A1 Consultees (Scoping Report)

Below is a list of consultees, who were consulted on the Millport Coastal Flood Protection Scheme Scoping Report:

- North Ayrshire Council
- Marine Scotland
- Scottish Environmental Protection Agency (SEPA)
- Scottish natural Heritage (SNH)
- Joint Nature Conservation Committee (JNCC)
- The Crown Estate (TCE)
- Crown Estate Scotland
- UK Marine Management Organisation
- Historic Environment Scotland
- Marine Coastguard Agency (MCA)
- Northern Lighthouse Board (NLB)
- British Ports Association
- Caledonian MacBrayne
- Clyde Cruising
- Clyde Fishermen's Association
- Community of Arran Seabed Trust
- County Archaeologist
- County Ecologist
- Cumbrae Community Development Company
- Cumbrae Marine
- Field Studies Council
- Harbour Trusts for Millport/Largs
- Health and Safety Executive
- North Ayrshire Council Roads and Transportation Department
- Largs Community Council
- Ministry of Defence
- National Trust for Scotland
- Royal National Lifeboat Institute
- Royal Commissions on the Ancient and Historical Monuments
- Royal Yachting Association
- Royal Society for the Protection of Birds
- Scottish Canoe Association
- Scottish Fishermen's Federation
- Scottish Water
- Scottish Wildlife Trust
- Set Sail North Ayrshire
- Sports Scotland National Centre Cumbrae
- Transport Scotland
- Visit Scotland
- World Wildlife Fund (Scotland)
- Millport Marine Facilities Association
- Millport Harbour Users Group
- Peel Ports

A2 Consultation Responses to Scoping Report

Stakeholder	Date	Comment	Response
MMO	18/04/17	As works are within Scottish waters, the MMO would defer to Marine Scotland and will not have a response to give.	Noted
Cumbrae Marine	19/04/17	The scheme will be an eyesore (the onshore elements), will lead to traffic and ferry issues and that this will impact on the local community and tourism negatively.	Further consultation will be undertaken on the onshore scheme elements when the preferred scheme has been identified. Once more detail of the proposed traffic demand is known a more detailed transport scoping note will be prepared and submitted to the highway authority to confirm the scope of assessment. The assessment will form part of the final Environmental Statement (ES).
		Favour to move defences offshore to create large sheltered lagoon to increase tourism and recreation.	Noted
		The scheme will lead to damage of the local roads, disruption to traffic and ferry congestion.	If it is found that the construction phase traffic impact would have a significant adverse impact on the local road and ferry network, measures will be proposed to mitigate the impact.
		Do not agree with the wave modelling results and feels that they are have been exaggerated to avoid litigation in the future.	Wave modelling is based on offshore wave data from the UK Met Office. Further details of the wave modelling were provided in the March 2017 public consultation. The wave modelling results have been reviewed to confirm the design wave conditions for the scheme.
		Copied to Sharon Hagan (Millport Marine Facilities Association) & Graham Wallace (Millport Harbour Users Group) for comment.	Noted
Millport Harbour	19/04/17	Disagrees with report stating Millport Pier as being "unsafe to use" (3.1.2) and "derelict" (6.2) to name two examples I have spotted. These are	A response to this was sent on 09/05/2017, as follows: References to the condition of the Pier

Stakeholder	Date	Comment	Response
Users Group		misrepresentative and misleading descriptions. Millport Pier is alive and well despite these reports of its demise!	<p>With regard to your concerns about the comments on the scoping report about the pier being 'unsafe for use', this information was provided by North Ayrshire Council and relates to the timber section of the pier. The information was provided following surveys of the structure which identified that the timber section of the pier was in a poor condition and required extensive remediation. Due to concerns about the ongoing deterioration of the timber pier and the implications for safety, a decision was made by North Ayrshire Council to demolish the timber section of the pier. This proposal was put on hold until a flood prevention solution for Millport was agreed as at present the pier contributes to flood protection of the town. Consequently, we do not propose to amend the descriptions of the condition of the timber sections of the pier in the scoping report. We will however take your concerns on board and will revisit the terminology relating to the pier to ensure that it is clear in future documents.</p> <p><u>Options being considered:</u></p> <p>As you state, we are now considering cost, constructability and environmental implications for all three options (the pier breakwater and the two offshore breakwater options). Feedback on these three options as laid out in the scoping report will be used during the assessment process as the views of the local community and stakeholders are fundamental for ensuring that the most acceptable but financially affordable option is selected.</p>
RCAHMS	19/04/17	In October 2016, Historic Scotland and RCAHMS became Historic Environment Scotland. I have checked with colleagues and I am assured that HES have already received the documentation.	Noted

Stakeholder	Date	Comment	Response
JNCC	21/04/17	This development proposal is not located within the offshore area, does not have any potential offshore nature conservation issues and is not concerned with nature conservation at a UK level. JNCC therefore does not have any comments to add to this consultation.	Noted
Crown Estate Scotland	28/04/17	It would appear that the proposals have the potential to impact on a number of our customers and tenants and our Community Marine Officer, Colin Brown, and I would therefore welcome an opportunity to meet with you and / or the Council to discuss the proposals in further detail, and also to go through our consenting process with you. We would be happy to meet you in Edinburgh, at the Council's offices in Irvine or perhaps on site.	A meeting was held with Crown Estate Scotland, North Ayrshire Council and Royal HaskoningDHV. Feedback was received which is documented below.
Historic Environment Scotland	28/04/17	We note that the scoping report refers to previous consultation with HES. It is reported that we have confirmed that setting impacts on designated heritage assets may be scoped out. We would like to clarify that this only relates to our interests, as identified above, and would strongly recommend that a view is also sought from other consultees with cultural heritage interests. We note the alterations to the proposed scheme that have been made since we previously provided advice. We can confirm that we continue to have no specific requests for the scope of the Environmental Statement. As stated in our response of 6 June 2016, we consider it unlikely that there will be significant impacts on our historic environment interests.	Noted
Scottish Natural Heritage	05/05/17	The report correctly identifies the key areas of concern to this organisation and these issues have been adequately described. The proposed measures for baseline surveys and completing the assessment of the potential impacts on the natural heritage should lead to a fair assessment of the project.	Noted
Royal Yachting Association Scotland	11/05/17	Recreational boating should be scoped into the EIA within Tourism and Recreation. RYA Scotland will be happy to be involved with that process and paragraphs have added in pdf that should be helpful.	Recreational yachting is included in 'recreational users' which is scoped into the final EIA
		Clyde Marine Planning Partnership has commissioned a study of sea level rise in the Firth of Clyde which could help the case and will be published soon.	Noted, results from this study will be included in the ES

Stakeholder	Date	Comment	Response
		Policies are largely terrestrial. Please refer to the National Marine Plan which states the importance of integration of terrestrial and marine planning regimes. CMPP is currently developing the Clyde Regional Marine Plan.	Marine policies have also been considered in environmental assessments
		National Tidal and Sea Level Facility website contains data from Millport tide gauge on predicted and actual tidal extremes.	Noted
		The effect of the three options on reflection, diffraction and refraction of waves and consequent effect on existing moorings should be considered. This includes effects on moored vessels and also how crew members can leave and return to their boat.	The effects on reflection, diffraction and refractions were assessed in the wave modelling report, the results of which will be presented in the ES
		The location of the existing moorings should be shown on a map.	Noted, this will be included in the ES
		The bullets in the recreation section should include Sports Scotland National Watersport Centre, shown in Figure 6.1. Most of the users of this facility come from Largs via ferry.	Noted, this will be updated for the ES
		Clyde Cruising Club Sailing Directions and Anchorages volume on the Firth of Clyde gives directions for sailing to, anchoring and mooring at Millport and the rest of Greater Cumbrae.	Noted
		Winds from south or southwest can make anchorage at Millport untenable.	Noted
		Welcome Anchorages is updated annually and covers Millport.	Noted
		Consultation on additional visitor moorings was undertaken in 2015 and raised some interesting views from local community	Feedback from consultation events has informed environmental assessment and the design process.
		Works will impact on moorings during construction and operation.	The impacts on mooring during, construction operation and decommissioning of the flood defence option will be assessed in the ES.
		Will a formal navigation impact assessment be prepared?	Further targeted consultation will be undertaken re. navigation issues. A navigational risk assessment

Stakeholder	Date	Comment	Response
			will be undertaken for the preferred option, the results of which will be presented and appended to the ES.
		Key mitigation includes publicising a programme of works, informing Clyde Cruising Club so sailing directions can be undated and signs posted at harbours	All procedures for notifying mariners will be undertaken accordingly with sufficient notice given prior to the commencement of construction.
		Recommend consultation with Clyde Cruising Club; Clyde Moorings Association; Clyde Marine Planning Partnership; SportScotland; Clyde Yacht Clubs Association.	Clyde Moorings Committee was consulted on the Scoping Report via Clydeport; no response received. Clydeport have since been asked specific questions on potential navigation impacts. Future consultation to include these organisations individually.
Northern Lighthouse Board (NLB)	08/05/17	NLB has reviewed the Environmental Impact Assessment and note that each potential development will impact on marine navigation. We will reply formally in response to the Marine Licence application, once the preferred option is known.	Noted
SEPA	19/05/18	The appendix sets out our scoping information requirements. There may be opportunities to scope out some of the issues however evidence must be provided in the submission to support why an issue is not relevant for this site in order to avoid delay and potential objection by SEPA. Please note that our advice at this stage is based on emerging proposals and we cannot rule out potential further information requests as the project develops. If there is a delay between scoping and submission of the application please refer to our website for our latest information requirements as they are regularly updated; current best practice must be followed.	Noted, all current best practice will be followed when writing the ES and conducting any assessments.
		Site plans and cross sections required showing precise location, design and type of materials to be used (revetment, sea walls, gabion baskets). Access routes and working areas to be shown. All maps to be based on 1:10 000 scale or greater OS base mapping with scale provided.	Noted. These will be included in the ES.
		Appraisal process to be included with justification for preferred option.	This will be included in the ES.

Stakeholder	Date	Comment	Response
		Feasibility of soft engineering techniques should be included	Beach nourishment was considered as part of the long-list of strategic solutions. To be included in discussion of appraisal process in the ES.
		Coastal defences should be appropriate in scale & type for the area.	Noted.
		Supportive of scheme in principle based on FRA (SEPA not consulted on this) and unlikely to object on flooding grounds to any application unless the development differs from that already proposed.	Noted. FRA has been provided to SEPA.
		Engineering works proposed are unlikely to require CAR consent based on current design.	Noted
		Comply with PPG Notes during construction.	Noted
		Do not agree that disturbed sediments are unlikely to be an issue as there could be a risk if foreshore works and/or dredging are done during the bathing season (summer months). If works are to be undertaken during the bathing waters season the ES should address this.	Noted. This issue will be addressed in the ES. Further consultation undertaken with Marine Scotland re. potential dredging requirements. Potential impacts on marine water quality considered by Coastal Processes assessment. Assessment of impacts on Marine Water Quality to be undertaken for preferred option.
		Welcome consideration of impacts of existing infrastructure on the environment and expect that the ES will include information to confirm there will be no disruption to the sewerage system during the bathing water season.	Noted. This issue will be addressed in the ES.
		Refer to SEPA's guidance on marine consultations	Noted, guidance will be used to inform environmental assessments, public consultation and the ES.
		Assessment of possible impacts of fish and shellfish at the ICES rectangle scale could be refined given the likelihood of more local information from UMBS Millport e.g. Kames Bay used as a nursery for plaice.	Noted, the fish ecology assessment provides a refined approach. This will inform the final EIA
		Area between the shore at Glasgow Street and The Eileans can dry out at extreme low spring tides so need to consider whether this level of tidal movement should be considered with regards to sediment transport issues.	Noted, this will be considered in the final EIA.

Stakeholder	Date	Comment	Response
		Invasive species surveys should not be limited to <i>Sargassum miticum</i> as there are issues with <i>Styela sea squirt</i> and a non-native carpet sea squirt species <i>Didemnum vexillum</i> at Largs Yacht Haven.	Both intertidal and benthic surveys were undertaken, the results of which will be presented in the ES.
		Measures should be included to prevent the spread of marine non-native invasive species including action or mitigation (see Section 8 of the River Basin Management Plan for the Scottish River Basin District 2015 - 2017 and the UK Marine Pathway project)	Noted, these plans and best practice guidance will be accounted for when considering mitigation in the ES
		<p>Insufficient information has been provided to scope groundwater/ hydrogeology out of the project. The information in Section 4 does not consider g/w quality and quantity or effects on base flow and groundwater resources. There is mention with in Appendix 4.1 of report of g/w flow and quality but this is limited to hydrocarbon pollution and geotechnical issues. Section 4.4 indicates that Section 5.6 considers groundwater but this is not so.</p> <p>No mention is made of groundwater being a receptor (tables 4.7 and 4.8) and the risk to groundwater, more specifically in the sand and gravel raised beach deposits skirting the south of the island should be included.</p> <p>With respect to groundwater geotechnical risks SEPA has no comment but would advise that any dewatering may require CAR authorisation.</p> <p>Recommend that a section on groundwater is included in ES or that more information is provided to address the omission of these issues in the scoping report to justify why g/w is not being considered.</p>	Noted, desk based assessment of potential groundwater impacts to be undertaken.
		No soil or groundwater sampling was undertaken as part of the ground investigations undertaken in 2014 although a petrol odour was reported. We note that land sided ground investigations (including sampling) will be undertaken and welcome the proposal to consult SEPA and the LA in relation to sample locations and the analysis suite to be used.	Noted.
		No mention of the scale of the ground investigations. Recommend that care should be taken to ensure the investigations are fit for purpose.	Noted.

Stakeholder	Date	Comment	Response
		All waste generated, including dredging spoil which is to be disposed of off-site should be disposed of in accordance with to a suitably licences facility	Noted, a Site Waste Management Plan will be produced and consulted on prior to commencement of construction.
		There is potential for dredged materials from harbour areas and areas where boats moor to contain hydrocarbon contamination. A risk assessment to allow materials to be reused should be undertaken. Should disposal on land be considered, this would be a landfill activity and would require consideration under PPC Regs 2012 and Landfill Regs 2003.	Noted. Additional offshore geotechnical and environmental investigations are to be undertaken to inform the approach to disposal of dredged materials.
		Applicant and contractors should be fully aware of transport of waste, registered carriers requirements and duty of care and waste transfer notes.	Noted, the Site Waste Management Plan will be shared with all contractors involved in the project.
		Consult with EHO re air quality, noise and nuisance issues who can provide information about other developments in the area.	Noted, the EHO will be consulted to inform the EIA.
		Layout and general principles for decommissioning must demonstrate waste minimisation and compliance with waste regulatory position.	Noted
The Crown Estate Scotland	05/06/17	Foreshore is non-Crown Estate land (delineated in green in the attached drawings which are for information only and are not formal designated areas).	Noted
		Two small vessel anchorages have been established in the bay by the Clyde Mooring Committee (CMC), see drawing provided;	Noted
		Cumbrae Yacht Slip has a licence to lay moorings on the seabed within the area delineated and coloured pink (see drawing provided)	Noted
		North Ayrshire Council has been granted mooring licences for visitor mooring (licence refs XX34/886 and XX34/319);	Noted
		Mooring licences have also been granted to DRG Offshore Engineering Services Ltd. (XX34/748) and the Field Studies Council (XX34/18) for mooring located adjacent the pier.	Noted
		Option 1 impacts on Cumbrae Yacht slip as a new leading line would be required and a number of their moorings would need to be relocated in	Noted, this is addressed in the interim EIA

Stakeholder	Date	Comment	Response
		agreement with operator and the licence varied. The council's existing visitor moorings (XX34/319) a popular local provision would have to be removed or relocated and the associated mooring licence would need to be varied. This is shown on a drawing attached to the response.	
		Option 2 would result in the loss of at least one visitor mooring at the Eileans. West visitor moorings would be at risk of conflicting with west channel users. The western small vessel anchorage would be impacted and CMC would expect an alternative anchoring point. However the proposal will provide shelter in the bay and would likely result in increased use of the moorings.	Noted, this is addressed in the interim EIA
		Option 3 would result in Western visitor moorings probably needing to be relocated, perhaps utilising the former channel. Western small vessel anchorage would need to be adjusted, probably extending further eastwards (i.e. utilising the shelter provided by the breakwater). Again, the proposal would result in improved shelter within the bay and likely result in higher visitor mooring occupancy.	Noted, this is addressed in the interim EIA
		Under the Marine (Scotland) Act 2010, Peelports – Clydeport (as Harbour Authority) is responsible for the granting of Navigation Consents in relation to all moorings within their area of jurisdiction. This responsibility is discharged by Clydeport via the CMC, which is made up of Clydeport, Crown Estate Scotland, RYA, Clyde Yacht Clubs Association (CYCA), MoD/Queens Harbour Master, British Marine Federation and the Clyde Fishermen's Association.	Noted. Peel Ports/Clydeport/ CMC were consulted on the Scoping Report although no response was received. Clydeport have since been contacted with targeted questions relating to potential impacts on navigation and moorings.
		The CMC has established a number of small vessel anchorages within Clydeport's area of jurisdiction, and the presumption is for these areas to be kept free of moorings. The CMC would therefore have an interest should any moorings or other structures encroach into these areas.	Clyde Moorings Committee (CMC) was consulted on the Scoping Report via Clydeport. No response was received. Clydeport have since been contacted with targeted questions relating to potential impacts on navigation and moorings.

REPORT

Millport Coastal Flood Protection Scheme: Environmental Statement

Appendix 3.2 Consultation Reports

Client: North Ayrshire Council

Reference: PB4749-RHD-ZZ-XX-RP-Z-0003.2

Status: Final/F01

Date: 31 January 2020

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Document title: Millport Coastal Flood Protection Scheme: Environmental Statement

Document short title:

Reference: PB4749-RHD-ZZ-XX-RP-Z-0003.2
Status: F01/Final
Date: 31 January 2020
Project name: Millport Coastal Flood Protection Scheme
Project number: PB4749-RHD-ZZ-XX RP-Z-0003.1
Author(s): Kerrie Craig

Drafted by: Kerrie Craig

Checked by: Amy Savage

Date / initials: 13/11/2018

Approved by: Frank Fortune

Date / initials: 13/11/2018

Classification

Project related



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REPORT

Millport Coastal Flood Protection Scheme, Community Consultation Questionnaire

Summary of Results

Client: North Ayrshire Council

Reference: WATPB4749R010F0.1

Revision: 0.1/Final

Date: 16/02/2017

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Document title: Millport Coastal Flood Protection Scheme, Community Consultation Questionnaire

Document short title: Millport CFPS Questionnaire Results

Reference: WATPB4749R010F0.1

Revision: 0.1/Final

Date: 16/02/2017

Project name: Millport CFPS

Project number: PB4749

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Date / initials: 16th February 2017

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Classification

Project related



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1 Introduction

This report presents the findings of the Millport Coastal Flood Protection Scheme Community Consultation Questionnaire. Engagement and consultation with the people of Millport is an integral part of the scheme development process; empowering communities is a core policy of both North Ayrshire Council and the Scottish Government.

The report first outlines the methodology of the survey and analysis (Section 2), then provides a summary of survey results (Section 3), before going on to detail the survey results (Section 3). Only brief conclusions are provided in this report (Section 4) because the survey is part of an ongoing process of planning and design.

2 Methodology

The questionnaire was shared using two survey methods as follows:

1. Online using Survey Monkey, through a link on North Ayrshire Council's website; and
2. Printed survey distributed at several locations around Millport and in Largs.

Eighteen questions were asked ranging from identification through to satisfaction with the engagement process. To ensure anonymity identification results have been omitted from this report. Questions were as follows:

1. Name
2. Address
3. Telephone
4. Email
5. Are you willing for North Ayrshire Council to retain your contact details in order to contact you regarding this response and/or the flood protection scheme proposals? Contact details will not be used for any other purpose.
6. What is your particular interest in Millport seafront?
7. Do you agree that overtopping and flooding is a problem in Millport and that a flood protection scheme is needed?
8. To your knowledge, has your property been affected by flooding?
9. How often do you come to Millport seafront?
10. Why do you visit the sea front? Please comment:
11. What are the most important aspects of Millport and Cumbrae to you? (tick all that apply)
12. What are the main uses of the seafront area that should be considered in developing the scheme?
13. What do you think would improve Millport? Please comment:
14. Please provide your comments on the proposed flood protection scheme.
15. Was the consultation was adequately advertised?
16. Has enough information been provided to explain the proposals?
17. Have you had an adequate opportunity to obtain further information and express your views?
18. Do you have any comments on the consultation process?

During analysis the survey results have been compiled and grouped into relevant categories to show where there is agreement or variation. Where comments were requested these have been evaluated using a Word Cloud where possible. Otherwise a commentary of the main messages has been provided.

3 Survey results

3.1 Summary of findings

One hundred and sixteen people responded to the survey. The majority of these people were local residents (61%, Figure 1) and visited the seafront on a daily basis (81%, Figure 2).

Although 91% of people surveyed believe flooding is an issue, 81% of those surveyed hadn't been personally effected by flooding (**Error! Reference source not found.**).

Word clouds were created from the comments provided that show:

- People visit the seafront to walk (often with their dog), use the shops because they live in Millport, play on the beach (sometimes with their children), and enjoy the sea views (Figure 4);
- The most important aspects to respondents is the view (91%, Figure 5) then the beach (89%), the harbour (73%), and wildlife (68%). Shops, and cycling were ranked roughly equally around 60% (Figure 5). Twenty people (15%) provided additional comments (Figure 6) that showed they particularly valued:
 - Peace and tranquillity of the area;
 - Access for boats; and
 - Ability to walk along the seafront.
- Issues that should be considered during scheme development are (Figure 7) walking (80%), beach use (75%), and harbour moorings (64%). Twenty two people gave additional comments (Figure 8) that showed they were particularly concerned about :
 - Access for vessels – both small and up to the Waverley sized;
 - Marine wildlife; and
 - Preserving the view.
- 97 people responded with comments about how to improve Millport (Figure 9). This showed that people particularly want:
 - Better facilities, including public toilets;
 - Improvements to the pier to allow access by and protection of boats; and
 - Elements to improve visitor attraction.

The majority of people surveyed agree that protection against flooding is needed in the Old Town area but some question the need for improved protection to the harbour area and Newtown Beach.

There was a 78% response rate to question 14 asking for comments on aspects of the flood protection scheme. The bar chart in Figure 10 has been created by assessing whether a comment showed clear support, was ambivalent, or clearly disliked the idea.

These comments show strong support for an offshore breakwater solution but that people are undecided on the proposed extension to the pier. Many responses were caveated that development that improves access for the public and marine vessels to the pier and harbour area is preferred. Misinformation was apparent in some responses about the benefits of an offshore breakwater. Some people voiced concern about the strong and vocal support for an offshore breakwater by parts of the community.

There is reservation about the need for flood walls, wave return walls or rock revetments along Glasgow Street. Some people see the need for these in certain places – particularly at Cross House. But many are worried about the visual impact of these proposed scheme elements.

There was clear support for the need to protect the Old Town. But when considering sea walls in both Old Town and along Glasgow Street there is a strong desire to maintain the sea view. People want walls to be constructed so that benches are placed on the seaward side of the walls, and with the walls designed in a way reflect the visual character of the town.

The final three questions regarding North Ayrshire Council's work to engage the community have been grouped in to one bar chart (Figure 11). This shows that the majority of people are happy with the engagement process so far. However the amount of information and the opportunity for the community to engage with the council could be improved.

Thirty nine children were also asked for their opinion on the scheme. By and large the children's opinions agreed with those of the adults. Most believed that flood protection was needed but they could not remember being flooded. They were all local residents, visited the seafront on a daily basis, and many used the harbour. They were particularly vocal about wanting to keep using the pier during the summer time, a need to protect the beach, and a desire to improve cycling in the area.

3.2 Who responded to the survey?

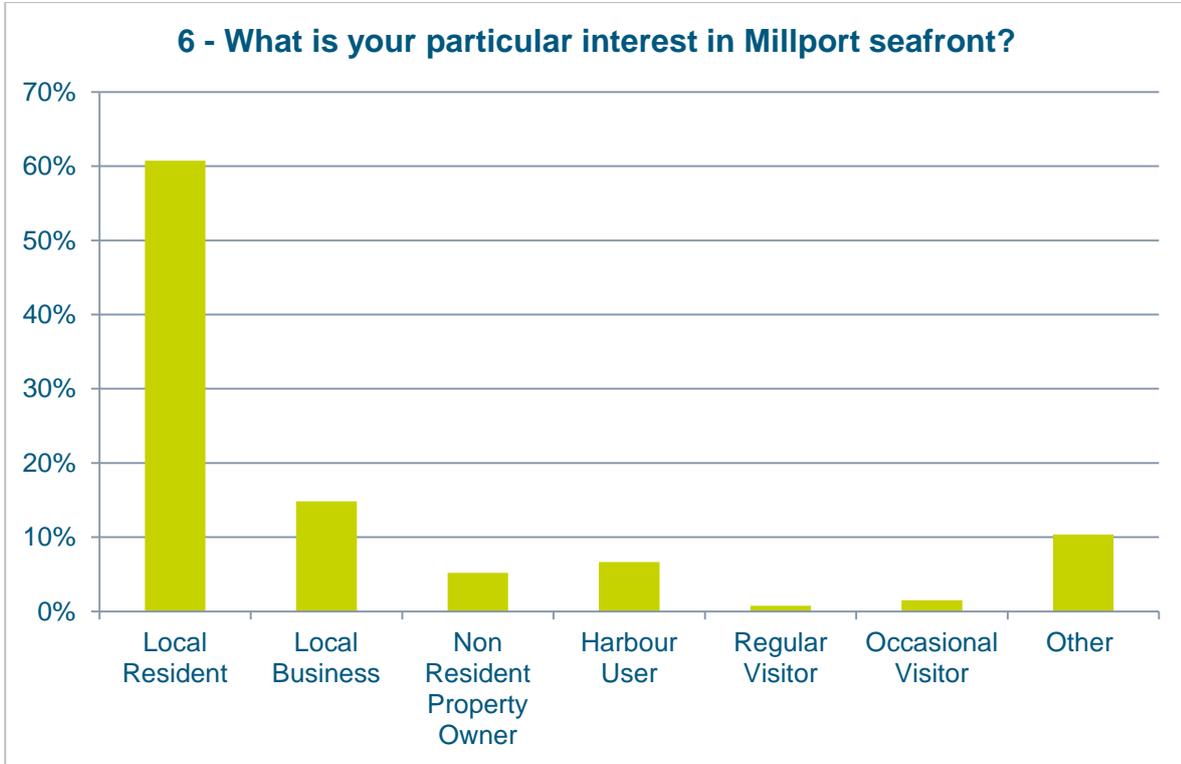


Figure 1: responses to Question 6

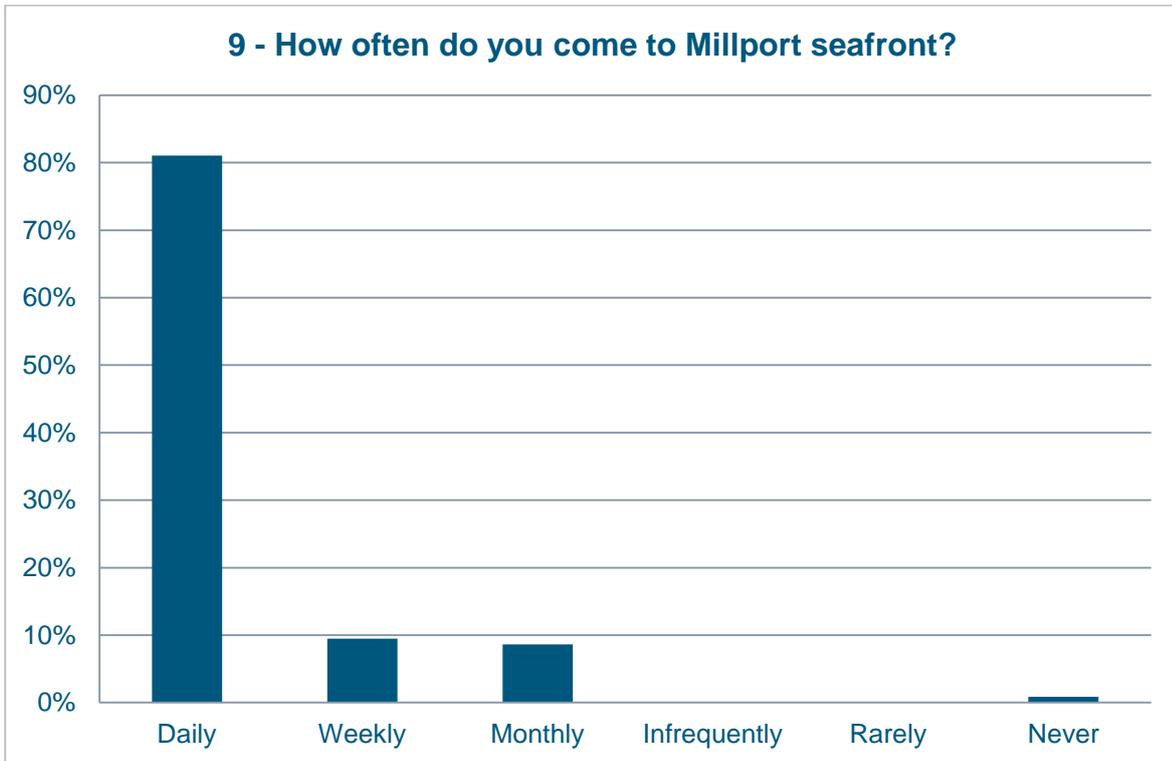


Figure 2: responses to Question 9

3.3 Is there a need for flood protection?

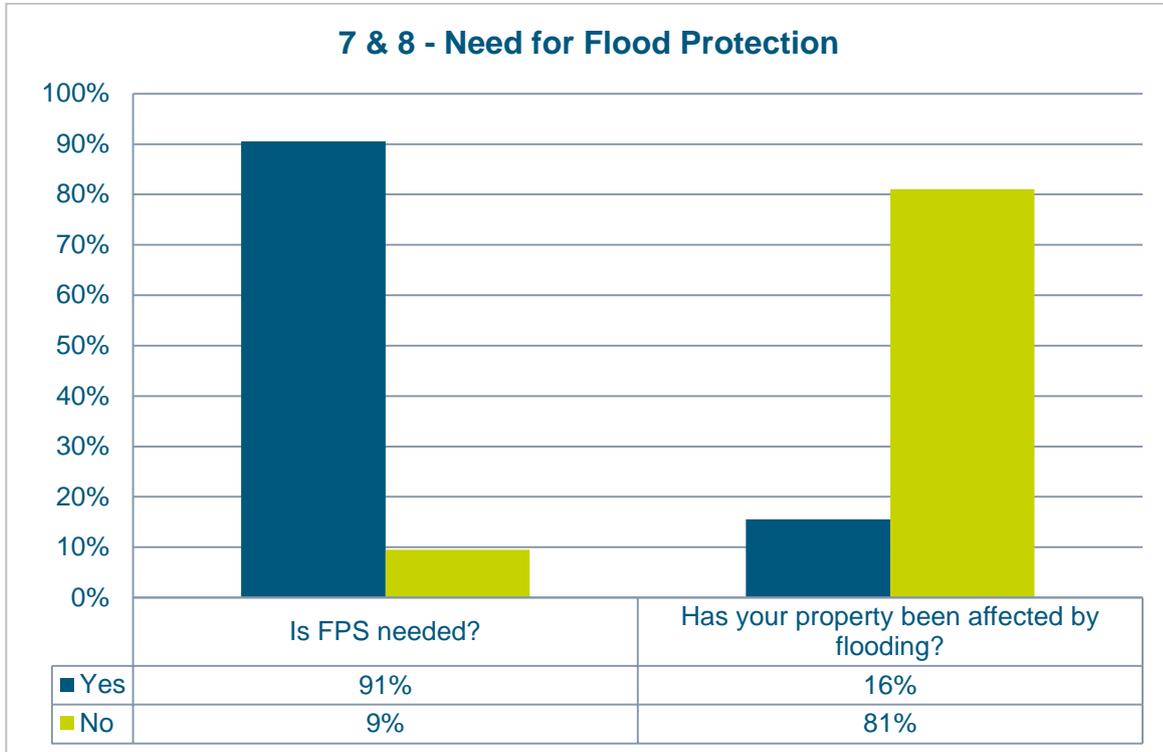


Figure 3: comparative results for questions 7 & 8

3.4 How do people use the seafront?

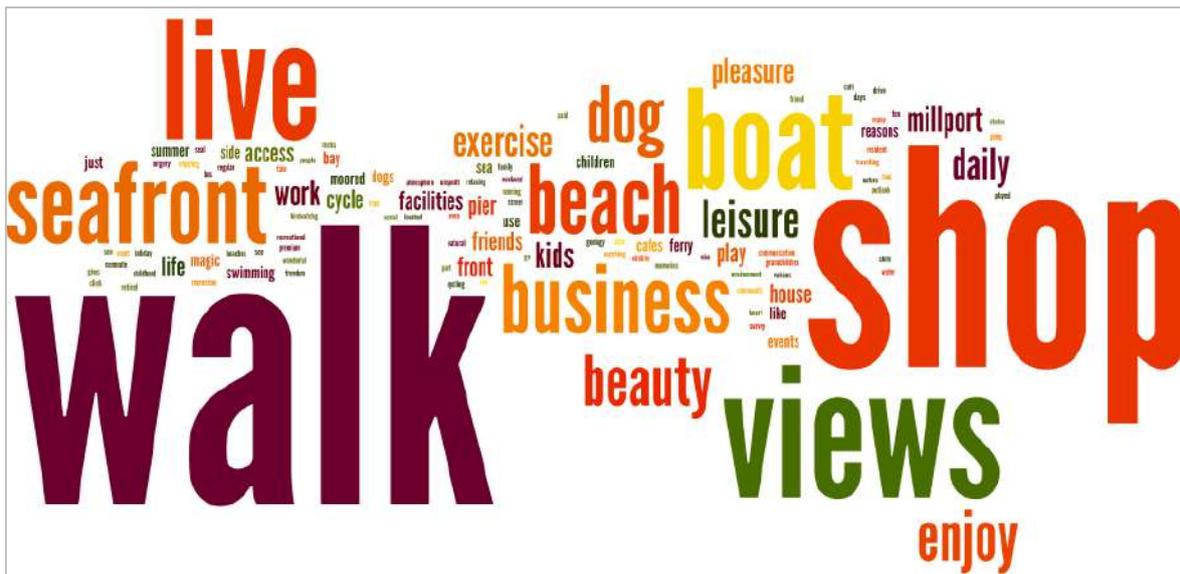


Figure 4: responses to Question 10: Why do you visit the seafront?

3.5 Important aspects of Millport

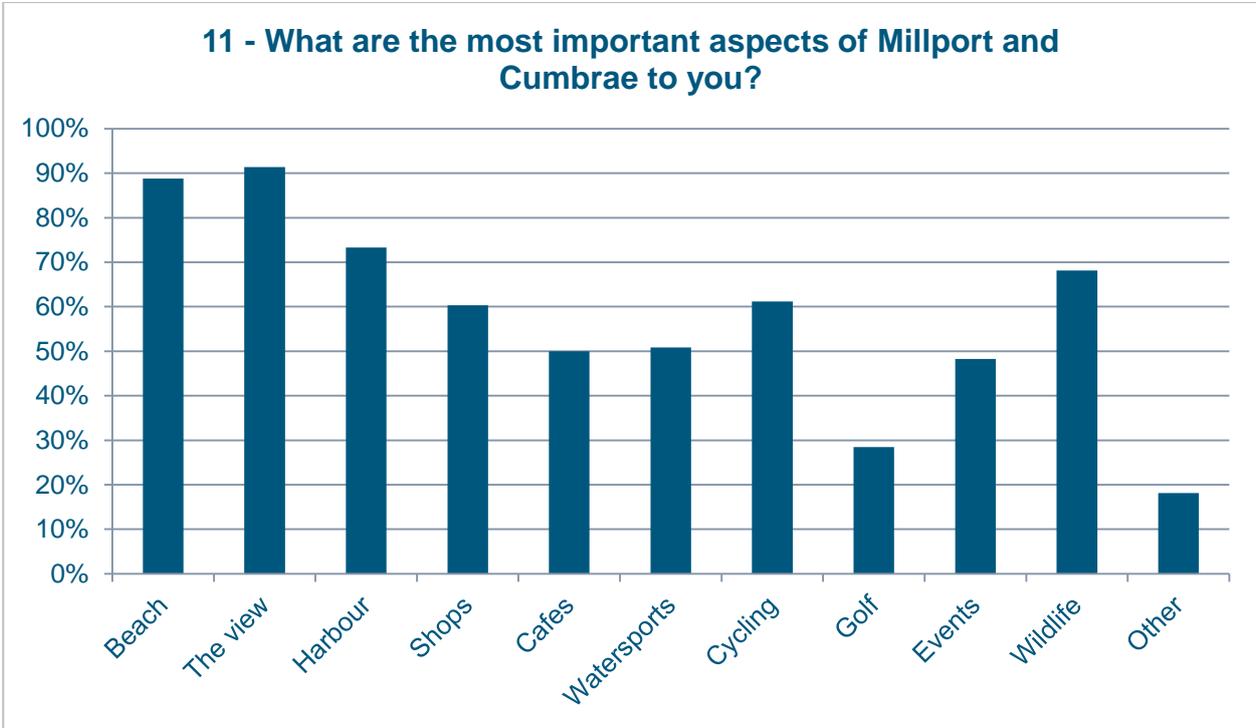


Figure 5: responses to Question 11



Figure 6: comments in response to Question 11: What are the most important aspects of Millport and Cumbrae to you?

3.7 What do people think of the different scheme options?

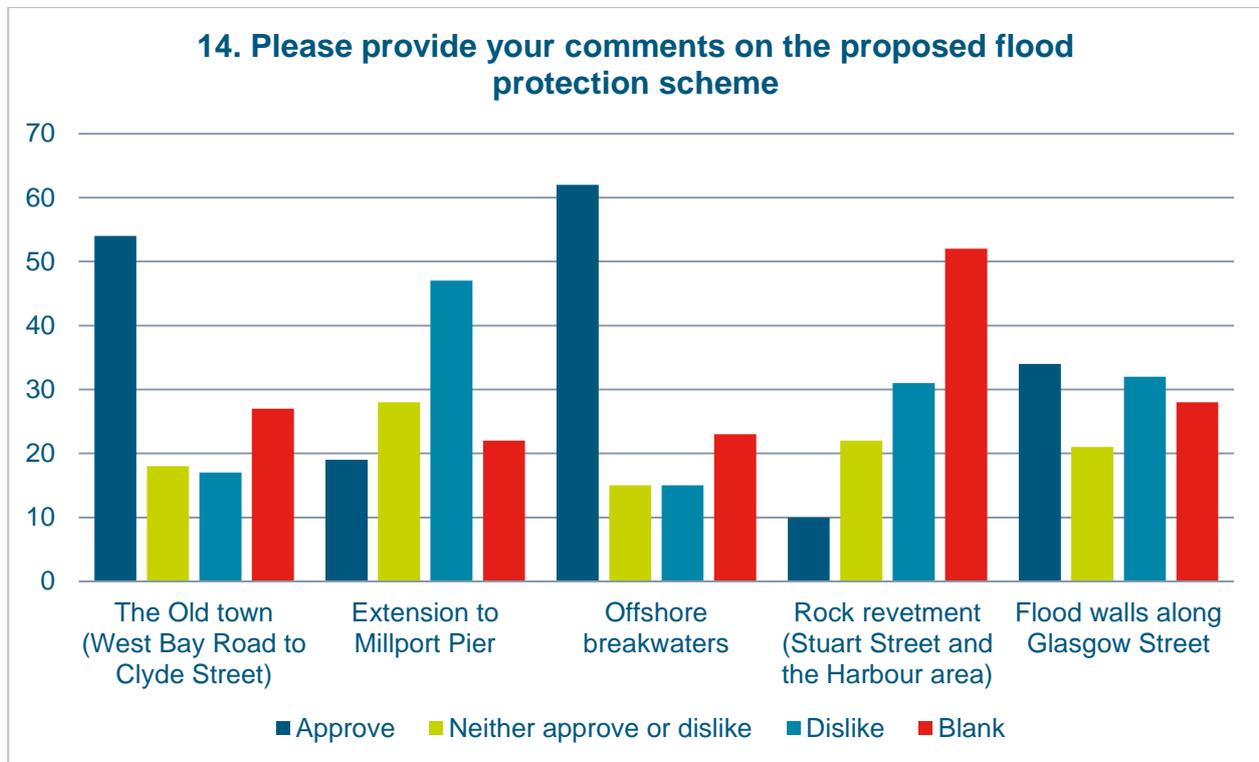


Figure 10: response to Question 14

A word cloud for such a complex question did not provide useful information. Therefore a summary of the comments has been provided below.

Although clear support for the offshore structure can be seen people were more undecided on the pier extension option than the graph suggests. Many of the responses were caveated that development that improves access for the public and marine vessels is preferred. Many people would approve of an extension to the pier IF it was constructed in a way that improved access and protection for boats; allowed the Waverley to dock; and maintained access for the public. But equally they would strongly disapprove of a pier extension solution that they believed would have negative impacts on access and would damage the economy of Millport. A significant number of comments referred to the pier's importance to the town for tourism and cultural heritage.

There is also concern that a pier extension would increase erosion of the adjacent beaches and would affect coastal geomorphology.

Information from sources other than North Ayrshire Council is apparent in some of the responses regarding the potential benefits of an offshore breakwater solution, the level of protection it would provide, and the improvements to marine facilities it might create. There is a risk that alternative information sources may be misleading some people.

Comments regarding walls and rock revetments were mixed. There was a strong appreciation that parts of the Old Town require protection. Again this was caveated that these measures should be constructed sympathetically and aim to preserve the views and landscape character of Millport.

People believed that areas to the east of Glasgow Street (around Cross House) were more prone to flooding and required protection. But that measures should be constructed to preserve the view and maintain seating in the area.

3.8 Have we done enough to engage the community?

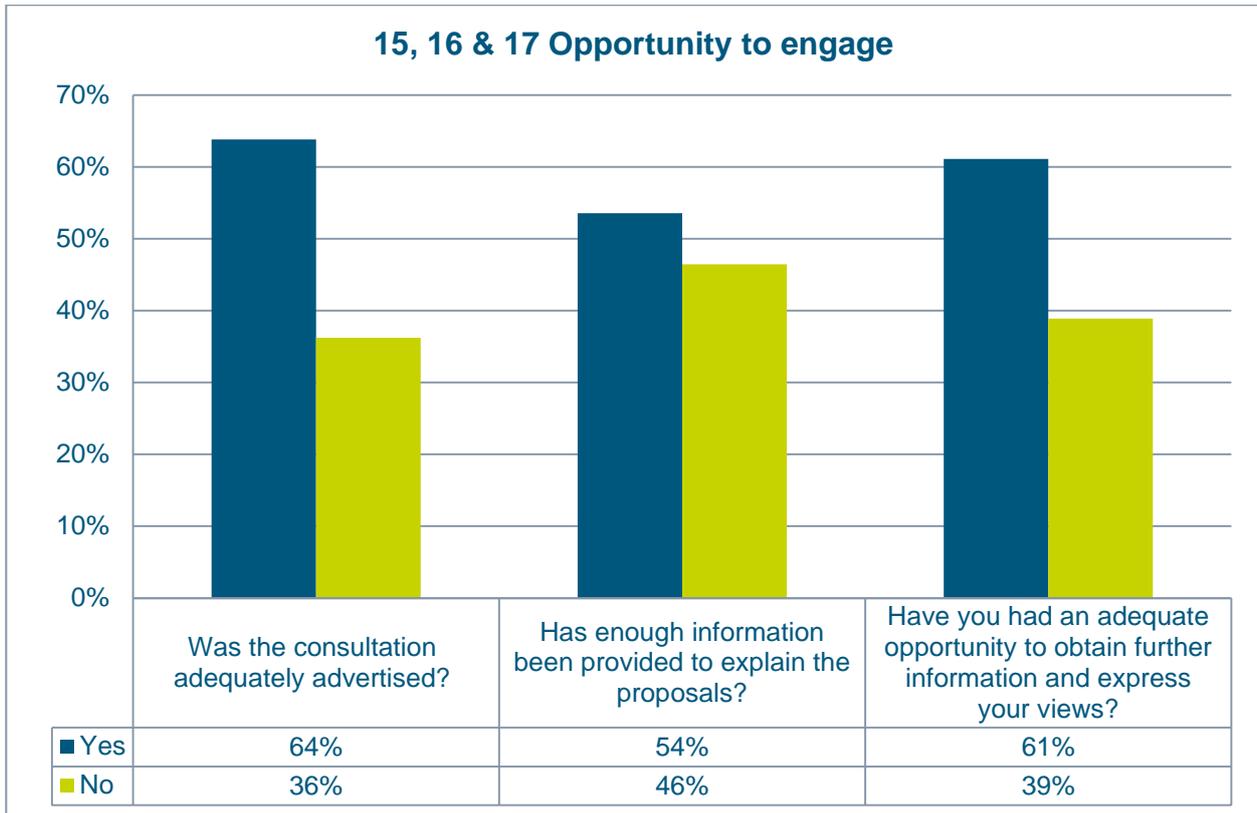


Figure 11: responses to Questions 15, 16, & 17

4 Children’s survey

Thirty nine children were asked for their opinion on the scheme. By and large the children’s opinions agreed with those of the adults. Most believed that flood protection was needed but they could not remember being flooded. They were all local residents, visited the seafront on a daily basis, and many used the harbour. They were particularly vocal about wanting to keep using the pier during the summer time, a need to protect the beach, and a desire to improve cycling in the area.

5 Conclusions

In conclusion there is support for the scheme in principle but opposition to the pier extension has swayed opinion. The comments of those surveyed suggest that if the flood risk management scheme was considered in parallel to improvements to tourist and marine facilities whilst protecting the core amenity of the area, the scheme would be very strongly supported.

REPORT

Second Millport Coastal Flood Protection Scheme, Community Consultation Questionnaire

Summary of Results

Client: North Ayrshire Council

Reference: WATPB4749R011D0.3

Status: 1.0/Final

Date: 14-Jun-17

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Reference: WATPB4749R011D0.3
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Project name: Millport FPS
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Date / initials: DC 13/06/2017

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Date / initials: AS 14/06/2017

Classification

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1 Introduction

This report presents the findings of the second Millport Coastal Flood Protection Scheme (FPS) Community Consultation Questionnaire. Empowering communities is a core policy of both North Ayrshire Council and the Scottish Government. Engagement and consultation with the people of Millport is an essential part of the scheme development process.

The aim of this questionnaire was to collect the opinions of the community on the different options and elements of the proposed Millport Coastal FPS. The associated questionnaire relating to Marine Tourism will be reported separately by the Council's Tourism and Coastal Economy team.

This report first provides details of the community consultation undertaken to date (Section 2). Section 3 outlines the methodology of the survey and analysis and summarises the scheme options, before going on to set out the survey results (Section 4). Only brief conclusions are provided in this report (Section 5) because the survey is part of an ongoing process of planning and design.

2 Summary of consultation

Community consultation undertaken to date for the Millport Coastal FPS has taken a variety of formats. Initial information about the plans for development of a coastal flood protection scheme was provided via a newsletter. Feedback on this newsletter led to development of a Frequently Asked Questions document (available on the NAC website), a further newsletter and a meeting with community representatives with a particular interest in the harbour area.

Community engagement workshops were held from 29th November to 1st December 2016, with 245 visits recorded. Workshops were also held with 39 students from local schools. The consultation questionnaire issued alongside the workshops received 155 responses plus 39 responses from students. This first questionnaire focussed on how the seafront is used and the important aspects to be considered in development of the scheme. The exhibition materials from these workshops and the report on the findings of the first questionnaire is available on the NAC website.

A third newsletter was issued to all Millport addresses in February 2017 to provide an update on work that had been undertaken since the winter 2016 workshops to address questions raised. The newsletter also provided an introduction to the ongoing work by the Council's Tourism and Coastal Economy team to develop the Ayrshire Growth Deal for Marine Tourism and the associated potential for development of Millport as a key tourism destination on the Firth of Clyde.

The third newsletter included an invitation to a second community engagement event, to be held jointly with the Council's Tourism and Coastal Economy team on 21st and 22nd March 2017. The aim of this exhibition and Design Charrette was to provide feedback on the scheme development since the winter 2016 workshops, and to explore the community's wider ambitions for the town (led by the Tourism and Coastal Economy team).

The March 2017 event was publicised in the local newspaper, on local radio and on the NAC website, as well as in the February newsletter. Between 150 and 200 visits were made to the consultation workshops. The exhibition materials from the March 2017 event are available on the North Ayrshire Council website.

Questionnaires were developed for both the Coastal Flood Protection Scheme and the Marine Tourism proposals and were available at the workshops. The questionnaires were also posted to all Millport addresses, and an online version of the questionnaire could be accessed from the NAC website.

Consultation with statutory stakeholders and other organisations with a potential interest in the Millport CFPS is ongoing, following the statutory processes required for approval of a flood protection scheme. A request for EIA Screening Opinion has been issued to Marine Scotland and North Ayrshire Council Planning. An Environmental Scoping Report has been completed and issued to stakeholder organisations. Comments on this report are currently being collated to inform subsequent environmental assessment work.

3 Methodology

As for the previous consultation questionnaire for the Millport Coastal FPS, two survey methods were used as follows:

1. Online using Survey Monkey, through a link on North Ayrshire Council's website; and
2. Printed questionnaire provided during the consultation workshops and issued by post to all Millport addresses.

Ten questions were asked ranging from identification through to satisfaction with the engagement process. To ensure anonymity identification results have been omitted from this report. Questions were as follows:

1. Name
2. Address
3. Telephone
4. Email
5. Are you willing for North Ayrshire Council to retain your contact details in order to contact you regarding this response and/or the flood protection scheme proposals? Contact details will not be used for any other purpose.
6. What is your particular interest in Millport seafront?
7. Was the consultation adequately advertised?
8. Has enough information been provided to explain the proposals?
9. Have you had an adequate opportunity to obtain further information and express your views?
10. Do you have any comments on the consultation process?

Following the initial identification questions eight options were presented. For each option the following two questions were asked:

- Please indicate whether you approve of these proposals or not:
 - Completely disapprove;
 - Partially disapprove;
 - Neither approve nor disapprove;
 - Partially approve; or
 - Completely approve.

This question was intended to gauge opinion on which element of the scheme the public particularly approved or disapproved off. The following question was intended to identify "why" in a manner that could be used for comparison.

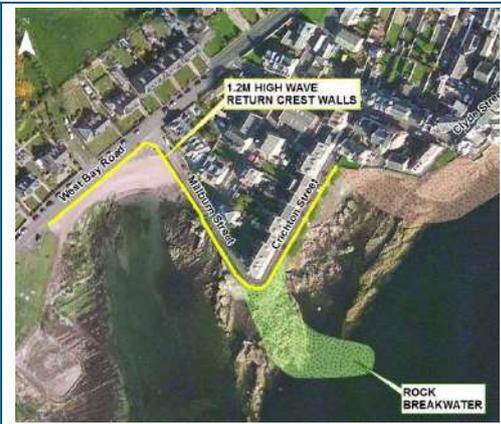
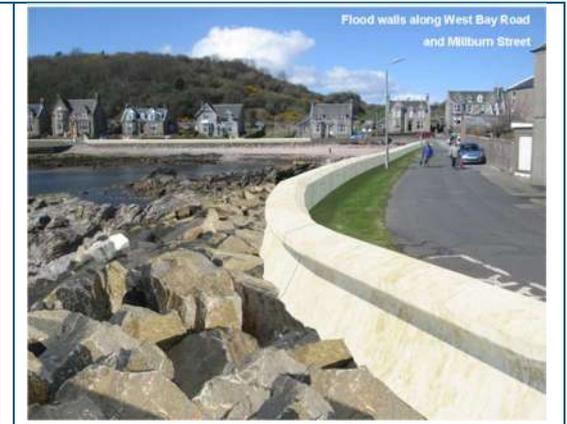
- Please indicate your main concerns about this proposal (pick as many as you like).
 - It will negatively affect the view;
 - It will not look good;
 - It will reduce access to the seafront;
 - It will have a negative impact on tourism; or
 - It is not needed.

In the last section, participants were asked to provide any comments on specific elements of the scheme.

3.1 Flood Protection Scheme Options

The elements and options for the scheme were presented as follows.

3.1.1 West Bay Road to Millburn Street

<p>Proposed solution A 1.2m (3ft 11in) high concrete wave return crest wall and a shore-connected rock armour breakwater extending south east from Crichton Street.</p>		
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3.1.2 Crichton Street

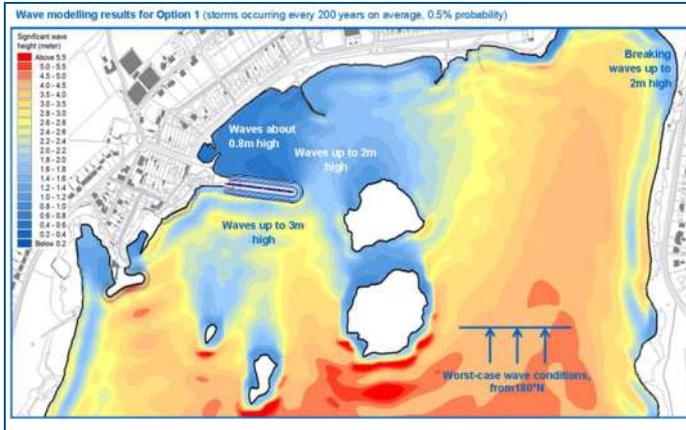
	
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3.1.3 Clyde Street

	<p>Proposed solution A rock revetment is proposed, which would be built over the natural rock outcrops. Rocks that look similar to the natural rocks on the beach would be used. The crest level of the boundary walls to properties would not be raised.</p>
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3.1.4 Stuart Street Options

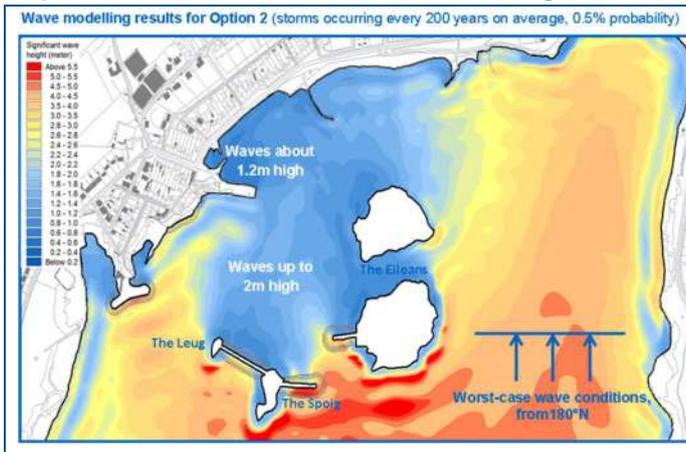
Option 1 – Millport Pier Extension



Proposed solution

- 150m rock armour extension to Millport Pier
- Estimated cost: £4,000,000

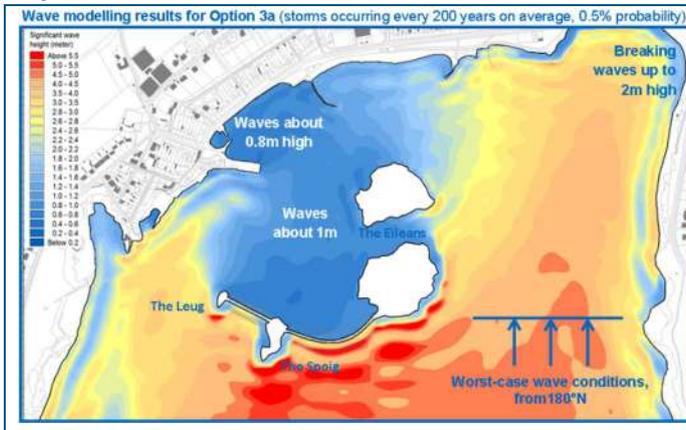
Option 2 – Offshore breakwater with navigation channel



Proposed solution

- Breakwaters between the Leug, the Spoig and the Eileans
- Navigation channel between the breakwaters
- Replacement of Stuart Street crest wall and drainage improvements
- Estimated cost: £11,589,000

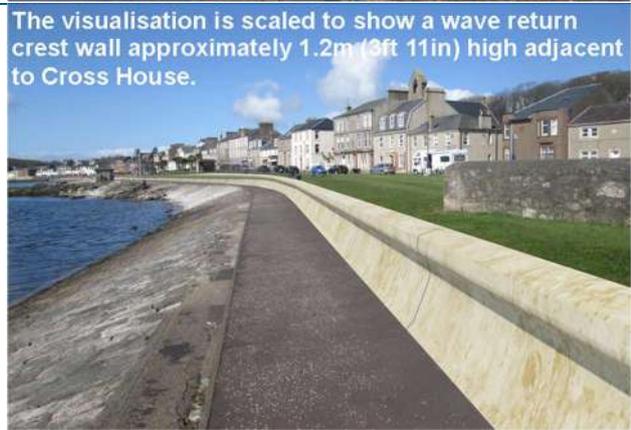
Option 3 – Continuous offshore breakwater



Proposed solution

- Continuous breakwater between the Leug, the Spoig and the southern Eilean.
- Estimated cost: £12,639,000

3.1.5 Glasgow Street and Cross House

 <p>Flood Wall along the landward side of the promenade</p>	<p>Proposed solution</p> <p>A wave return wall is required to the rear of the promenade and seaward of Cross House. The height of the wall along Glasgow Street will be either 0.8m or 1m depending on which offshore option is chosen. The height of the wall at Cross House will be 1.2m.</p>
<p>The visualisation is scaled to show a wave return crest wall approximately 1.2m (3ft 11in) high adjacent to Cross House.</p> 	

3.1.6 Kames Bay and Marine Parade

 <p>KAMES BAY 400M CREST WALL</p> <p>MARINE PARADE 230M CREST WALL</p> <p>MARINE PARADE 400M EMBANKMENT OR CREST WALL</p> <p>0 200 Metres</p> <p><small>Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USGS, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and</small></p>	<p>Proposed solution</p> <p>A 1.2m high wave return wall is needed along Marine Parade. To the southern half of Marine Parade, a higher defence level could be achieved by raising the level of the grass bank.</p> <p>For Kames Bay, a 0.8m high wall is required around the landward side of the promenade, plus drainage improvements to the grass area to deal with residual overtopping.</p>
--	--

4 Questionnaire findings

4.1 General information

There were between 150 and 200 visits made to the March 2017 consultation workshops. One hundred and sixty two (162) people responded to the questionnaire. This compares to an estimated resident population of Millport of 1280 (2011 census), i.e. response rate of 13% of all residents .

The majority of respondents were local residents (69%, Figure 4.1), and they were generally satisfied with the way in which the consultation has been undertaken (Figure 4.2)

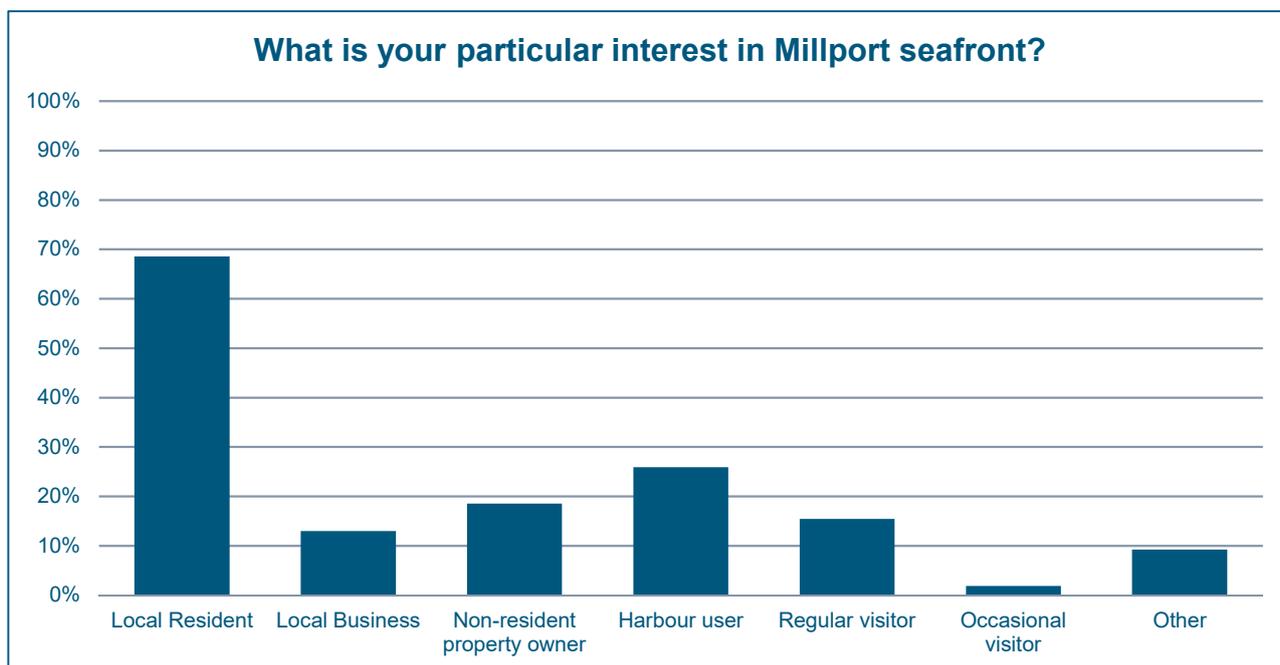


Figure 4.1: Showing the connection of respondents to Millport

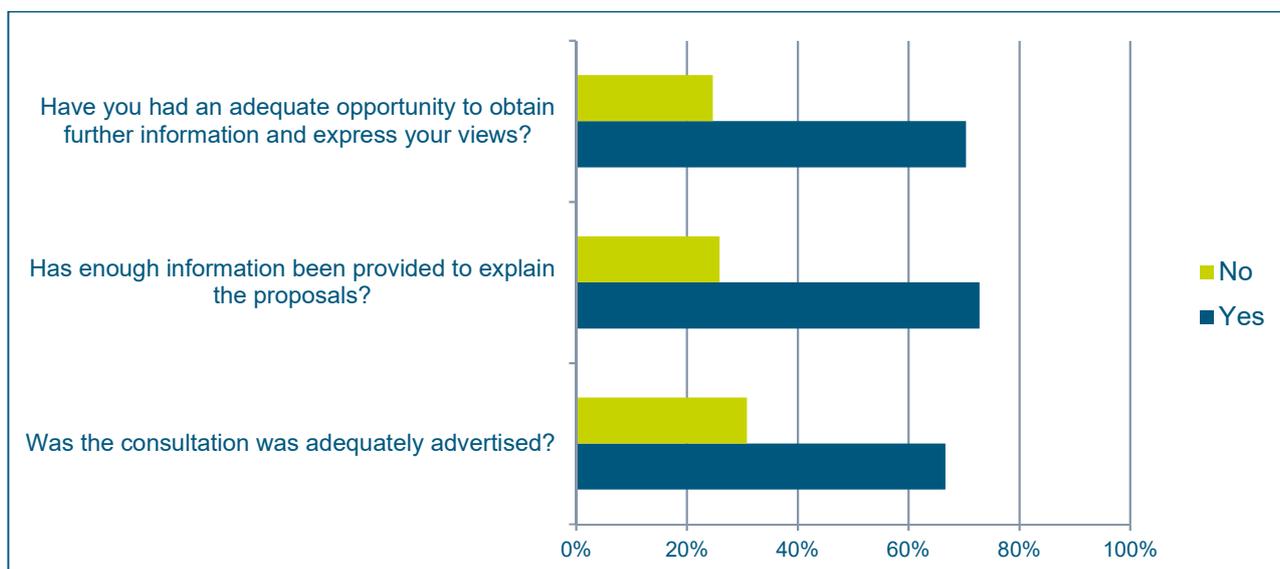


Figure 4.2: Showing opinions on the consultation process



When asked to comment on the consultation process the majority response was positive. However, some concerns were raised about the timing of the public exhibitions and how this effected people’s engagement (18 comments). It was pointed out that many people concerned with the scheme proposals couldn’t attend for the following reasons:

- They were at work and as the exhibition was during the day they couldn’t attend;
- They were immobile due to age or disability and couldn’t attend;
- They were unaware of the event taking place as they had not seen advertisements and/or did not have internet access; and
- The event was held outside of tourist season so holiday home owners were not in the area.

Concerns were expressed (7 comments) about the format of the online survey, which required a ‘concern’ to be selected for a proposal even if the respondent had previously indicated that they fully approved of the proposal.

4.2 Opinions about the scheme proposals

The Questionnaire responses demonstrated quite clear preferences in the potential solutions presented (Figure 4.3).

- The majority of respondents agree with the proposals to protect the Old Town (West Bay Road to Clyde Street), but with some concerns expressed.
- A number of issues have been raised in relation to the proposals to protect Glasgow Street, Kames Bay and Marine Parade.
- There is strong opposition to Option 1 (extension of Millport Pier using rock armour), with greater preference for an offshore breakwater solution (Options 2 and 3).

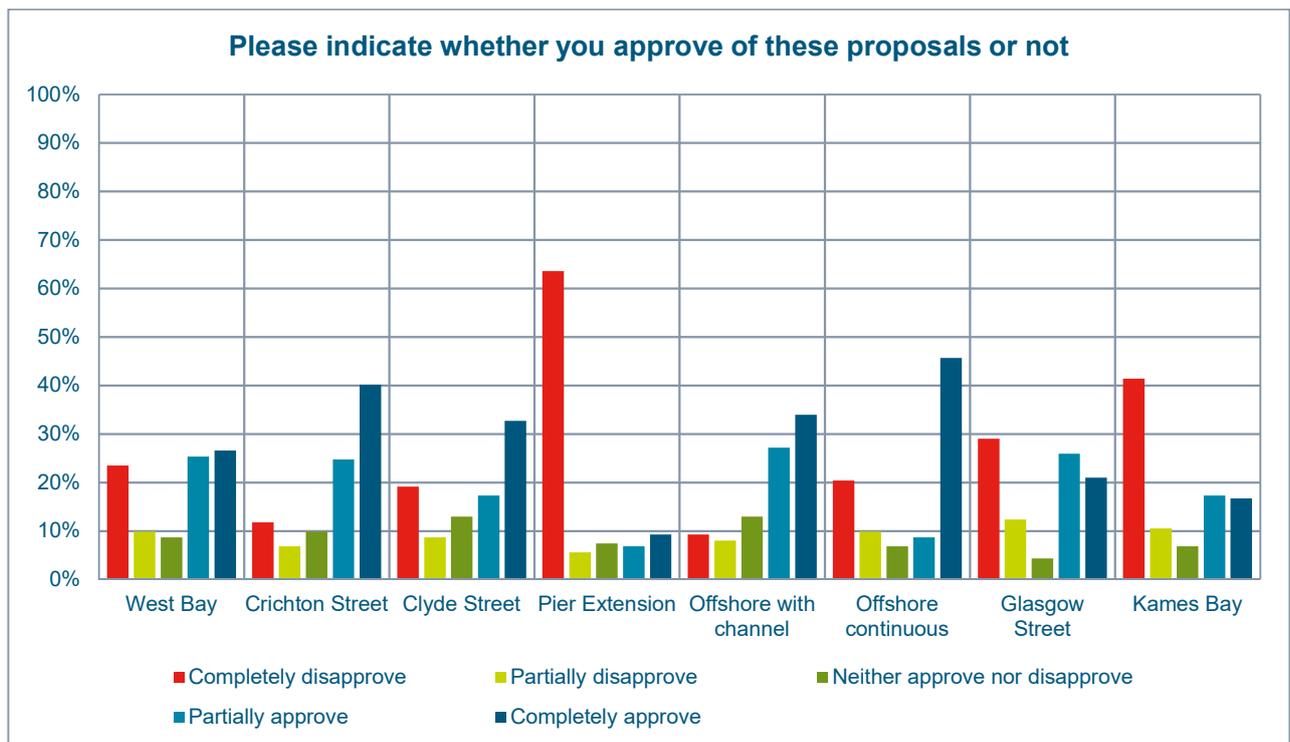


Figure 4.3: Opinions on the potential solutions

4.3 Concerns about the scheme

Respondents had the opportunity to select as many of the “concerns” as were relevant for each option. This gives an indication of the strength of concern for each potential solution (Figure 4.4). In correlation with Figure 4.3 the greatest concern is with the option to extend the pier.

In general respondents are concerned about the effect that the scheme will have on beach access, visual appearance, and subsequent impacts on the tourism industry.

For all options and locations, there were responses giving the opinion that a scheme is not needed. In particular, there is a strong belief that the proposed scheme is not needed for Kames Bay and Marine Parade (>40% of responses).

In correlation with the general approval of offshore coast protection options for Stuart Street, respondents showed the least concern about these proposals.

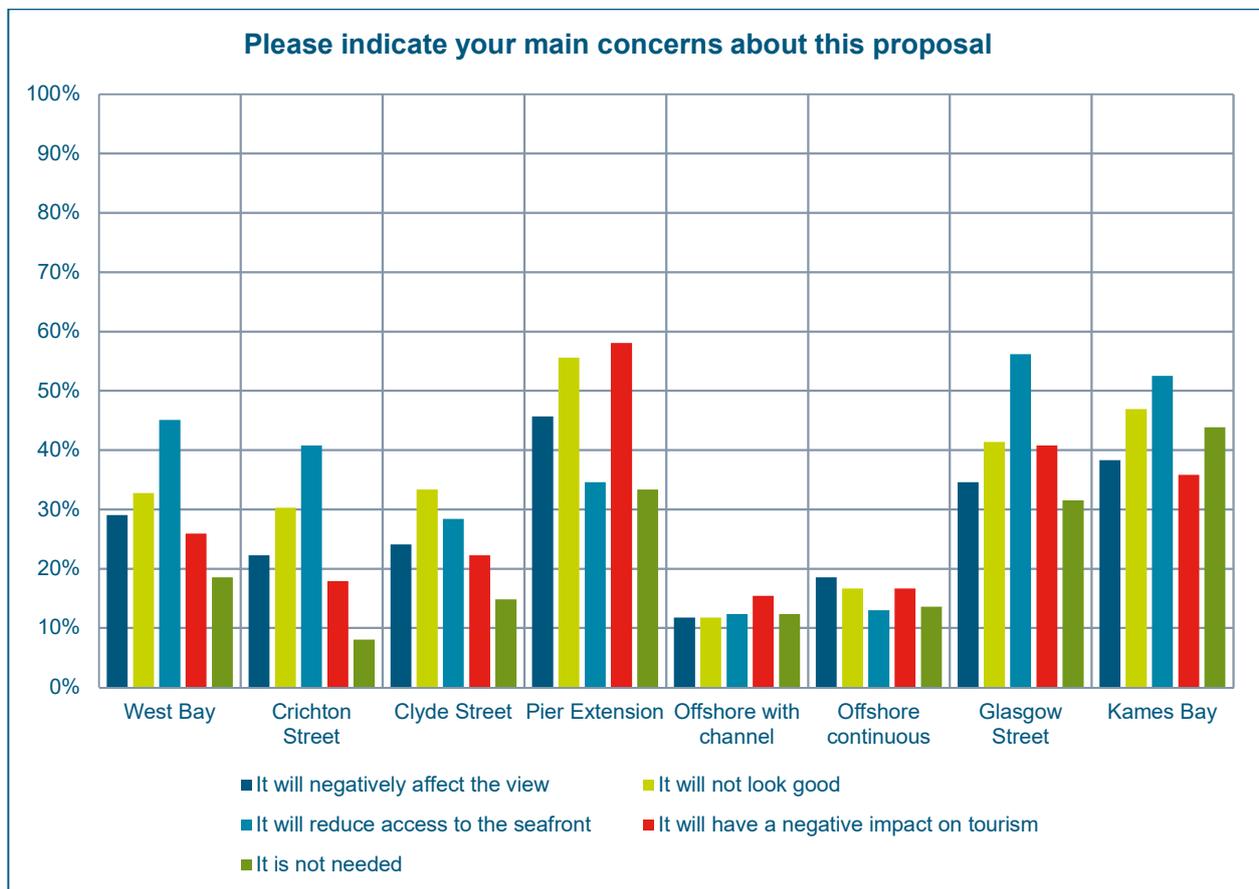


Figure 4.4: Concerns about each potential solution

4.4 Comments on the scheme proposals

West Bay Road and Millburn Street

The comments on the proposals for this area related to the need for the scheme, concern about the appearance of flood walls and the need to maintain access. Comments recognised that Millburn Street was vulnerable (8 comments) but other comments considered the flood risk to West Bay Road to be limited (14 comments).

Crichton Street

Comments generally recognised a need for flood protection in this area (26 specific comments on the need for protection to this area). Concerns were raised about the height and appearance of flood walls, including the impact on views from properties (15 comments). The need to maintain access to the foreshore is a key issue here (7 comments), as is a requirement for adequate drainage through any walls (3 comments)..

Clyde Street

Conflicting views were stated in relation to the flood risk in this area, with most responses recognising a flood risk (17 comments) here but with 6 comments stating that the proposed revetment was not necessary or wouldn't work. Two comments on this option referred to the proposed offshore breakwaters, considering that those proposals would mean that a rock revetment would not be necessary. Concerns were raised that access to Knox Port would be affected (4 comments). The potential negative impact on natural habitats was also noted (4 comments).

Stuart Street

Strong opinion was voiced (50 comments) about the potential negative impact of extending the pier (Option 1). Comments expressed a strong desire to maintain the function currently provided by the timber part of the pier. Issues raised about the proposed rock armour extension included visual impact, navigation constraints and harbour access, potential risk of sediment loss from Newtown beach, impact on natural environment.

Four respondents preferred this option over the offshore breakwaters, and 9 comments recognised that this option could potentially be acceptable if there was berthing for boats on the inshore side of the breakwater.

Comments preferring Option 2 (offshore breakwaters with navigation channel) mainly referred to a preference to maintain the existing navigation channel. Comments preferring Option 3 (continuous breakwater) recognised the increased shelter provided for vessels. However, negative comments on Option 3 highlighted the impacts on navigation, particularly for larger vessels (16 comments).

A few comments were made about the visual impact of offshore breakwaters, with more negative comments about Option 3 (6 comments) than Option 2 (3 comments).

For all of the Stuart Street options there were comments made about whether the extent of the proposed works was necessary in relation to the level of flood risk. This issue was raised most often in relation to Option 3 (6 comments).

Glasgow Street

Comments recognised the need for a flood wall near to the Cross House (19 comments). However, many comments questioned whether a flood wall was necessary to other parts of Glasgow Street (23 comments). Concerns were raised about the reduction in access along this part of the seafront and the appearance of flood walls. The need to maintain drainage through any walls was highlighted.

Kames Bay

The proposed flood wall was considered to be unnecessary in this area (39 comments), with the grass area recognised as mitigating against the risk of flooding to properties and the road. Concerns were raised about the potential impact on the SSSI, flood walls creating a barrier to the beach, and the visual impact of walls.

Marine Parade

A flooding risk was recognised for the northern part of Marine Parade (9 comments). However, 10 comments highlighted that properties are not at risk of flooding. Drainage through any walls was noted as a concern.

General comments and issues

Comments on the proposals for West Bay Road, Crichton Street, Clyde Street and Glasgow Street suggest that the proposed works would not be needed if an offshore breakwater solutions was implemented. This highlights that more communication is needed regarding the performance of an offshore breakwater.

Varying opinion was voiced about the level of flooding experienced at different points in Millport Bay. Opinions stated were often contradictory, with as many people claiming flooding was a problem in certain areas as commented the contrary. Some respondents questioned the need for walls if drainage was not improved at the same time.

Various comments noted a lack of maintenance of the existing coastal structures and the promenade.

Strong concerns about access to and views of the seafront were as evident as they were in the previous survey. It is noted that access elements of the scheme have not yet been developed or communicated to the public, and recognised that these concerns will continue until this issue is addressed through consultation.

5 Conclusions

The questionnaire respondents were predominantly local residents. Whilst flood risk and a need for flood protection was recognised for parts of Millport, many residents question the need for the scheme and have significant concerns about certain scheme elements. In particular, the need for flood walls at Kames Bay was questioned by many respondents.

Particular opposition was voiced against the proposal for extending Millport Pier with rock armour and relatively stronger support was voiced in favour of an offshore breakwater, but without a very clear preference for either Option 2 or Option 3.

It is noted that the higher level of support for Options 2 or 3 may be influenced by discussions about the potential for marine development inshore of an offshore breakwater. However, these proposals have not yet been clarified. The project team is working to clarify this issue and other assumptions about the potential solutions before the next consultation event.

Strong concerns persist regarding access, visual impact, and impact on the view. These concerns feed in to wider concerns about impacts on tourism and about how the flood protection scheme will connect with parallel issues relating to investments in drainage and tourism.

Millport Coastal Flood Protection Scheme

Summary of February 2019 Consultation Feedback

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Reference: PB4749-RHD-ZZ-XX-RP-Z-019

Status: 1.0/Final

Date: April 2019

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Project number: PB4749

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Appendices

Appendix A	February 2019 Consultation Questionnaire
Appendix B	Table of Questionnaire Results (anonymised)

1 Introduction

This report presents the findings of the third Millport Coastal Flood Protection Scheme (FPS) Community Consultation Questionnaire, which formed part of the community consultation event held during the week commencing 11th February 2019. Empowering communities is a core policy of both North Ayrshire Council and the Scottish Government. Engagement and consultation with the people of Millport is an essential part of the scheme development process.

The February 2019 consultation event informed the Millport community about the findings of the Scheme Recommendation Report, North Ayrshire Council's Preferred Option (an offshore breakwater connecting small islands in Millport Bay with onshore flood walls along the Millport shoreline – supporting the potential for step ashore facilities under the auspices of the Ayrshire Growth Deal) and explored options for the onshore works. The aim of this questionnaire was to obtain comments on the proposals for the onshore works, including the alignment of flood walls, access and form of construction.

This report first provides details of the community consultation undertaken (Section 2). Section 3 outlines the methodology for the survey and analysis, before going on to set out the results (Section 4). This report provides brief conclusions regarding the results of this questionnaire only, because the survey is part of an ongoing process of planning and design.

2 Summary of consultation

Community engagement workshops have previously been held during November/December 2016 and March 2017. Consultation questionnaires were issued alongside both of these workshops. The first consultation and questionnaire focussed on how the seafront is used and the important aspects to be considered in development of the scheme. The second consultation and questionnaire provided an update on the development of the scheme proposals and explored the community's wider ambitions for the town (led by the Council's Tourism and Coastal Economy team).

A third community engagement event was held, also jointly with North Ayrshire Council's Tourism and Coastal Economy team, on 12th and 13th February 2019. The aim of this exhibition and associated workshops was to update local residents on progress with scheme development, including the findings of the Scheme Recommendation Report, which has been presented to North Ayrshire Council's Cabinet, confirming the recommended preferred solution. The community design workshops that formed part of the event explored the requirements for the onshore works which are part of the proposed scheme. The location, appearance, landscaping and access needs for the flood walls and other structures were discussed.

The February 2019 consultation event was publicised in the local newspaper, on the North Ayrshire Council website, and via letters to local residents. The first day of the consultation event was during a school mid-term break; this timing was selected because more residents were likely to be available on this date. The event was also open until 7pm in the evening, to allow working people to attend. **Between 170 and 200 visits were made to the exhibition and workshops over the two day period.** A workshop was also held with 9 students from Largs Academy on the 14 February 2019.



Figure 2-1: Consultation workshop



Figure 2-2: Community Consultation



Figure 2-3: Student Consultation

As for the previous consultations, a 'Frequently Asked Questions and Answers' leaflet and a questionnaire was developed for the February 2019 event, and was made available at the workshops. An online version of the questionnaire could be accessed from the NAC website.

For this consultation, a video visualisation of the scheme proposals was also prepared, to help the community envisage the proposal. The visualisation showed a 3D model representation of the onshore works and offshore breakwater. The visualisation was well received during the event (see Section 3.8). The community recognised that the visualisation was a starting point for discussion of the location and appearance of the onshore works.

The exhibition materials from this consultation event, including the visualisation video, plus the materials from the previous consultations, were also provided on the North Ayrshire Council website.

Consultation with statutory stakeholders and other organisations with a potential interest in the Millport CFPS is ongoing, following the statutory processes required for approval of a flood protection scheme. An Environmental Scoping Report has been completed and issued to stakeholder organisations, to confirm the requirements for the environmental impact assessment for the scheme.

3 Consultation questionnaire

3.1 Methodology

As for the previous consultation questionnaires for the Millport Coastal FPS, two survey methods were used:

- i. Online, using Survey Monkey, through a link on North Ayrshire Council's website; and
- ii. Printed questionnaire provided during the consultation workshops.

The questions asked ranged from identification through to satisfaction with the engagement process, as set out in the questionnaire attached as Appendix A. Questions covered the following topics:

- 1 Contact details
- 2 Interest in Millport seafront
- 3 Selection of the preferred option
- 4 Alignment of flood walls on Glasgow Street
- 5 Alignment of flood walls on Kelburn Street
- 6 Access between the road and the promenade/beach
- 7 Materials for flood walls
- 8 Improving the seafront area
- 9 Consultation process

To comply with Data Protection requirements, all personal identification results have been omitted from this report.

3.2 General information

There were between 170 and 200 visits made to the March 2019 consultation workshops. In total, 29 questionnaire responses were received, plus a further nine responses from students. This compares to 116 responses to the December 2016 questionnaire, and 162 responses to the March 2017 questionnaire.

It seems that the large number of local residents who took an active role during the design workshops felt they had provided their feedback during those discussions with the Project Team and therefore did not complete the questionnaire.

For previous consultations, questionnaires were posted to all Millport residents. This was considered to be unnecessary at this stage in the scheme development due to the greater awareness of the project within the community, and the number of responses received to previous questionnaires.

The majority of respondents were local residents (69%, Figure 3-1), and they were generally satisfied with the way in which the consultation has been undertaken (Figure 3-2).

When asked to comment on the consultation process the majority response was positive. However, some concerns were raised:

- The timing of the consultation meant that some working people, or non-resident property owners were unable to attend (3 comments, 8% of respondents);
- There were problems with accessing the online information and/or questionnaire, or they were unaware that online information was available (3 comments, 8% of respondents);
- Further engagement and consultation is needed regarding the proposed offshore breakwater (3 comments, 8% of respondents); and
- Some respondents feel that they are not being listened to, or that decisions are being made 'behind the scenes' (6 comments, or 16% of respondents).

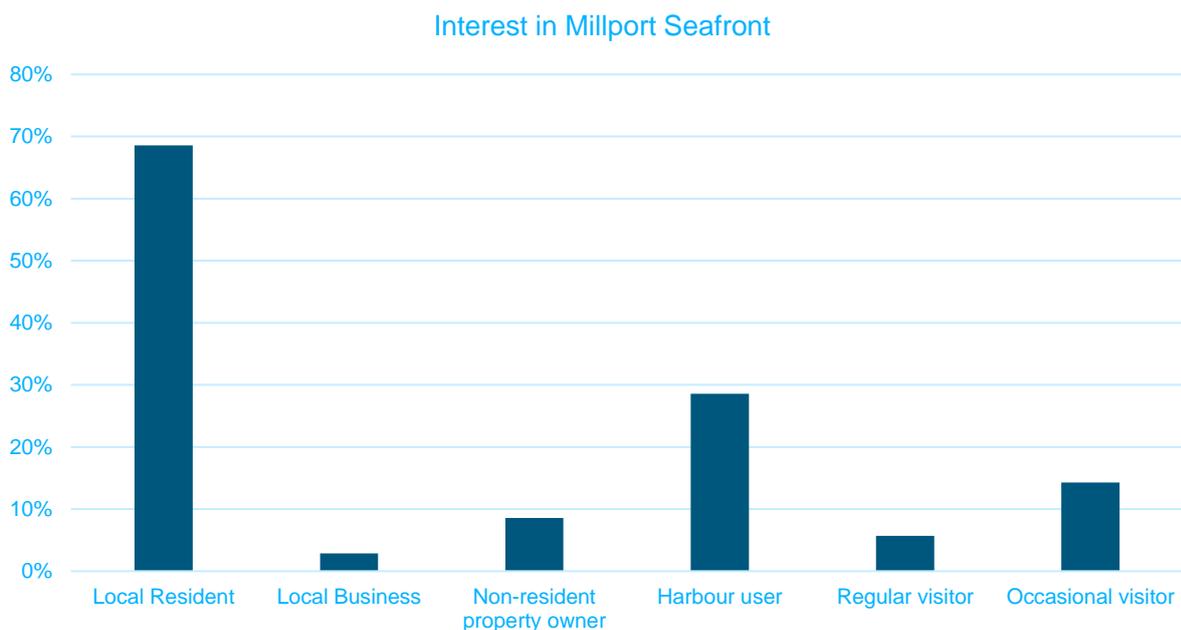


Figure 3-1: Showing the connection of respondents to Millport

3.4 Alignment of flood walls

The questionnaire provided alternative options for the alignment of the flood walls along Glasgow Street and Kelburn Street. For both Glasgow Street and Kelburn Street, the preference was for walls to be located closer to the promenade. Comments regarding the alignment of the flood walls included:

- The need to consider drainage requirements (3 comments, 8% of respondents);
- The need to consider access (addressed elsewhere in the questionnaire and this report);
- The risk of rubbish collecting next to the flood walls was noted; and
- Possible safety risks if the flood wall was located close to the road.

The questionnaire did not cover the alignment of the onshore defences around Kames Bay, because prior to the consultation event it was understood that local physical constraints meant the defences needed to be aligned close to the road. However, comments during the design workshops generally indicated that a raised defence level closer to the promenade would be preferred, with this raised defence level integrated into the grass area, with steps down to the promenade, if possible.

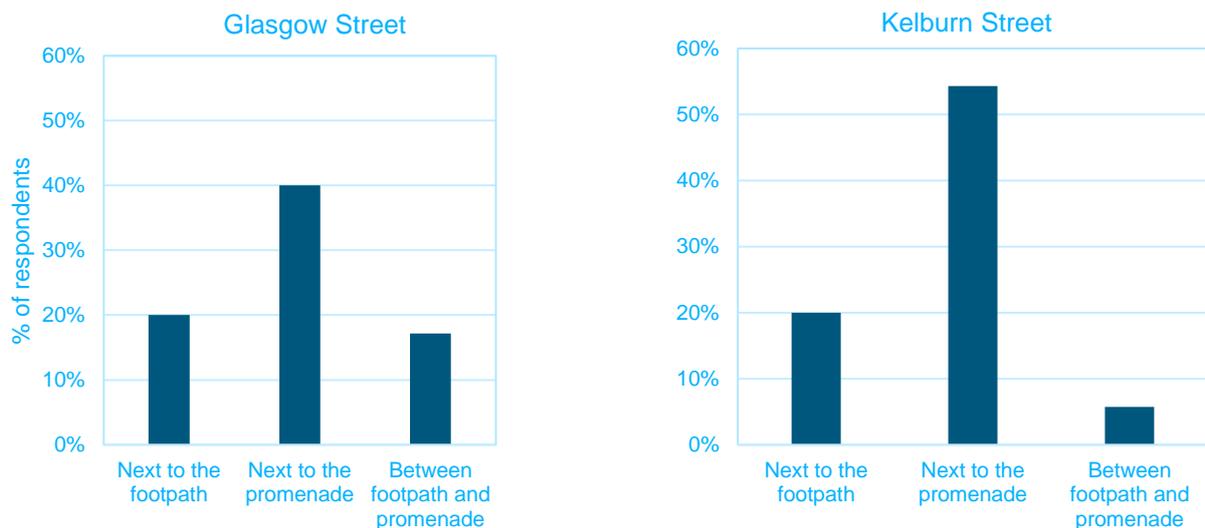


Figure 3-5: Alignment of flood walls



Figure 3-6: Infographic of comments on the alignment of flood walls

3.6 Materials for flood walls

Comments were requested regarding the shape, materials and surface finishes for the flood walls, and these are shown in Figure 3-8.

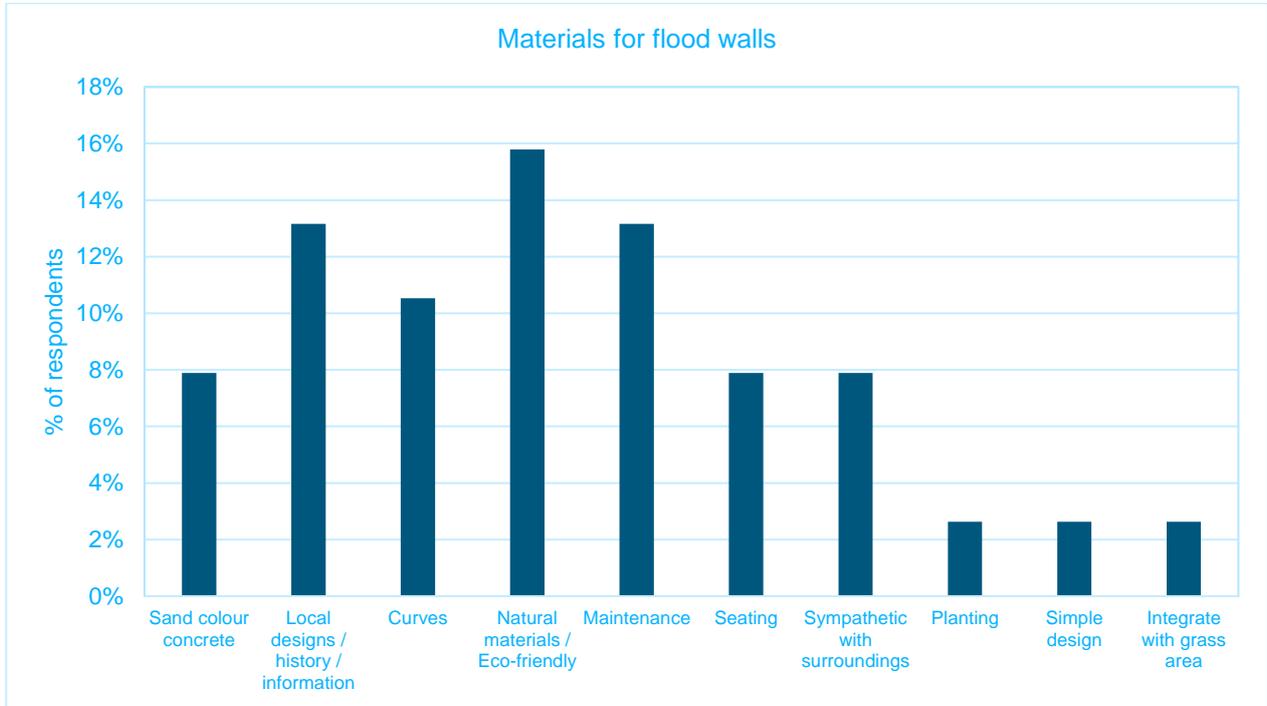


Figure 3-8: Materials for flood walls



Figure 3-9: Infographic of comments relating to materials for flood walls

During the consultation, the design team suggested that the flood walls could be positioned as close to the sea as possible. This would allow for soft landscaping to disguise or hide the wall wherever possible. This proposal seemed to be well received. Flood walls positioned closer to the sea would also give the opportunity to segregate pedestrians and cyclists, which seemed to be the preference of many design workshop participants.

The design team explained that a concrete wall would be the most robust solution, and that there would be opportunities to soften this with colour (perhaps to match local sand), texture and artwork. A number of case studies showing successful coastal flood protection schemes were presented which demonstrated how these features can positively transform areas. Discussions about 'what makes a wall a wall' took place and the idea of using seating to replace walls where possible was appreciated.

Access to the beach was an important discussion point. The design team confirmed that all existing footpaths and stepped access points would be retained, and enhanced wherever possible, to facilitate the proposals. It was acknowledged that the condition of and requirements for the existing jetties and launching points for small craft (such as kayaks and dinghies) need to be considered further and improvements incorporated into the proposals where possible.

As discussed elsewhere in this report, drainage requirements will be addressed as part of the detailed design of the scheme.

Overall, the public were positive about the proposals for the onshore works and associated landscaping, and seemed to understand the opportunities that the proposals could bring to Millport and its future success as a tourist destination.

5 Summary of outstanding questions following consultation

Various outstanding questions regarding the scheme proposals have been identified following the February 2019 consultation event and associated questionnaire. Table 1 summarises these questions and how they will be addressed.

Table 1 – Outstanding questions following February 2019 consultation

Question	Response / how this question will be addressed
1. Provide more information about the decision process for the selection of the preferred option.	The Scheme Recommendation Report sets out the decision process for the preferred option. This report has been presented to North Ayrshire Council Cabinet and is publicly available on the North Ayrshire Council flooding website.
2. Have the proposals for a marina influenced the selection of the preferred option?	The Scheme Recommendation Report acknowledges that there is the potential for a marina to be constructed in the future in the sheltered area that would be provided by the offshore breakwater. This opportunity is recognised qualitatively in the Interim Environmental Assessment. The potential economic benefits that might be associated with a marina are not included in the economic justification for the flood protection scheme.
3. Is the proposed flood wall needed for the full length of Marine Parade?	It is acknowledged that the assessment of flood risk to the southern part of Marine Parade may have been overly pessimistic, and that a flood wall may not be needed in this area based on the limited evidence of flooding proposed flood wall for Marine Parade may not be necessary
4. Can a staged approach be taken to the construction of different parts of the scheme, also considering how the proposals for a marina might progress?	The potential for a marina has not yet been fully assessed, nor has funding been identified. To integrate a marina scheme with the FPS would delay the implementation of the required flood protection works. Therefore a marina will not form part of the Flood Protection Scheme works. The construction of the FPS may be undertaken in phases to minimise impacts on residents and businesses during the summer period.

Question	Response / how this question will be addressed
5. Would a breakwater that was only constructed between the Leug and the Spoig provide enough protection?	The results of the wave disturbance and overtopping modelling have shown that to provide an appropriate standard of flood protection to the Stuart Street and Guildford Street area of Millport, offshore breakwaters would be required between the Leug, the Spoig and the southern Eilean. Various configurations of the offshore breakwater have been considered, with the preferred solution identified as a 120m rock armour breakwater connecting the Leug and the Spoig, 210m breakwater between the Spoig and the southern Eilean, as set out in the Scheme Recommendation Report.
6. Would a short breakwater to the west of the Leug reduce flood risk to the Old Town?	An offshore breakwater to the west of the Leug would need to be about 200m long to provide protection to Crichton Street and Clyde Street, or 300m long to also protect Millburn Street and West Bay. A breakwater of this size would significantly constrain navigation access, particularly when considered in combination with the breakwaters proposed between the Leug, the Spoig and the Eileans. In addition, the sea bed in this area is much deeper than elsewhere in Millport Bay, making the cost of construction of a breakwater here prohibitively expensive.
7. Further information is needed about the navigation constraints of Option 2 for larger vessels	An assessment of navigation issues has been completed to inform preparation of the Environment Statement for the proposed scheme. This included consultation with the Northern Lighthouse Board, RYA Scotland and the operators of the PS Waverley. This assessment will be reviewed to ensure it fully considers the future restrictions on navigation access for all types of vessels that would result following construction of the proposed scheme.
8. There are safety concerns relating to the possible alignment of a flood wall adjacent to the roads.	One questionnaire response raised concerns about the possible safety risks to children of locating the flood wall closer to the road rather than near the promenade. The exact nature of this concern wasn't fully clear from the comments, but might relate to the chance that children would climb on the walls and could fall into the road. There may also have been a misunderstanding that the existing footpath would be removed. As with all H&S issues, this concern is noted and will be considered further as the onshore works are developed. Public safety risk assessments will form part of the further design work for the scheme.
9. More information is needed about drainage design.	Drainage design is a detailing issue and will be addressed later in the scheme development. Drainage design requirements do not influence the location of the onshore flood walls.
10. Are there any alternative solutions for Crichton Street?	<p>During the consultation event, an alternative option was proposed for Crichton Street. This was to extend the Clyde Street revetment to the West as a breakwater. However, this is not a technically viable solution because a very large and visually intrusive breakwater would be needed to achieve a structurally stable breakwater on that alignment.</p> <p>Wave overtopping analysis has been completed to optimise the height of the defences needed for Crichton Street, to keep these as low as possible. The ongoing landscape design assessment is considering the layout of the flood protection structures in this area with the aim of maintaining open access and minimising the perceived height of the structures.</p>
11. Are there any alternative solutions for Clyde Street?	<p>As discussed in response to Question 6 in this Table, an offshore breakwater to the west of the Leug is not a technically or financially viable solution to provide flood protection to Clyde Street. Apart from the proposed rock armour revetment, the only other possible solution for Clyde Street would be to increase the height of the property boundary walls. This would have a significant adverse impact on residents' views from their properties, particularly from the ground floor and the gardens, so this option was rejected. The proposed rock revetment would have a limited impact on views from the properties.</p> <p>The comments raised about the impact of a revetment on access over the rock foreshore to the sea are noted. This issue will be considered further in the next stages of scheme development, including through direct consultation with Clyde Street residents.</p>
12. Can there be more direct engagement with residents of Crichton Street, Clyde Street and the Cross House?	Meetings with the residents of Crichton Street, Clyde Street and the Cross House will be arranged as part of the next consultation event.

Question	Response / how this question will be addressed
13. Is there the potential to improve Millport Pier as part of the construction works, e.g. to benefit the delivery of construction materials?	Works to improve Millport Pier do not form part of the preferred option, as explained in the Scheme Recommendation Report. As part of the competitive tender process for the works, the potential contractors will be required to set out their proposals for transport of materials, with the aim of minimising the impact on Millport residents and businesses. These proposals could include works to the pier to improve its condition to enable the delivery of construction materials by sea.
14. What are the plans for future maintenance of the flood protection scheme structures?	An Operations and Maintenance Plan will be developed as part of the scheme design documents, and the maintenance requirements agreed with North Ayrshire Council, to enable the Council to allow for this in future annual budgets.

6 Conclusions

The February 2019 Community Consultation was a very positive event, with great attendance.

The Council's Preferred Option received overwhelming support. The real focus was on the community design workshops, discussing the onshore elements of the scheme, where many of the local residents took an active role.

A relatively low number of questionnaire responses were received. Whilst this is disappointing, given the good attendance at the workshops, it seems that the large number of local residents who took an active role in the workshops felt that they provided their feedback during those discussions with the Project Team and therefore did not complete the questionnaire.

Individuals provided comments on the proposed onshore works during the workshop sessions. This input has given a good steer to the way forward for the landscape design. The next iteration of development of the design of the onshore works will be presented to the community at a further consultation event to be held in summer 2019.

An important outcome of this questionnaire is the identification of questions that still need to be addressed before a scheme is formally notified. Responses will be provided to the questions raised in the February 2019 consultation at the next consultation event. This consultation is likely to also include specific meetings with residents who have particular issues, in particular the residents of Crichton Street, Clyde Street and the Cross House.

Millport Coastal Flood Protection Scheme

Community Consultation Questionnaire, February 2019

Many homes and businesses in Millport are at risk of flooding from the sea. North Ayrshire Council is developing the Millport Coastal Flood Protection Scheme with close community involvement. In our continued commitment to help people improve their lives on Great Cumbrae, North Ayrshire Council is developing a flood protection scheme to reduce this risk.

A Scheme Recommendation Report has been prepared which sets out the preferred way forward for the coastal flood protection scheme. This consultation event presents the preferred scheme and discusses the landscape design requirements for the onshore flood walls that are needed as part of the scheme.

Further consultation will be held following Council approval of a preferred scheme, and that future consultation will cover issues related to the construction process.

Additional information about the coastal flood protection scheme proposals is available on the North Ayrshire Council website: www.north-ayrshire.gov.uk/flooding. Information will also be provided during a public exhibition and workshops to be held at the Garrison in Millport on 12th and 13th February 2019, and student consultation on 14th February 2019.

This questionnaire gives you the opportunity to express your views about the recommended scheme. Please complete as much of the questionnaire as you wish. Your views will be taken into account in the development of the scheme design, and we will provide feedback on how this has been done.

Completed questionnaires should be returned to the Garrison House (library information desk) or posted to North Ayrshire Council at the address below, before 7th March 2019.

Privacy statement

We will only process your personal information provided in this questionnaire to contact you if you have expressly stated you wish to be contacted.

Your personal data will be stored securely, in line with the Council's policies, and only held for as long as is necessary.

If you would like to find out more on how we manage your data, please visit:

<https://www.north-ayrshire.gov.uk/privacy-policy.aspx>

The questionnaire can also be completed online, via the North Ayrshire Council website:

www.north-ayrshire.gov.uk/flooding.

Thank you for your time and input. We will keep people informed about the development of the flood protection scheme using newsletters and the North Ayrshire Council website.

For any immediate questions please contact:

North Ayrshire Council: Cunninghame House,
Irvine, KA12 8EE

Contact: Patricia Rowley

Tel: (01294) 310000

Email: millportcoastalfps@north-ayrshire.gov.uk

Royal HaskoningDHV: Rightwell House, Bretton,
Peterborough, PE3 8DW

Contact: Amy Savage

Tel: (01733) 336522

Your contact details

If you would like North Ayrshire to keep you updated on the flood protection scheme proposals please tick here.	
If you would like North Ayrshire Council to contact you regarding your response to this questionnaire please tick here.	

Please provide your name and contact information in order for us to contact you.

Name:			
Address:			
Telephone:			
Email:			
Are you willing for North Ayrshire Council to retain your contact details in order to contact you regarding this response and/or the flood protection scheme proposals? Contact details will not be used for any other purpose.			YES
			NO

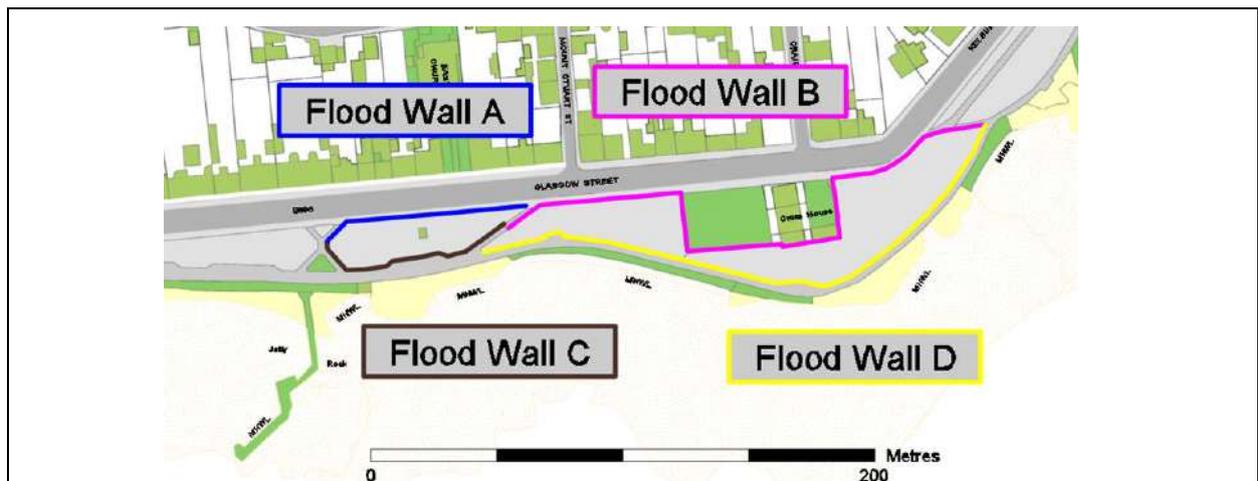
Interest

What is your particular interest in Millport seafront?							
Local Resident		Local Business		Non-resident property owner		Harbour user	
Regular visitor		Occasional visitor		Other:			

Preferred Option

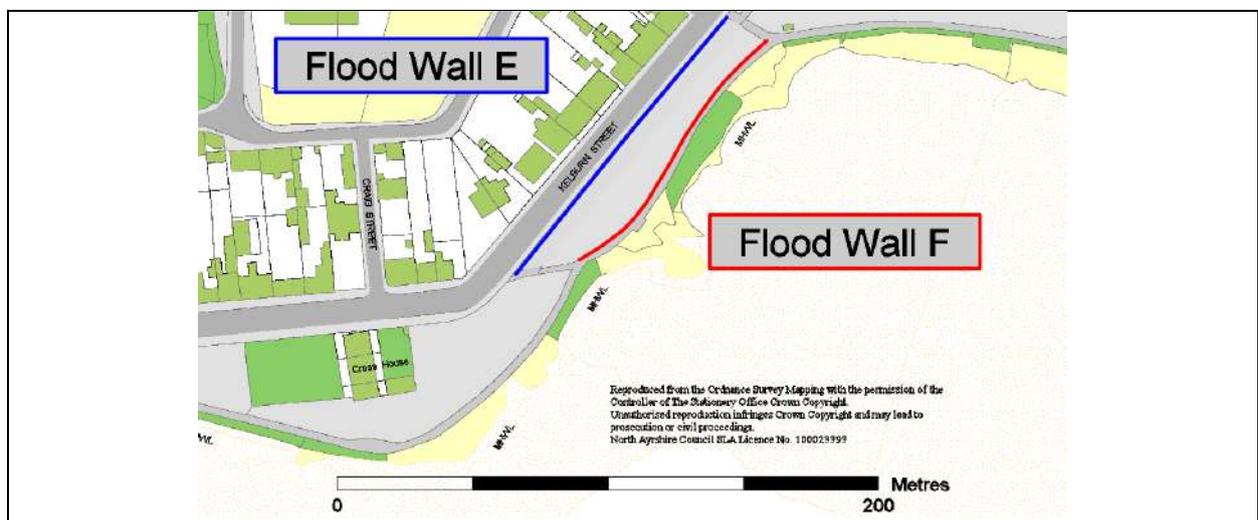
Do you understand and accept the reasons for selection of the preferred scheme option (Option 2 – offshore breakwater with onshore flood walls)?	
I understand and accept the reasons for selection of this option.	
I do not fully understand the reasons for selection of this option.	

Alignment of walls on Glasgow Street



The flood wall should be located next to the footpath (Flood Walls A and B).	
The flood wall should be located next to the promenade (Flood Walls C and D).	
The flood wall should be located on a different alignment within the grass area (in between Walls A/B and Walls C/D).	
Other comments about Glasgow Street wall alignment:	

Alignment of flood wall on Kelburn Street



The flood wall along Kelburn Street should be located next to the footpath (Flood Wall E).	
The flood wall along Kelburn Street should be located next to the promenade (Flood Wall F).	
The flood wall should be located on a different alignment within the grass area (between Wall E and Wall F).	
Other comments about Kelburn Street wall alignment:	

Access

Access should be provided between the road and the promenade/beach at similar locations to existing access points (a plan is provided with the printed questionnaire and on the North Ayrshire Flooding website).	YES
Please state where any additional access points to the promenade/beach are needed, and the reasons they are needed. You can also mark these on the plan	
Any other comments about access between the street and the promenade/beach:	

Materials for flood walls

Flood walls are required are part of the scheme. The flood walls will be built with a concrete core but could be different shapes and various surface finishes could be used. Please refer to the exhibition material for information on the alternatives.

Please provide any comments that you have on the shape, materials or surface finishes of the flood walls.
--

Improving the seafront area

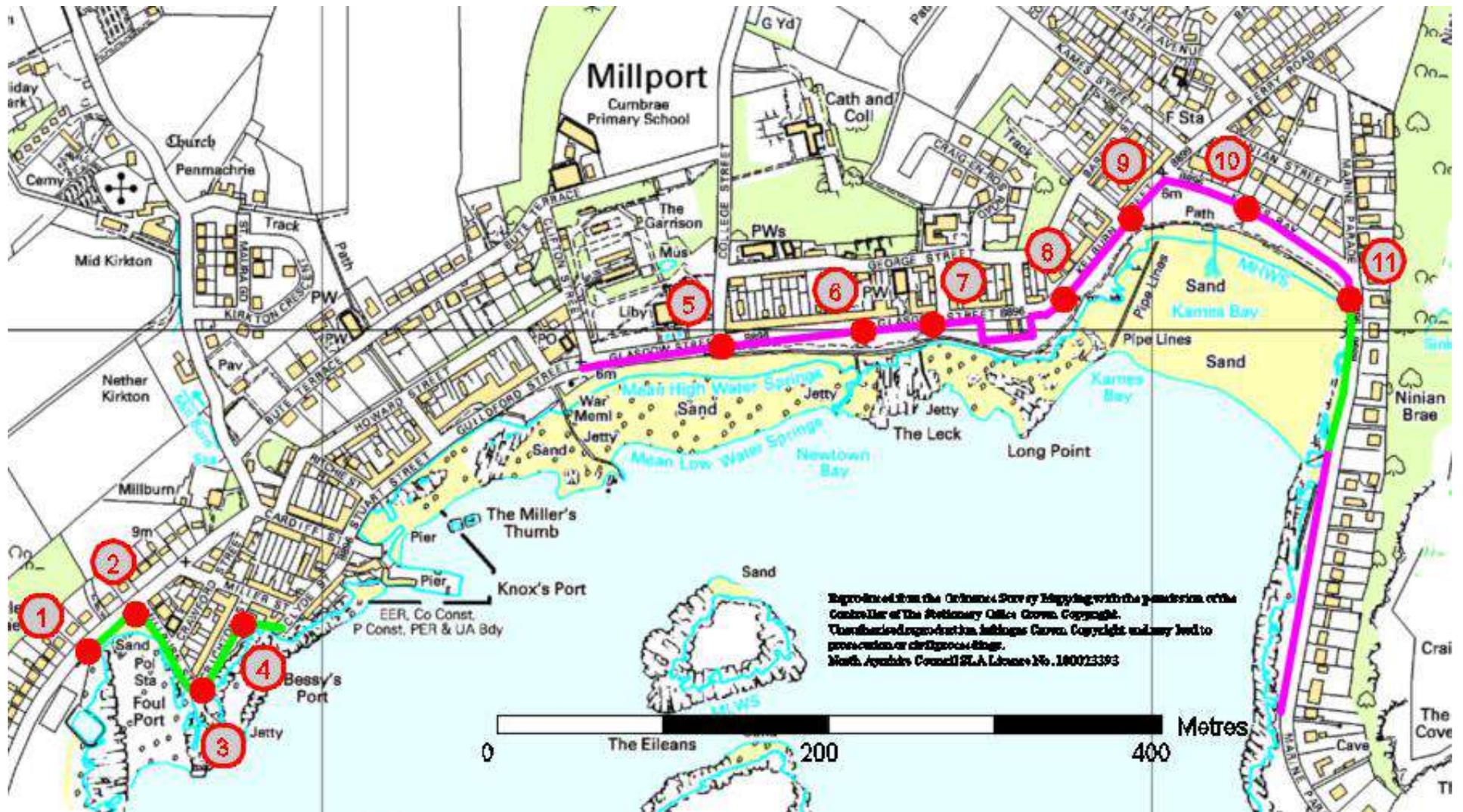
Are there any other issues relating to the sea front area which might be addressed alongside the flood protection scheme? Please note that funding may not be available for additional works. For example; seating, lighting, surfacing, access or amenity improvements.

Consultation Process

The Council wishes to continually improve, so we would appreciate your comments on this consultation process to benefit future exercises like this one.

Was the consultation adequately advertised?	YES	NO
Has enough information been provided to explain the proposals?	YES	NO
Is there any other information that should be provided about the Flood Protection Scheme proposals?		
Do you have any questions that have not yet been answered? Please note that there will be further consultation that will focus on the construction process.		

Did you attend one of the design workshop sessions?	YES	NO
If you attended a design workshop, were you able to contribute to the discussions and provide your comments on the proposed onshore works?	YES	NO
Please provide any comments that you have on the design workshop sessions:		
Did you see the video visualisation of the outline scheme proposals?	YES	NO
Did the visualisation help you to understand the scheme proposals?	YES	NO
Do you have any comments on the video visualisation?		
Have you had an adequate opportunity to express your views?	YES	NO
Do you have any other comments on the consultation process?		



Millport Coastal Flood Protection Scheme

Summary of February 2019 Consultation Feedback

Client: North Ayrshire Council

Reference: PB4749-RHD-ZZ-XX-RP-Z-019

Status: 1.0/Final

Date: April 2019

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Document title: Millport Coastal Flood Protection Scheme

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Reference: PB4749-RHD-ZZ-XX-RP-Z-019-P1.0

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Date: April 2019

Project name: Millport FPS

Project number: PB4749

Author(s): Amy Savage

Drafted by: Amy Savage

Checked by: Elaine Hawkins

Date / initials: 04/04/2019 EH

Approved by: Nick Cooper

Date / initials: 08/04/2019 NC

Classification

Project related



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Appendices

Appendix A	February 2019 Consultation Questionnaire
Appendix B	Table of Questionnaire Results (anonymised)

1 Introduction

This report presents the findings of the third Millport Coastal Flood Protection Scheme (FPS) Community Consultation Questionnaire, which formed part of the community consultation event held during the week commencing 11th February 2019. Empowering communities is a core policy of both North Ayrshire Council and the Scottish Government. Engagement and consultation with the people of Millport is an essential part of the scheme development process.

The February 2019 consultation event informed the Millport community about the findings of the Scheme Recommendation Report, North Ayrshire Council's Preferred Option (an offshore breakwater connecting small islands in Millport Bay with onshore flood walls along the Millport shoreline – supporting the potential for step ashore facilities under the auspices of the Ayrshire Growth Deal) and explored options for the onshore works. The aim of this questionnaire was to obtain comments on the proposals for the onshore works, including the alignment of flood walls, access and form of construction.

This report first provides details of the community consultation undertaken (Section 2). Section 3 outlines the methodology for the survey and analysis, before going on to set out the results (Section 4). This report provides brief conclusions regarding the results of this questionnaire only, because the survey is part of an ongoing process of planning and design.

2 Summary of consultation

Community engagement workshops have previously been held during November/December 2016 and March 2017. Consultation questionnaires were issued alongside both of these workshops. The first consultation and questionnaire focussed on how the seafront is used and the important aspects to be considered in development of the scheme. The second consultation and questionnaire provided an update on the development of the scheme proposals and explored the community's wider ambitions for the town (led by the Council's Tourism and Coastal Economy team).

A third community engagement event was held, also jointly with North Ayrshire Council's Tourism and Coastal Economy team, on 12th and 13th February 2019. The aim of this exhibition and associated workshops was to update local residents on progress with scheme development, including the findings of the Scheme Recommendation Report, which has been presented to North Ayrshire Council's Cabinet, confirming the recommended preferred solution. The community design workshops that formed part of the event explored the requirements for the onshore works which are part of the proposed scheme. The location, appearance, landscaping and access needs for the flood walls and other structures were discussed.

The February 2019 consultation event was publicised in the local newspaper, on the North Ayrshire Council website, and via letters to local residents. The first day of the consultation event was during a school mid-term break; this timing was selected because more residents were likely to be available on this date. The event was also open until 7pm in the evening, to allow working people to attend. **Between 170 and 200 visits were made to the exhibition and workshops over the two day period.** A workshop was also held with 9 students from Largs Academy on the 14 February 2019.



Figure 2-1: Consultation workshop



Figure 2-2: Community Consultation



Figure 2-3: Student Consultation

As for the previous consultations, a 'Frequently Asked Questions and Answers' leaflet and a questionnaire was developed for the February 2019 event, and was made available at the workshops. An online version of the questionnaire could be accessed from the NAC website.

For this consultation, a video visualisation of the scheme proposals was also prepared, to help the community envisage the proposal. The visualisation showed a 3D model representation of the onshore works and offshore breakwater. The visualisation was well received during the event (see Section 3.8). The community recognised that the visualisation was a starting point for discussion of the location and appearance of the onshore works.

The exhibition materials from this consultation event, including the visualisation video, plus the materials from the previous consultations, were also provided on the North Ayrshire Council website.

Consultation with statutory stakeholders and other organisations with a potential interest in the Millport CFPS is ongoing, following the statutory processes required for approval of a flood protection scheme. An Environmental Scoping Report has been completed and issued to stakeholder organisations, to confirm the requirements for the environmental impact assessment for the scheme.

3 Consultation questionnaire

3.1 Methodology

As for the previous consultation questionnaires for the Millport Coastal FPS, two survey methods were used:

- i. Online, using Survey Monkey, through a link on North Ayrshire Council's website; and
- ii. Printed questionnaire provided during the consultation workshops.

The questions asked ranged from identification through to satisfaction with the engagement process, as set out in the questionnaire attached as Appendix A. Questions covered the following topics:

- 1 Contact details
- 2 Interest in Millport seafront
- 3 Selection of the preferred option
- 4 Alignment of flood walls on Glasgow Street
- 5 Alignment of flood walls on Kelburn Street
- 6 Access between the road and the promenade/beach
- 7 Materials for flood walls
- 8 Improving the seafront area
- 9 Consultation process

To comply with Data Protection requirements, all personal identification results have been omitted from this report.

3.2 General information

There were between 170 and 200 visits made to the March 2019 consultation workshops. In total, 29 questionnaire responses were received, plus a further nine responses from students. This compares to 116 responses to the December 2016 questionnaire, and 162 responses to the March 2017 questionnaire.

It seems that the large number of local residents who took an active role during the design workshops felt they had provided their feedback during those discussions with the Project Team and therefore did not complete the questionnaire.

For previous consultations, questionnaires were posted to all Millport residents. This was considered to be unnecessary at this stage in the scheme development due to the greater awareness of the project within the community, and the number of responses received to previous questionnaires.

The majority of respondents were local residents (69%, Figure 3-1), and they were generally satisfied with the way in which the consultation has been undertaken (Figure 3-2).

When asked to comment on the consultation process the majority response was positive. However, some concerns were raised:

- The timing of the consultation meant that some working people, or non-resident property owners were unable to attend (3 comments, 8% of respondents);
- There were problems with accessing the online information and/or questionnaire, or they were unaware that online information was available (3 comments, 8% of respondents);
- Further engagement and consultation is needed regarding the proposed offshore breakwater (3 comments, 8% of respondents); and
- Some respondents feel that they are not being listened to, or that decisions are being made 'behind the scenes' (6 comments, or 16% of respondents).

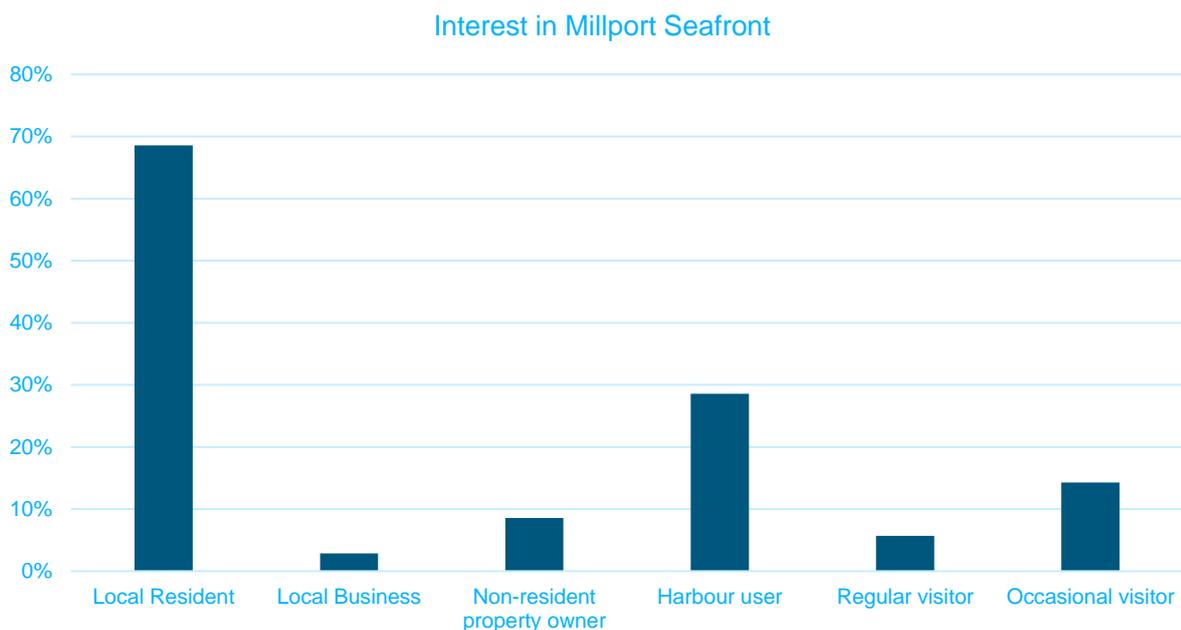


Figure 3-1: Showing the connection of respondents to Millport

During the consultation, the design team suggested that the flood walls could be positioned as close to the sea as possible. This would allow for soft landscaping to disguise or hide the wall wherever possible. This proposal seemed to be well received. Flood walls positioned closer to the sea would also give the opportunity to segregate pedestrians and cyclists, which seemed to be the preference of many design workshop participants.

The design team explained that a concrete wall would be the most robust solution, and that there would be opportunities to soften this with colour (perhaps to match local sand), texture and artwork. A number of case studies showing successful coastal flood protection schemes were presented which demonstrated how these features can positively transform areas. Discussions about 'what makes a wall a wall' took place and the idea of using seating to replace walls where possible was appreciated.

Access to the beach was an important discussion point. The design team confirmed that all existing footpaths and stepped access points would be retained, and enhanced wherever possible, to facilitate the proposals. It was acknowledged that the condition of and requirements for the existing jetties and launching points for small craft (such as kayaks and dinghies) need to be considered further and improvements incorporated into the proposals where possible.

As discussed elsewhere in this report, drainage requirements will be addressed as part of the detailed design of the scheme.

Overall, the public were positive about the proposals for the onshore works and associated landscaping, and seemed to understand the opportunities that the proposals could bring to Millport and its future success as a tourist destination.

5 Summary of outstanding questions following consultation

Various outstanding questions regarding the scheme proposals have been identified following the February 2019 consultation event and associated questionnaire. Table 1 summarises these questions and how they will be addressed.

Table 1 – Outstanding questions following February 2019 consultation

Question	Response / how this question will be addressed
1. Provide more information about the decision process for the selection of the preferred option.	The Scheme Recommendation Report sets out the decision process for the preferred option. This report has been presented to North Ayrshire Council Cabinet and is publicly available on the North Ayrshire Council flooding website.
2. Have the proposals for a marina influenced the selection of the preferred option?	The Scheme Recommendation Report acknowledges that there is the potential for a marina to be constructed in the future in the sheltered area that would be provided by the offshore breakwater. This opportunity is recognised qualitatively in the Interim Environmental Assessment. The potential economic benefits that might be associated with a marina are not included in the economic justification for the flood protection scheme.
3. Is the proposed flood wall needed for the full length of Marine Parade?	It is acknowledged that the assessment of flood risk to the southern part of Marine Parade may have been overly pessimistic, and that a flood wall may not be needed in this area based on the limited evidence of flooding proposed flood wall for Marine Parade may not be necessary
4. Can a staged approach be taken to the construction of different parts of the scheme, also considering how the proposals for a marina might progress?	The potential for a marina has not yet been fully assessed, nor has funding been identified. To integrate a marina scheme with the FPS would delay the implementation of the required flood protection works. Therefore a marina will not form part of the Flood Protection Scheme works. The construction of the FPS may be undertaken in phases to minimise impacts on residents and businesses during the summer period.

Question	Response / how this question will be addressed
5. Would a breakwater that was only constructed between the Leug and the Spoig provide enough protection?	The results of the wave disturbance and overtopping modelling have shown that to provide an appropriate standard of flood protection to the Stuart Street and Guildford Street area of Millport, offshore breakwaters would be required between the Leug, the Spoig and the southern Eilean. Various configurations of the offshore breakwater have been considered, with the preferred solution identified as a 120m rock armour breakwater connecting the Leug and the Spoig, 210m breakwater between the Spoig and the southern Eilean, as set out in the Scheme Recommendation Report.
6. Would a short breakwater to the west of the Leug reduce flood risk to the Old Town?	An offshore breakwater to the west of the Leug would need to be about 200m long to provide protection to Crichton Street and Clyde Street, or 300m long to also protect Millburn Street and West Bay. A breakwater of this size would significantly constrain navigation access, particularly when considered in combination with the breakwaters proposed between the Leug, the Spoig and the Eileans. In addition, the sea bed in this area is much deeper than elsewhere in Millport Bay, making the cost of construction of a breakwater here prohibitively expensive.
7. Further information is needed about the navigation constraints of Option 2 for larger vessels	An assessment of navigation issues has been completed to inform preparation of the Environment Statement for the proposed scheme. This included consultation with the Northern Lighthouse Board, RYA Scotland and the operators of the PS Waverley. This assessment will be reviewed to ensure it fully considers the future restrictions on navigation access for all types of vessels that would result following construction of the proposed scheme.
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12. Can there be more direct engagement with residents of Crichton Street, Clyde Street and the Cross House?	Meetings with the residents of Crichton Street, Clyde Street and the Cross House will be arranged as part of the next consultation event.

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Many homes and businesses in Millport are at risk of flooding from the sea. North Ayrshire Council is developing the Millport Coastal Flood Protection Scheme with close community involvement. In our continued commitment to help people improve their lives on Great Cumbrae, North Ayrshire Council is developing a flood protection scheme to reduce this risk.

A Scheme Recommendation Report has been prepared which sets out the preferred way forward for the coastal flood protection scheme. This consultation event presents the preferred scheme and discusses the landscape design requirements for the onshore flood walls that are needed as part of the scheme.

Further consultation will be held following Council approval of a preferred scheme, and that future consultation will cover issues related to the construction process.

Additional information about the coastal flood protection scheme proposals is available on the North Ayrshire Council website: www.north-ayrshire.gov.uk/flooding. Information will also be provided during a public exhibition and workshops to be held at the Garrison in Millport on 12th and 13th February 2019, and student consultation on 14th February 2019.

This questionnaire gives you the opportunity to express your views about the recommended scheme. Please complete as much of the questionnaire as you wish. Your views will be taken into account in the development of the scheme design, and we will provide feedback on how this has been done.

Completed questionnaires should be returned to the Garrison House (library information desk) or posted to North Ayrshire Council at the address below, before 7th March 2019.

Privacy statement

We will only process your personal information provided in this questionnaire to contact you if you have expressly stated you wish to be contacted.

Your personal data will be stored securely, in line with the Council's policies, and only held for as long as is necessary.

If you would like to find out more on how we manage your data, please visit:

<https://www.north-ayrshire.gov.uk/privacy-policy.aspx>

The questionnaire can also be completed online, via the North Ayrshire Council website:

www.north-ayrshire.gov.uk/flooding.

Thank you for your time and input. We will keep people informed about the development of the flood protection scheme using newsletters and the North Ayrshire Council website.

For any immediate questions please contact:

North Ayrshire Council: Cunninghame House,
Irvine, KA12 8EE

Contact: Patricia Rowley

Tel: (01294) 310000

Email: millportcoastalfps@north-ayrshire.gov.uk

Royal HaskoningDHV: Rightwell House, Bretton,
Peterborough, PE3 8DW

Contact: Amy Savage

Tel: (01733) 336522

Your contact details

If you would like North Ayrshire to keep you updated on the flood protection scheme proposals please tick here.	
If you would like North Ayrshire Council to contact you regarding your response to this questionnaire please tick here.	

Please provide your name and contact information in order for us to contact you.

Name:			
Address:			
Telephone:			
Email:			
Are you willing for North Ayrshire Council to retain your contact details in order to contact you regarding this response and/or the flood protection scheme proposals? Contact details will not be used for any other purpose.	YES		
	NO		

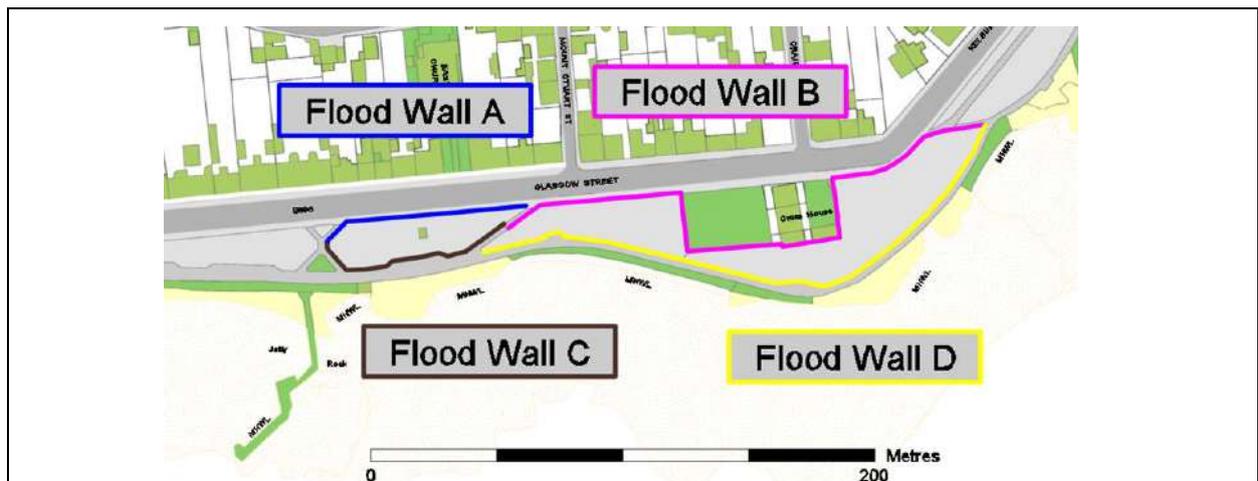
Interest

What is your particular interest in Millport seafront?							
Local Resident		Local Business		Non-resident property owner		Harbour user	
Regular visitor		Occasional visitor		Other:			

Preferred Option

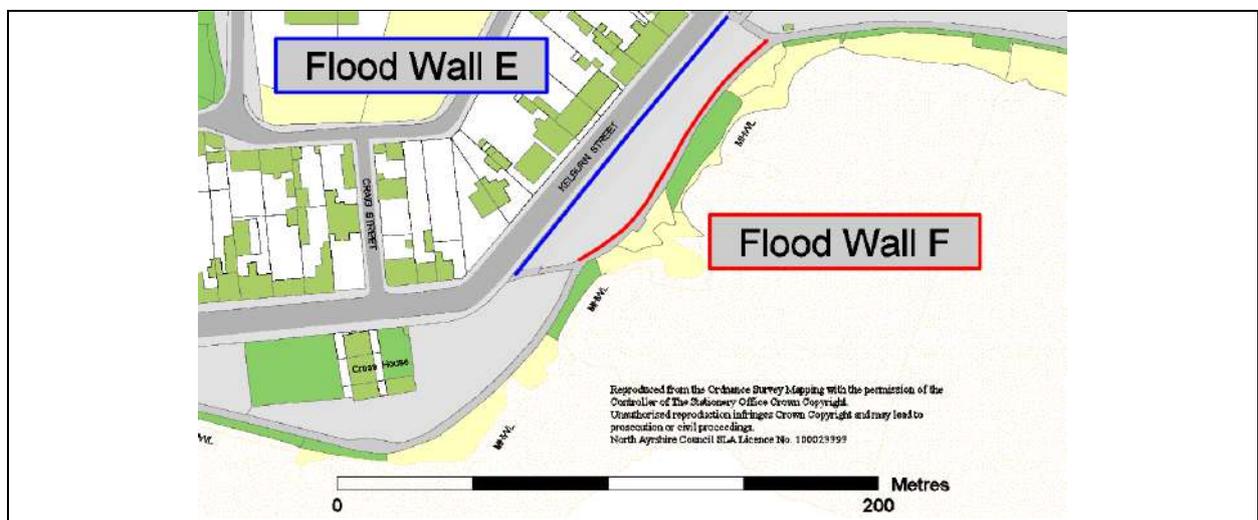
Do you understand and accept the reasons for selection of the preferred scheme option (Option 2 – offshore breakwater with onshore flood walls)?	
I understand and accept the reasons for selection of this option.	
I do not fully understand the reasons for selection of this option.	

Alignment of walls on Glasgow Street



The flood wall should be located next to the footpath (Flood Walls A and B).	
The flood wall should be located next to the promenade (Flood Walls C and D).	
The flood wall should be located on a different alignment within the grass area (in between Walls A/B and Walls C/D).	
Other comments about Glasgow Street wall alignment:	

Alignment of flood wall on Kelburn Street



The flood wall along Kelburn Street should be located next to the footpath (Flood Wall E).	
The flood wall along Kelburn Street should be located next to the promenade (Flood Wall F).	
The flood wall should be located on a different alignment within the grass area (between Wall E and Wall F).	
Other comments about Kelburn Street wall alignment:	

Access

Access should be provided between the road and the promenade/beach at similar locations to existing access points (a plan is provided with the printed questionnaire and on the North Ayrshire Flooding website).	YES
Please state where any additional access points to the promenade/beach are needed, and the reasons they are needed. You can also mark these on the plan	
Any other comments about access between the street and the promenade/beach:	

Materials for flood walls

Flood walls are required are part of the scheme. The flood walls will be built with a concrete core but could be different shapes and various surface finishes could be used. Please refer to the exhibition material for information on the alternatives.

Please provide any comments that you have on the shape, materials or surface finishes of the flood walls.
--

Improving the seafront area

Are there any other issues relating to the sea front area which might be addressed alongside the flood protection scheme? Please note that funding may not be available for additional works. For example; seating, lighting, surfacing, access or amenity improvements.

Consultation Process

The Council wishes to continually improve, so we would appreciate your comments on this consultation process to benefit future exercises like this one.

Was the consultation adequately advertised?	YES	NO
Has enough information been provided to explain the proposals?	YES	NO
Is there any other information that should be provided about the Flood Protection Scheme proposals?		
Do you have any questions that have not yet been answered? Please note that there will be further consultation that will focus on the construction process.		

Did you attend one of the design workshop sessions?	YES	NO
If you attended a design workshop, were you able to contribute to the discussions and provide your comments on the proposed onshore works?	YES	NO
Please provide any comments that you have on the design workshop sessions:		
Did you see the video visualisation of the outline scheme proposals?	YES	NO
Did the visualisation help you to understand the scheme proposals?	YES	NO
Do you have any comments on the video visualisation?		
Have you had an adequate opportunity to express your views?	YES	NO
Do you have any other comments on the consultation process?		

REPORT

Millport Coastal Flood Protection Scheme: Environmental Statement

Appendix 3.3 Public Meetings

Client: North Ayrshire Council

Reference: PB4749-RHD-ZZ-XX-RP-Z-0003.3

Status: Final/F01

Date: 31 January 2020

Minutes

HaskoningDHV UK Ltd.
Water

Present: See attached attendance list
Apologies: George Hunter (NAC, Senior Manager - Tourism & Coastal Economy)
From: Amy Savage/Patricia Rowley
Date: 16 August 2016
Location: Garrison House, Millport

Our reference: WATPB4749M003D02
Classification: Project related
Enclosures:

Subject: Millport Coastal Flood Protection Scheme (FPS) - Harbour Users Meeting

Action

Note: These minutes primarily report the comments of the Millport harbour users (HU) on the current proposals for the Millport Coastal FPS.

Responses to questions or comments by North Ayrshire Council (NAC) and their consultants Royal HaskoningDHV (RHDHV) are shown in italics.

1 Introductions

Sharon Hagan (HU) introduced the meeting from the perspective of the harbour users, commenting on the first newsletter and the initial reaction to this.

Patricia Rowley (NAC) introduced the scheme and its current status from the perspective of the Council, in the context of the Local Flood Risk Management Plan. The scheme proposals provide the opportunity to protect Millport from flooding and attract 80% funding from the Scottish Government.

Amy Savage (RHDHV) provided background to the development of the project and the current phase of design development work.

2 Comments on Newsletter 1 and Communication about the scheme

The newsletter wasn't received directly by many Harbour Users. Alastair Chisholm passed copies onto various people. Information about the scheme wasn't provided in the local newspaper and copies weren't provided in the local shops (HU).

It was recognised that newsletters were hand-delivered to all the properties in the scheme area. However it didn't get to every property of the town.

It was felt by the local community that NAC should have made contact with local people earlier in the scheme development. Harbour Users indicated that NAC seem to take a 'parental approach' to consultation with the community in Millport. There is a need to engage directly with the people that have local knowledge, and do this sooner. The people on the ground who have the local

knowledge should be used to understand what the issues are and help provide information about the scheme.

It was explained by both NAC and RHDHV that it is difficult to find the balance between communicating too early on possible schemes and raising expectation of the community while the feasibility, justification and funding is not clear. It is in the Council's best interests to develop the scheme with full support of the community and this can only be achieved with close working relationship with the residents.

3 Flood risk

90% of the regular flooding in Millport happens because when sea water overtops the existing shoreline or defences and water can't get back out to sea. Drains back up and there is nowhere for the water to go. It is suggested by the residents that surface water drainage network from further inland is mostly blocked and many non-return valves at the seaward end are missing.

There was a suggestion that Scottish Water surface water drainage pipes were replaced recently with smaller capacity pipes and there is a feeling that this has caused problems.

One property on Crichton St that has flooded twice in the last 3 years and then not for more than 20 years before that. This is the part of Millport at most risk of direct flooding from waves rather than because of water not being able to get back out to sea.

The residents were reassured by the Council that the drainage design behind any potential flood wall is part of the scheme.

Meeting attendees recognised the need for a FPS. It is also recognised that now that there is the money available to provide flood protection there is a potential opportunity to make other improvements to the seafront area.

The Council understand that the residents have many objectives and aspirations for Millport Town, however the current scope and funding is for delivering the Flood Protection Scheme and additional funding is not available at the moment for other projects.

4 Millport Pier & proposed breakwater extension

The local residents expressed concern that the proposed breakwater extension to the pier is too close to the shore. If there is a slight swell boats won't be able to get in past the breakwater. Small vessels coming ashore are at risk of being caught on a swell and washed inshore, forced into the sea wall with no safe haven.

It was a concern that the breakwater extension proposals potentially risk increased siltation of the inner harbour. This could mean ongoing maintenance would be needed to dredge the inshore area.

Concern was raised on the risk of rock armour dislodging from the breakwater and washing inshore and who would take on the maintenance responsibilities?

The Council will take the maintenance responsibilities of the scheme.

It was a strong opinion shared by all harbour users that the pier has to be useable. Access is a critical issue - must retain access to and from the pier. Vessels over 100 tonnes can't currently land at the pier – no access at low water at the moment. There was a concern about one set of steps and access from the other is restricted by discarded materials on the sea bed.

Concerns were raised regarding the visual impact of the proposed breakwater extension to the masonry pier – at the moment you can see through the existing timber part of the pier.

The community will be consulted about technically feasible proposals that may have a visual impact.

Clarification was required on whether the removal of the timber pier is part of the scheme plans. The main issue relating to the timber pier seems to be the costs to NAC for repair and maintenance.

NAC highlighted that funding is being made available for a Flood Protection Scheme and not harbour improvements.

NAC clarified that the scheme proposals currently include for removal of the timber section of the pier. NAC also confirmed that an assessment of the options for redevelopment of Millport Pier was completed in 2014. The cost for refurbishment of the existing pier (timber and masonry sections) would be around £2 million. Funding was not available to progress any of the options for redevelopment of the pier so these proposals so they have not progressed. Based on this report, and public H&S considerations, and due to the deterioration of the structure NAC made the decision that the preferred approach to management of Millport Pier was to remove the timber section.

Concerns were raised that this decision had not been made public.

The February 2014 Cabinet paper (which is publicly available through the Council's website) includes the decision on the proposed demolition of the wooden part of the pier.

5 Alternatives to proposed breakwater extension to the pier

An alternative breakwater solution was suggested by the community, comprising an offshore breakwater between the Leug and the Spoig rock outcrops located offshore in Millport Bay. This solution would break the SW swell further out. It would also act to divert tidal currents into the harbour and potentially 'naturally dredge' the harbour. The area between the Leug and the Spoig is currently a navigation risk. A breakwater here would remove this risk. An offshore breakwater could also provide some protection to the pier and reduce maintenance costs. The harbour users anticipated that the height of an offshore breakwater option could be less than an extension to the pier with less visual impact. Offshore construction would mean the pier would not need to be closed during construction. The visitor moorings would be more useable (the ideal situation would be for Millport to be a safe haven where vessels can berth if the weather is bad).

All attendees were generally happy with the alternative proposal of an offshore breakwater between the Leug and Spoig.

NAC highlighted that funding is being made available for a Flood Protection Scheme and not harbour improvements. If the FPS involved construction of a breakwater further offshore, instead of an extension to the existing pier, it would require strong justification on flood protection grounds to justify improvements to the pier as part of the Scottish Government funding for the FPS.

Since that time topographic and bathymetric surveys have been completed and we have reviewed the wave conditions in Millport Bay. This information has shown that it may be possible to provide flood protection by constructing an offshore breakwater located further offshore in Millport Bay than had previously been considered viable.

It was suggested that if an offshore breakwater was not possible for any reason, another potential alternative would be to replace the timber section with a solid form of construction, e.g. vertical wall on landward face, armoured on seaward side.

An alternative more extensive breakwater option was tabled by letter from Ross Goldie of DRG Offshore Engineering Services.

Concerns were raised by meeting attendees regarding the proposal within this for a breakwater across West Bay to the Leug. West Bay is not greatly at risk, it is sheltered from storms from the west, only at risk from waves from due south.

6 Other issues with the FPS proposals

Risk of litter collecting behind the walls.

Risk of flooding to Cross House – wall shown on the landward side of this building. However, it was pointed out that Cross House is not known to have been flooded. The residents felt that the area between Cross House and Mount Stuart Street does not flood, nor between East Church and The Tavern to the west.

NAC/RHDHV confirmed that the required extent of the flood walls is being reviewed, and the intention is that the scheme would not be over designed.

Good access needs to be maintained between the beach and the shops.

Concerns were raised about what will happen during construction of the scheme, e.g. how will materials be delivered, when will the work be carried out and how will it affect tourism. Can the goal be set of zero negative impact on tourism?

Need to limit the impact of the works on tourism and transport, including minimising the length of time that the pier is closed for.

RHDHV and the Council representatives reassured the residents that the construction stage will be carefully planned to minimise disruption for tourism and transport, however due to the scale, extent and duration there will be

inevitable some disruption. This could be managed with good communication and awareness raising of the project.

The condition of the sea wall fronting Stuart Street was questioned (pier to crazy golf, constructed 1929). Minor storms lift the surface of the road in this area.

NAC/RHDHV confirmed that there did not appear to be any issues with the condition of this wall. There has been little change in condition in the past 10-12 years.

Residents want to minimise the amount of 'walling in'. It was recognised that a breakwater could help with this.

The priority of different aspects in the appraisal of the FPS was questioned, i.e. does reduction in flood risk take priority over e.g. appearance and impact on the conservation area. Would the scheme proposals be looked on more leniently in terms of visual appearance and impacts on the conservation area because it is a FPS?

NAC confirmed that all of these issues have to be considered and are taken into account in the approvals process for the scheme, which includes statutory consultation in the same way as planning consent for any development in the conservation area. The recent Water of Leith FPS was given as an example – the appearance of the proposed flood protection structures is a critical part of the design and key to its approval. Visualisations of the proposed structures for the Millport Coastal FPS will be provided.

Millers Thumb used to have a marker pole which needs to be replaced, also needed on the Leug and Spoig to avoid navigation problems by sailors who don't know the waters.

NAC/RHDHV confirmed that the brief for development of the scheme includes looking at the issues for the pier.

More yachts and motor boats coming into Millport would mean more staying visitors – spend more money than just ice creams. Millport is potentially a fabulous place for small boats, but at the moment there are a lot of little problems that are preventing this.

The FPS can have both a positive and negative economic impact on the area. Need to make sure that there is joined up thinking about this.

NAC confirmed that NAC's regeneration team are involved in the development of the scheme, but development proposals may require additional funding which is currently not available.

If the FPS proposals didn't include works to the pier, would NAC support the community in looking for other grants? The UK Coastal Communities Fund was identified as a possible source of funding.

This is another area where NAC's the regeneration team can help.

7 Future engagement

The Harbour Users opinion is that every house in Millport should get information about the scheme. Various attendees are willing to help to deliver newsletters.

It was pointed out that mass mailing to the whole town via the post office shouldn't be very expensive.

Proactive communication using the local newspaper has suggested.

Encourage the point that it is the people of Millport who are driving the development of the scheme.

Don't just communicate via the Council's website - need to recognise that there are many people in Millport who don't use the computer, however the proposal of a dedicated website for the scheme is welcomed.

Use the noticeboards in the centre of town.

Make newsletters available in the local shops – as many as possible.

Lots of communication is very important. Don't want things to happen that the community don't know about.

The community want to see models/ visualisations of the proposals at an early stage in the consultation process.

8 Concluding remarks

'We want to do the best for the island.'

'Millport used to have a good breakwater that was also a pier – would like to have this again.'

The FPS and the issues with the pier can't be exclusive.'

'We need a flood Protection scheme.'

'We've got one chance to do this right.'

9 Immediate Actions

NAC will develop a dedicated website for the Millport Coastal FPS.

NAC

NAC and RHDHV will take the questions raised during this meeting and provide responses to them in a 'Frequently Asked Questions' document, which will be made available on the Millport FPS website.

**RHDHV /
NAC**

The next newsletter is being prepared, taking into account the discussions at his meeting. This newsletter will be issued before the end of September 2016.

**RHDHV /
NAC**

10 Comments subsequent to the meeting

We can confirm that the gully wagon completed cleaning the road gullies in Millport in the beginning of September 2016.

The Council will consider all suggestions and will work with the Council's Communications Team, Communities Team and local community to ensure that all affected residents have access to the latest scheme information.

Harbour Users Meeting

16 August 2016

Garrison House, Millport Great Cumbrae

Present:

Local Harbour Users

SARON HAGAN

DEREK HAGAN

STEWART MCINTYRE

COLIN BROWN

Robert Paterson

TOM STEVENSON (FSC Scotland)

ALEX FORREST

* SUSAN FORREST

STEPHEN McLUCKAN

Donald Patrick

ALASTAIR MACNEIL

HAMISH BROWN

- Arthur Cowley, NAC Harbour Master

- Patricia Rowley Flooding Officer ✓

- Amy Savage Project Manager for the Millport Coastal FPS (from Royal Haskoning DHV) ✓

Lynn MacLaren

- Local Community Council Mrs MacCulloch

- George Hunter, NAC Senior Manager (Tourism & Coastal Economy)

- Michael Bertram (CCDC) ✓

- Colin Brown from The Crown Estate

Visitor

Andrew Bell

Phil Lonsdale

Graham Wallace

Andrew Cook

Christine MacCulloch

JIM BEVAN

Alastair Chisholm
BOB CAMPBELL

Scott Hagan

Tom ELDER

Anne Brown

Action Note - North Ayrshire Council – Roads Service

Meeting:	Millport Marina Focus Group
Date/Venue:	Mon 4/12/17 14:00 at Cunninghame House, Irvine
Present:	(chair) Russell McCutcheon
In Attendance:	Cllrs Murdoch, Gallagher, Hill and Marshall, Graham Wallace, Derek Hagan, Phil Lonsdale, Michael Bertram, Audrey Sutton, George Hunter, Arthur Cowley, Patricia Rowley, Martin Latimer, Ian Maclachlan
Apologies:	

ACTIONS

No.	Subject	Action
1.	<p>Background – Russell McCutcheon summarised the background to the flood protection scheme and noted that there were previously 2 options which are the breakwater extending from the masonry pier at the harbour and offshore breakwaters. Russell also pointed out that the flood protection involves onshore works including the construction of seawalls.</p> <p>Russell indicated that the ground investigation has indicated that large amounts of sediment removal will be required for the breakwater extending from the masonry pier and that costs for this option have risen dramatically as a result. There are also environmental issues around a large amount of sediment removal and investigations into the acceptability of this option are now ongoing.</p> <p>Russell noted that a petition to save the timber pier had been launched and that the petition had been presented to Cabinet at the meeting of 14 November 2017.</p>	
2.	<p>Outcome of Cabinet meeting on 14 November 2017 – this was discussed and it was confirmed that Royal Haskoning DHV are modelling an additional option which involves a replacement pier (utilising construction materials with a longer life expectancy and lower maintenance liability than timber) plus whatever offshore breakwaters are required to provide the required level of flood protection. It is expected that the offshore breakwaters from this option will provide sufficient shelter for an inshore marina similar to that highlighted in the modelling of the other offshore breakwater option.</p>	
3.	<p>Marina Study – Martin Latimer spoke on behalf of a marina development and noted that it would not be a viable option without the construction of offshore breakwaters for the flood protection scheme. Martin also noted that the final design of a marina development was flexible and that the viability of proposals would need to be tested.</p> <p>Martin also made mention of the difference that a marina development had made to Tobermory where he stated that improvements, including the provision of step ashore facilities, has rejuvenated business in the town due to an expansion of marine visitors.</p> <p>Martin indicated that he will have an expanded marina update by the next meeting.</p> <p>George Hunter spoke about the Ayrshire Growth Deal, the importance of the development of marine tourism within the area and the economic</p>	

Action Note - North Ayrshire Council – Roads Service

	development/benefit attaching to marine tourism growth and the possible future opportunities for marina development, particularly in fragile economies/communities.	
4.	<p>IKM proposals for short term repairs to existing timber pier – Ian Maclachlan of IKM Consulting spoke about proposals to refurbish the existing timber pier for a design life of 5 to 6 years at a cost of £420k plus ongoing maintenance costs estimated to be in the region of £60k per annum.</p> <p>Ian described how repairs might be undertaken and he highlighted some of the issues causing deterioration of the existing timber pier.</p> <p>An assumption of the cost of addressing issues with necking to the timber piles is allowed in IKM's estimate. Ian indicated that it was necessary to carry out a diving inspection of the timber pier in order to determine the degree of necking in the timber columns supporting the pier.</p> <p>Following discussion it was considered that the dive survey was considered to be very useful in the development of the Flood Protection Scheme options too and it was agreed that a diving inspection be carried out. The inspection is expected to take place in February or March of 2018.</p> <p>Ian Maclachlan confirmed that he would provide Arthur Cowley with an outline specification. Arthur Cowley indicated that he would ask Phil Lonsdale to review the final specification prior to the dive survey being undertaken.</p> <p>It was suggested that the existing timber pier provides a degree of flood protection to the Stuart Street area and there was concern expressed regarding the potential failure of the pier in storm conditions. In response officers indicated that the pier does not provide flood protection to Millport but may merely lessen the impact of flooding slightly in certain conditions.</p> <p>It should be noted that the cost of short term repairs to the pier are considerable and that there is no budget provision for this work.</p>	
5.	<p>Date of next meeting – provisionally 23 March 2018 but may be delayed if the results of the diving survey are not available.</p>	

Action Note - North Ayrshire Council – Roads Service

Meeting:	Millport Marina Focus Group
Date/Venue:	Wednesday 2/5/18 14:00 at Cunninghame House, Irvine
Present:	(chair) Russell McCutcheon
In Attendance:	Cllr Ian Murdoch, Cllr Alex Gallagher and Cllr Tom Marshall, Audrey Sutton, Graham Wallace, Derek Hagan, Sharon Hagan, Phil Lonsdale, Michael Bertram, Audrey Sutton, George Hunter, Arthur Cowley, Patricia Rowley, Martin Latimer, Ian Maclachlan Dave Williamson
Apologies	Cllr Alan Hill, Phil Lonsdale

ACTIONS

No.	Subject	Action
1.	Minutes of Previous Meeting – No issues re the accuracy of the minutes.	
2.	<p>Update of progress on the flood scheme - Russell McCutcheon opened the discussion with a re-cap on the cabinet meeting of November 2017 and outlined the three options under consideration, the third option being added to include the replacement of the timber pier. It was noted that the estimated cost of all options now ranged from around £27m to around £32m. The current scheme budget is £12.1m and officers from NAC intend to meet officers representing the Scottish Government on 23rd of May in order to inform them of the cost increase and seek confirmation that NAC should continue to develop the scheme. Russell McCutcheon indicated that he was hopeful of a positive outcome from that enquiry.</p> <p>NAC are awaiting a Scheme Recommendation Report, which is due by 11th May, and the recommendation will be made on the basis of technical, health and safety, environmental and economic criteria. Following this a report will go to cabinet seeking their approval of the recommendation and the increased cost estimate for the flood protection scheme.</p> <p>Russell McCutcheon highlighted that NAC are considering the community's aspirations for tourism development by including both options 2 and 3 where the offshore breakwater is the essential part of a scheme which would make a marina development feasible from the perspective of reducing wave height to an acceptable level.</p> <p>A number of concerns were raised by community members and their representatives regarding the estimated cost of the scheme. It was felt that the increase in the cost estimate was unjustified when compared to their own estimates and that this could potentially put the scheme in jeopardy.</p> <p>Russell McCutcheon noted that the determining factor in the cost would be the tender price and that the estimate may appear high due to contingencies included in all three options, however the actual cost would be determined by the tender. Community representatives indicated that they had concerns that the large budget would be public knowledge and would influence tender submissions and drive the cost upwards towards the estimate.</p> <p>AC noted that Royal Haskoning DHV had been asked to justify their estimate in</p>	<p>NAC</p> <p>NAC</p>

Action Note - North Ayrshire Council – Roads Service

	<p>view of previous concerns and that they had confirmed that they felt that their estimate was robust and that contingencies had been applied consistently across all three options. It was felt unnecessary by NAC officers that an alternative estimate be sought.</p> <p>It was also mentioned that a substantial contingency included at this early stage could be revised once the project reached the final design stage.</p> <p>Russell McCutcheon noted that option 2 doesn't require the retention of the timber pier and referenced the community aspiration for it to be reinstated. This could become a separate issue with alternative funding being sought in order to bring it back into use. It was noted by community representatives that they had been investigating possibilities around alternative funding sources. Notwithstanding this it is the case that any flood protection scheme is likely to take some years to complete.</p> <p>At the planned meeting with the Scottish Government, NAC officers will seek guidance about what choice there is to opt for something other than the most cost effective option and it will also be highlighted that community groups are exploring funding sources for pier regeneration.</p>	NAC
3.	<p>Public Consultation for the Flood Protection Scheme</p> <p>Consultation Event Dates for Monday 23 and Tuesday 24 July 2018 were agreed</p> <p>Two dates were proposed for a second consultation after the summer recess and the dates put forward were;</p> <p>Provisional 21&22 August 2018 with a school consultation on the 24th or (Tues, Wed & Friday). This was not considered suitable</p> <p>Alternative dates of 10-11 September were provisionally agreed with the proviso that weekend consultation be included. The 9th September was noted as a possible date but this needs to be confirmed with Royal Haskoning DHV.</p> <p>The location was agreed as the DA Hall Millport, Great Cumbrae and it was also agreed that the event would be advertised. A public notice will be issued around 26th June and posters will be put in local shops 10 days before the event. A press release will be made 1 week before the public event. The consultation will also be advertised on Social media Twitter/Facebook and also the NAC website.</p> <p>There was a discussion about the need for a mailshot, which is expected to cost around £1,500, and it was agreed that a mailshot would be carried out.</p> <p>Special invitations/notifications for the consultation were agreed for: Elected Members (4) Community Council Members (4) Locality Coordinators (Carol Ann Hughes) Cumbrae Estate Nicholas Wright _Cumbrae Properties – Mount Stuart Trust Statutory Undertakers</p>	<p>NAC</p> <p>NAC</p> <p>NAC</p> <p>NAC</p>

Action Note - North Ayrshire Council – Roads Service

	<p>With regard to consultation feedback it was agreed that: Paper and online questionnaire from website will be made available; Paper questionnaires are to be collected in Garrison House Library via a drop box; The consultation questionnaire summary is to be published on NAC Website 2-3 weeks after public consultation closes around mid-October 2018.</p>	NAC
4.	<p>Dive Survey Report</p> <p>Arthur Cowley commented that the SWECO report into the condition of the timber piles noted that they were in poor condition with <i>'...almost every pile affected by some degree of necking close to the seabed.'</i> Also that <i>'... the bottom tier of lateral bracing was heavily affected by rot and decay, causing significant loss and failure of bracing members.'</i></p> <p>The SWECO report concluded that <i>'The primary conclusions of the inspection were that the pier will have a reduced vertical and lateral structural capacity.'</i> that <i>'It is recommended that the pier remain closed to all users until the pier is demolished or strengthening works are carried out.'</i></p> <p><i>'Remedial works to the timber pier to restore it to full functionality are likely to be complex and difficult to carry out. Repairs to the timber piling to negate the effect of the necking would be required. In addition, all connections would need to be checked for structural integrity, and all rotten or decayed timber would need to be repaired or replaced.'</i></p> <p><i>'In order to help decide the most effective way to achieve this it is recommended that a full structural assessment of the pier be undertaken. This can then be used as the basis for a feasibility study into the available options for remedial works.'</i></p> <p>Ian Maclachlan of IKM Consulting stated that the SWECO report indicated that the condition of the pier was better than that which he had assumed when he made proposals for repairs in late 2017. He indicated that he felt that the cost of repairs might be reduced and that the £70k suggested cost of a full structural assessment would be better spent on repairs than on the assessment.</p> <p>Arthur Cowley stated that if the pier were to be brought back into public use then it was the responsibility of the Council to ensure the capacity and safety of the structure and that an assessment would be required to achieve this. The age and current condition of the structure is such that major repairs are required and there would need to be confidence that the repairs generated the required load capacity and protected the safety of pier users.</p> <p>Ian Maclachlan made reference to a quotation received from GSS and suggested that they have indicated that repairs may cost in the region of £236k. However, Arthur Cowley questioned whether labour costs of £160k were included in that figure.</p> <p>It was agreed that a further discussion on the repair options and cost would be held between Arthur Cowley and Ian Maclachlan.</p> <p>It was noted that the cost of short term repairs to the pier are considerable and</p>	NAC/ IKM

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	that there is no budget provision for this work.	
5.	<p>Marina Options</p> <p>A brief update was given by Martin Lattimer who noted that his report was nearing finalisation and would be issued soon. Martin commented that Millport was the only logical location for a marina on the island and that the construction of an offshore breakwater was essential to make a marina development feasible.</p>	
6.	<p>Next Steps</p> <p>Russell McCutcheon summed up by stating that options 1 and 3 involved the replacement of the pier, either with a breakwater with a possible concrete deck in the case of option 1 or with a new pier constructed from steel or concrete in the case of option 3. Option 2 would not involve replacement of the pier. Both options 2 and 3 would involve an offshore breakwater, which is essential for the potential development of a marina.</p> <p>The next steps are:</p> <ul style="list-style-type: none"> • NAC officers will meet with officials from the Scottish Government and discuss the increase in the scheme estimate and to try and establish what flexibility there is around choosing an option that possibly isn't the most cost effective; • The Scheme Recommendation Report will be received from Royal Haskoning DHV; • NAC will discuss temporary pier improvement options with IKM; • A report is planned for cabinet on 19th June 2018 at which approval will be sought for a preferred option based upon criteria relating to technical/ flood protection capabilities; health and safety; environmental issues; economic benefits and constraints ie the cost benefit ratio and the availability of funding. • Consultation on the preferred flood protection option will take place over two events in July and September with a view to maximising opportunities for the community to comment on the proposals. 	<p>NAC</p> <p>RHDHV</p> <p>NAC/IKM</p> <p>NAC</p> <p>NAC</p>
7.	<p>Date of next meeting</p> <p>A future meeting will be arranged at a convenient time shortly after the cabinet meeting on 19th June.</p>	NAC
8.	<p>Post Meeting Update</p> <p>Following the meeting with the Scottish Government on Wednesday 23rd of May the Scottish Government confirmed that funding for flood protection could not be used to finance any element that was not flood protection, ie regeneration or replacement of the timber pier.</p> <p>In addition the Scottish Government indicated that, due to the large increase in</p>	

Action Note - North Ayrshire Council – Roads Service

	<p>the scheme estimate, they wished to scrutinise the proposals prior to confirming their position regarding funding for the scheme.</p> <p>As a result of this the Cabinet paper making a scheme recommendation, planned for 19th of June, was postponed and the scheme recommendation will be brought back to Cabinet later in the year, hopefully at the first Cabinet meeting after the summer recess, which will be September.</p> <p>Given that Cabinet will not be making a decision on the proposed scheme until September at the earliest, the proposed consultation will be delayed and will probably take place in the Autumn.</p> <p>Following the meeting a proposal for limited repairs to the timber pier was received from IKM. This is still under consideration.</p>	
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Action Note - North Ayrshire Council – Roads Service

Meeting:	Millport Marina Focus Group	
Date/Venue:	Wednesday 17/01/19 14:00 at Cunninghame House, Irvine	
Present:	(chair) Russell McCutcheon	
In Attendance:	Cllr Alan Hill, Cllr Alex Gallagher, Audrey Sutton, Graham Wallace, Derek Hagan, Sharon Hagan, Phil Lonsdale, Michael Bertram, Audrey Sutton, Kathleen Dow, Patricia Rowley	
Apologies	Cllr Tom Marshall, Cllr Ian Murdoch, George Hunter and Martin Miller	
ACTIONS		
No.	Subject	Action
1.	Minutes of Previous Meeting – No issues re the accuracy of the minutes.	
2.	<p>Update of progress on the flood scheme - Russell McCutcheon summarised the three options explored to assist in the appraisal of potential designs. The three potential design solutions have been developed and are outlined in a comprehensive Scheme Recommendation Report with a recommendation for Option 2.</p> <p>The increased cost for all three options prompted a series of discussions with Scottish Government regarding the affordability and viability of the scheme. A technical report was submitted to Scottish Government presenting further technical clarifications and sensitivity tests to justify the scheme. On 18 October 2018 Scottish Government after scrutinising the proposals confirmed that, based on the technical report submitted they are satisfied that the proposed scheme continues to be eligible for funding.</p> <p>Scottish Government also confirmed that “Grant only covers cost directly associated with flood protection works.” This means that the regeneration of the timber pier cannot be financed from flood protection funding.</p> <p>A report has been prepared for the 11 December Cabinet with a recommendation to proceed with Option 2, an offshore breakwater connecting up two small islands in Millport Bay plus onshore flood walls, which was agreed.</p> <p>The progression of Option 2 (offshore breakwaters) will support the Ayrshire Growth Deal bid for Marine Tourism by providing a sheltered inner harbour environment at Millport that could allow for the future development of a community marina. This would allow Millport to capitalise on its potential as a stopping off point for visiting yachts, supporting the local tourism economy. The Council’s Tourism and Coastal Economy officers have been working to develop a proposal in support of step ashore facilities at Millport. The breakwater would be a key step towards this aspiration.</p> <p>The community members welcomed the Cabinet decision and they felt that the chosen option will allow their aspirations requiring on tourism and regeneration to be achieved.</p>	

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	Russell McCutcheon confirmed that the sum set aside to the pier demolition is taken out of the Flood Protection budget and its spending will need further discussion with the Group.	
3.	<p>Public Consultation for the Flood Protection Scheme</p> <p>Community consultation event is arranged for 12-13 February 2019 to update the community on the progress of the scheme. Student Consultation will follow on the 14 February with the involvement of Largs Academy Students.</p> <p>The community design workshop sessions will focus on the onshore works that are required as part of the scheme. The location, appearance, landscaping and access needs for the flood walls and other structures will be discussed.</p> <p>The location was agreed as the Garrison House, Millport, Great Cumbrae and it was also agreed how the event would be advertised. A public notice and press release will be issued around 30 January and posters will be put in local shops at the same time. The consultation will also be advertised on Social media Twitter/Facebook and also the NAC website. Q&A will be prepared and video visualisation of the proposal will be shown at the consultation to help envisage the appearance of the scheme.</p> <p>There was a discussion about the need for a mailshot, which is expected to cost around £1,500, and it was agreed that a mailshot would be carried out.</p> <p>Special invitations/notifications for the consultation were agreed for: Elected Members (4) Community Council Members (4) Locality Coordinators (Carol Ann Hughes) Cumbrae Estate Nicholas Wright _Cumbrae Properties – Mount Stuart Trust Statutory Undertakers</p> <p>With regard to consultation feedback it was agreed that: Paper and online questionnaire from website will be made available; Paper questionnaires are to be collected in Garrison House Library via a drop box; Following the consultation, all comments on the scheme should be submitted by 7 March. The questionnaire summary is to be discussed in the next meeting.</p> <p>The community members agreed with the Consultation strategy and offered to help distributing posters and forwarding information of the consultation via social media.</p> <p>Phil Lonsdale asked for copies of the video on dvd to be able to show groups who are not familiar or have access to computers. Also he offered the Community Group post box for collecting feedback of the consultation and to transfer it to the library for end collection. Michael Bertram offered to put the video visualisation on the Garrison House screen. He also asked that the project team review Blackpool and Sunderland coastal schemes in the search for aesthetic solutions.</p>	<p>NAC</p> <p>NAC</p> <p>NAC</p> <p>NAC</p> <p>MMWG</p>

Action Note - North Ayrshire Council – Roads Service

4.	<p>Ayrshire Growth Deal</p> <p>The Tourism & Coastal Economy Team have commissioned Blue Sea Consulting Ltd to work with the harbour user group and community representatives to undertake a preliminary Millport marina feasibility and options appraisal study.</p> <p>This study outlines a suggested marina layout with indicative costs and recommendations for operations and phased development.</p> <p>The Millport Marina proposal is one of several marine tourism infrastructure projects submitted under the Ayrshire Growth Deal proposals.</p> <p>Broad terms for the Ayrshire Growth Deal proposals have been agreed, though details and an announcement is still to be confirmed. NAC CEO met with East and South Ayrshire colleagues with the UK Government on 16th January to progress the deal. The Scottish Government is in support of the Ayrshire Growth Deal proposals.</p> <p>Officers from the Tourism Team will carry out further consultation with the Millport community and harbour user group regarding the preliminary marina proposal in partnership with the Flood Defence Team and Connected Communities colleagues on 12/13 February 2019.</p>	NAC/ IKM
5.	<p>Millport Pier</p> <p>The masonry pier refurbishment is due in spring 2019 and Martin Miller will provide a written update of the programme of work and current status.</p> <p>Mr Wallace raised concern of the current condition of the timber pier and the Council's lack of willingness to allocate capital fund for the short term refurbishment. He also worried that storm damage might irreversibly damage the pier while the decision is pending. Cllr Alex Gallagher advised that, while he would like to see the timber pier refurbished, a robust proposal/business case needs to be drawn up for the cabinet to reconsider the matter.</p> <p>Audrey Sutton suggested that NAC would facilitate further discussions with DTAS around a community run marina facility. This was agreed by all. Audrey will contact DTAS to arrange a meeting with the working group.</p>	NAC NAC
6.	<p>Next Steps</p> <p>Russell McCutcheon summed up the meeting and agreed the following:</p> <ul style="list-style-type: none"> • the community feedback after the consultation should be provided to the Harbour User Group • a written update on the masonry pier refurbishment will be provided to the Harbour User Group • Request that Economic Development team review the Port Patrick Marina model • The Economic Development Team will contact DTAS to arrange a meeting with the working group. 	NAC NAC NAC NAC
7.	<p>Date of next meeting</p> <p>A follow up meeting will be arranged as part of the Ayrshire Growth Deal business case as required.</p>	NAC

Action Note - North Ayrshire Council – Roads Service

REPORT

Millport Coastal Flood Protection Scheme: Environmental Statement

Appendix 3.4 Newsletters

Client: North Ayrshire Council

Reference: PB4749-RHD-ZZ-XX-RP-Z-0003.4

Status: Final/F01

Date: 31 January 2020

Millport Coastal Flood Prevention Scheme

Protecting the people of Millport

Improving lives

Many homes and businesses in Millport are at risk of flooding from the sea. In our continued commitment to help people improve their lives on Great Cumbrae, North Ayrshire Council is working with partners to design a flood protection scheme to reduce this risk.

Valuing the community

We value our community in Millport and know that it is important to keep you informed of work that will affect your day to day life. This newsletter is the first step in informing you and understanding your views on the proposed work.

Informing the public

Future newsletters will aim to answer the questions that you ask us. We will also circulate a questionnaire to gauge your opinion and hold two local meetings so you can ask us questions directly.

Listening to you

May 2016: *Design starts*

July 2016: *First newsletter*

August 2016: *Second Newsletter & Questionnaire*

Autumn 2016: *Public Consultation Meeting*

Spring 2017: *Public Consultation Meeting*

Why is the council designing a flood protection scheme?

During storms, south-west winds can drive waves north through the Firth of Clyde into Millport Bay. When a heavy south-west storm combines with a high tide, a lot of properties and businesses in Millport can be flooded. North Ayrshire Council is committed to providing protection to the community of Millport against these events. By providing this protection, we can also help to drive the economic development of Millport.

How will it benefit Millport?

As well as protecting Millport from flooding, this scheme demonstrates our continued investment in the town. We want to help you to develop tourism in Millport and understand that improving the seafront is a crucial for this. The proposed flood protection scheme would create a larger area of sheltered water, which we expect will attract investment into the harbour area and so bring more yachts to the town. With you, we want to investigate how this scheme could improve Millport.

When will it be built?

Subject to approval of funding from both the Scottish Government and North Ayrshire Council there are a number of stages to go through before construction starts (Page 2) but we hope to begin early in 2018. We will do everything we can to make sure the construction work minimises the affect on visitors as well as residents, including considering the timing of the work and how to manage construction traffic and noise. While we design the scheme, there will be ongoing consultation with all key stakeholders to identify



What will the flood protection scheme include?

Your flood protection scheme will include a few different types of protection. Rock armour breakwaters will be designed to reduce the size of waves hitting the sea walls. In other places, flood walls will be built or the height of the sea wall will be increased to stop sea water from reaching the road and buildings. The position of the rock breakwaters will be planned carefully so that we can minimise the size of the flood walls and so maintain your view out to sea whilst protecting you from storms.

Steps in developing the scheme

Design Optimisation

Collecting more information and developing the initial designs. This will include consultation with the public.

Environmental Impact Assessment

Assessing how the project will impact people and the environment.

We are currently working on the steps above.

Flood Protection Scheme

Using all the information gained we will prepare the applications and complete the formal consultation process with government bodies to gain permission to build the scheme.

Detailed design

Developing designs to the detail needed for construction.

Contract documents

Developing legal documentation to make sure the scheme is built properly.

Employing a construction firm and start building

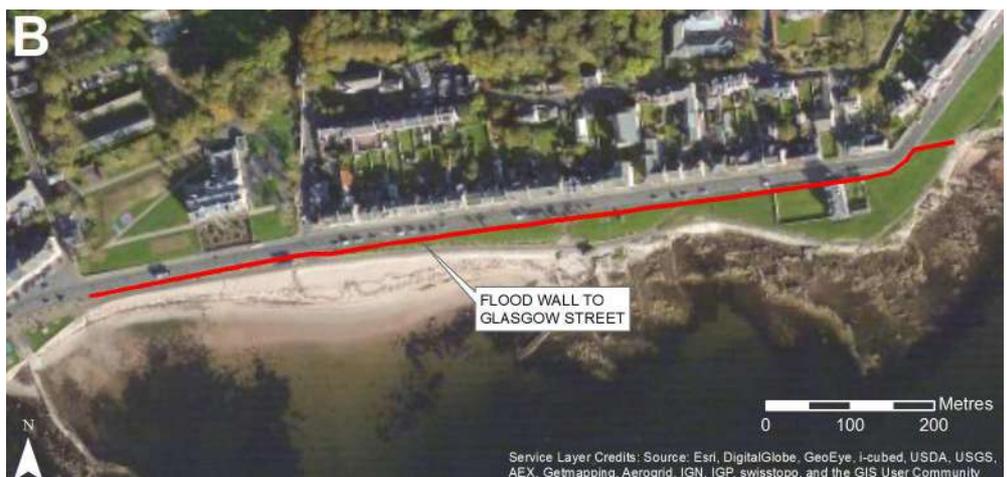
We plan to be at this stage by the beginning of 2018.

A - Extending the pier and protecting houses in the old town



Removing the timber section of the pier, improving the masonry part and extending the pier by building a rock armour breakwater will protect houses along Stuart Street and Guildford Street. This will also create a larger area of sheltered water where boats could be moored. Building smaller rock breakwaters and increasing the height of the sea walls along Millburn and Crichton Streets will protect houses to the south west of the pier. The sea wall improvements are yet to be designed and your opinions will be considered in the design process.

B — Protection to Glasgow Street



To protect houses along Glasgow Street, a low flood wall will need to be built. We expect that this wall will be about 1m high. The exact position and appearance of the wall is yet to be decided and your views and comments will be taken into account.

Contact us:

North Ayrshire Council: Patricia Rowley,
Cunninghame House, Irvine, KA12 8EE Tel. 01294 310000

Royal HaskoningDHV: Amy Savage Rightwell House,
Bretton, Peterborough PE3 8DW Tel. 01733 334455

Answering your questions

In this second newsletter, we answer some of the questions you have asked about the proposed Millport Coastal Flood Protection Scheme and provide more information about the work that we are doing to develop the scheme design.

We are trying to achieve a good balance between the level of protection provided against flooding and maintaining good connectivity between properties and businesses along the seafront and the beach. We need to consider physical and environmental limits on what can be built, such as navigation around Millport Bay, the position of existing infrastructure (e.g. sewer pipes, telephone

cables), and how the natural environment might change. The key focus of the scheme is to provide protection against flooding.

More information about the scheme is available from North Ayrshire Council's website: www.north-ayrshire.gov.uk/flooding.

This includes a 'Frequently Asked Questions' document, which answers the key questions about the scheme that you have asked us so far. A Community Design Workshop is also being arranged for 29 November and 1 December 2016 to gather further feedback to inform the design.

Flood protection to Stuart Street

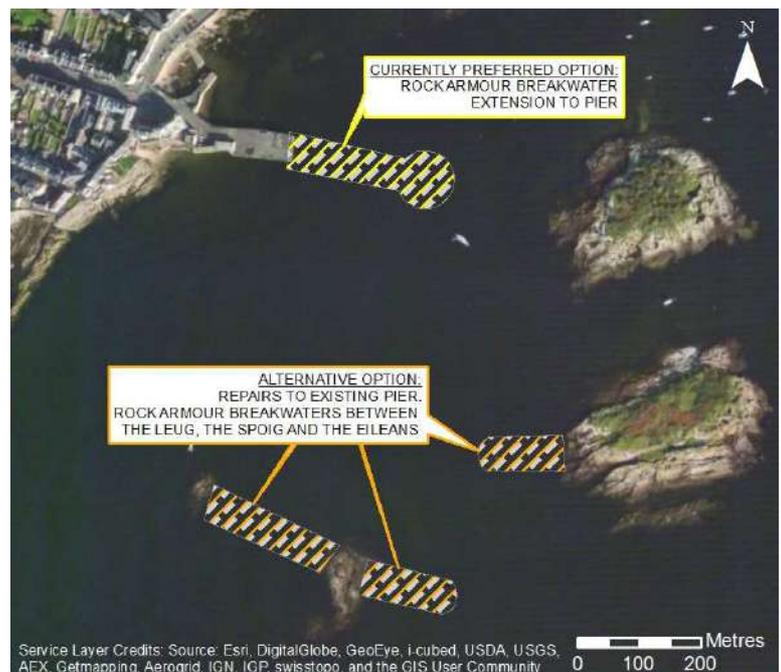
The first newsletter showed a possible layout of the flood protection scheme based on the findings of the initial high-level options appraisal. Since that time, topographic and bathymetric surveys have been completed and we have reviewed the wave conditions in Millport Bay. This information has shown that it may be possible to provide flood protection by constructing an offshore breakwater located further offshore in Millport Bay than had previously been considered viable. We have also met with harbour users to discuss constraints for navigation and access to the pier and opportunities for improving facilities for tourist vessels. The minutes of the meeting are now available on the Council's website. Two potential options being considered are:

Option1 - Breakwater extension to Millport Pier

- Extension to Millport Pier using rock armour
- Alignment and length of breakwater to be designed to optimise flood protection whilst minimising impact on navigation and access
- Removal of timber section of existing pier due to poor condition
- Protecting the seaward face of the existing pier

Option2 - Offshore breakwaters

- Offshore breakwater created by placing rock armour between the Leug and the Spoig, plus short breakwater arms between the Spoig and the Eileans
- Minimise impacts on navigation whilst reducing wave energy reaching Stuart Street sea wall
- Breakwaters positioned in shallow water areas
- This option may not involve any works to the existing pier structure.



Developing the scheme will involve the following steps:-

1. Additional Investigations

Collecting information needed to design the scheme, including wave modelling, geotechnical investigation, consultation

2. Environmental Assessment

Assessing how the project will impact people and the environment, including consultation with relevant organisations

3. Design Optimisation

Confirming requirements / constraints for the scheme, developing initial design

We are currently working on steps

4. Flood Protection Scheme

Prepare applications and formal consultation to gain Scottish Government permission and planning consent to build the scheme

5. Detailed design & contract documents

Developing designs and other documents needed to appoint a specialist construction contractor

6. Start building the scheme

Currently planned for spring 2018

Providing information and

May 2016: *Work on potential design begins*

July 2016: *First newsletter*

Sept 2016: *Second Newsletter*

29th Nov - 1st Dec 2016:
Community Design Workshop

Jan 2017: *Feedback Newsletter*

Spring 2017: *Consultation Meeting*

Website: <http://www.north-ayrshire.gov.uk/resident/community>

[-safety/flooding.aspx](#)

Should you contact us, it will be necessary to provide some personal data (name and address etc.). Your information will be shared with Royal Haskoning DHV and only for the purposes of the flood protection scheme. A copy of our full privacy notice can be found on <http://www.north-ayrshire.gov.uk/privacy-policy.aspx>

Contact us:

Email: MillportCoastalFPS@north-ayrshire.gov.uk

North Ayrshire Council: Patricia Rowley, Cunninghame House, Irvine, KA12 8EE, Tel. 01294 310000

Royal HaskoningDHV: Amy Savage, Rightwell House, Bretton, Peterborough, PE3 8DW, Tel. 01733 336522



North Ayrshire Council
Comhairle Siorrachd Air a Tuath

Flood protection to the Old Town

To assess the best way to protect properties along Clyde, Millburn, Crichton and Miller Streets, we are using computer models of waves and tides and 3D plans of ground levels. A combination of small rock armour breakwaters, rock revetments and raising the level of the existing sea walls is expected to be the best solution. We are investigating the possible positions for these flood protection structures and their required height, considering the level of protection needed against wave overtopping, location of utilities infrastructure, access requirements and visual impact.



Flood protection to Glasgow Street

We are reviewing the best alignment for a low flood wall to protect Glasgow Street, and how high this wall needs to be. The position of sewer pipes and telephone cables could affect the position of the wall. The wall may need to extend along part of Guildford Street (past the crazy golf) to the west and around Cross House to the east. The scheme is likely to include improvements to sections of existing masonry revetment, possibly using rock armour.



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-Planet, USDA, USGS, AEX, Getmapping, Aerovision, IGN, IGP, swisstopo, and the GIS User Community

Feedback on consultation meetings and additional work

In this third newsletter we provide an update on the work that has been undertaken to address questions that you raised during the community design workshops that were held at the end of 2016.

More information about the proposed scheme is available from North Ayrshire Council's website: www.north-ayrshire.gov.uk/flooding.

Reviewing your comments from the community design workshops

The community design workshops were attended by over 240 people over two days. We also held workshops with students from Cumbrae Primary School and Largs Academy.

During the workshops a number of you expressed concerns about the option to extend Millport Pier and the extent of the flood walls that are expected to be required around Millport seafront. Flood risks to Kames Bay and Marine Parade were also highlighted. Local residents proposed alternative arrangements of offshore breakwaters.

We have carried out additional numerical modelling including a review of the bathymetric survey data to confirm the input conditions for the models. We are now assessing the technical and environmental feasibility of these proposals and the expected costs.

Marine and Coastal Tourism

Outside of the Flood Protection Scheme the Council Economic and Development Team is also looking at the potential to develop Millport further as a key tourism destination on the Firth of Clyde. North Ayrshire Council are working on an Ayrshire Growth Deal for Marine Tourism.

The Ayrshire Growth Deal is under development and will require approval by both the UK and Scottish Governments but represents an exciting opportunity for the Ayrshire coast.

To inform this plan the Council Economic and

Public Consultation Workshops to provide feedback on the scheme development will be held at the **DA Hall** in Millport on **20th & 21st March 2017**, from **10.30am until 6pm**.



Winter 2016 Consultation Workshop

You also asked questions about the environmental assessment and planning consent process. We are updating the Environmental Scoping Report and consulting with NAC Planning and Marine Scotland to confirm the process for environmental assessment if an offshore breakwater option was to be taken forward.

The findings of these additional investigations will be presented at the workshops in March.

Development Team will work with Cumbrae Community Council and hold drop-in workshops to understand from you how the harbour area is used at the moment and the opportunities for future development.

The intention is to provide a meaningful way for the people of Cumbrae to get involved in the future of Marine and Coastal Tourism for the area and to help create a shared vision that is based around harnessing the potential of the marine environment for the benefit of both visitors and residents.



We have undertaken the following additional work based on your comments during the community design workshops:

- Analysis of consultation questionnaire responses
- Ground investigation
- Additional wave modelling for alternative offshore breakwater options
- Assessment of costs for offshore breakwater options
- Update to Environmental Scoping Report to include offshore breakwater options
- Review of project programme

Providing information and listening to you:

May 2016: *Work began to develop the potential scheme designs*

July & Sept 2016:
Newsletters 1 & 2

29th Nov - 1st Dec 2016:
Community Design Workshop

Feb 2017: *Newsletter 3*

20-21 March 2017: *Design development feedback workshops*

Early summer 2017: *Conclude design development phase and determine preferred scheme*

June 2017: *Newsletter 4*

Website: <http://www.north-ayrshire.gov.uk/resident/community-safety/flooding.aspx>

Ground investigation

Ground investigation works around the Millport seafront were carried out in January 2017:

- Trial pits on land and the beach observed and sampled the soil types and checked the form of construction of the existing sea walls.
- An over-water radar survey investigated the depth of sand and bedrock in Millport Bay. A radar survey of Millport Pier assessed the fill material beneath the concrete deck.

The ground investigation was completed successfully and generally found ground conditions which had been expected. We are now reviewing the results to determine the design and construction requirements for the



Ground investigation on land and on the beach



Additional wave modelling

We have undertaken additional wave modelling of alternative offshore breakwater options which were proposed during the community design workshops and we are currently reviewing the results and the environmental feasibility of these options. We are also assessing the expected costs. The findings from this work will be presented at the workshops in March 2017.



Additional offshore breakwater layouts that have been modelled

Should you contact us, it will be necessary for you to provide some personal data (name and address etc.). Your information may be shared with Royal HaskoningDHV but only for the purposes of the flood protection scheme. A copy of our full privacy notice can be found on <http://www.north-ayrshire.gov.uk/privacy-policy.aspx>

Contact us:

Email: MillportCoastalFPS@north-ayrshire.gov.uk

North Ayrshire Council: Patricia Rowley, Cunninghame House, Irvine, KA12 8EE, Tel. 01294 310000

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North Ayrshire Council Flooding and Tourism & Coastal Economy teams are working together with the community, in a strong partnership, to shape the best solution to deliver a flood protection scheme (FPS) for Millport.

The principal aim of the Millport Coastal FPS is to protect life and property for a flooding event with a return period of 1 in 200 years (0.5% probability of occurrence in any year). It is recognised that the FPS may provide other opportunities, such as the potential for development of a marina.

A working group has been established with community representatives, North Ayrshire Council elected members and officers to address community issues relating to the FPS proposals and related matters, including Millport Pier and the proposals for a marina.

Discussions are ongoing in relation to Millport Pier and proposals for a marina. Funding has not currently been identified to further the development or delivery of a marina.

What has been done since March 2017?

- Assessment of questionnaire responses;
- Review of findings of ground investigation and assessment of impacts on potential solutions
- Review and update of flood risk assessment and economic appraisal, including cost estimates for potential solutions;
- Consultation on the Environmental Scoping Report, planning environmental surveys and beginning these surveys;
- Review of potential for marina development; and
- Assessment of an additional scheme option.

Providing information & listening to you:

May 2016: Work began to develop the proposed FPS

29th Nov - 1st Dec 2016: 1st Community Workshop

20-21 March 2017: 2nd Community workshop

December 2017: Newsletter 4

Spring 2018: Newsletter 5

Website: www.north-ayrshire.gov.uk/flooding

Appraisal of Scheme Options

The flood risk assessment (FRA) and options appraisal completed in 2015 identified the flooding risks to Millport. Scotland's national flood risk strategy recognised these risks.

The FRA has now been updated based on the current numerical modelling results, with the aim of clearly setting out the baseline conditions against which the Millport Coastal Flood Protection Scheme is being developed. It also provides the input conditions for the economic appraisal of the scheme.

To date, the development of the potential options for the flood protection scheme has considered a breakwater extension to Millport Pier and offshore breakwaters. These potential scheme components would provide flood protection to Stuart Street, with onshore works required to other parts of Millport.

Recognising community feedback, including the petition 'Save Millport Pier', North Ayrshire Council Cabinet has agreed that an additional scheme option should be assessed.

This option involves the replacement of the timber pier structure with an appropriate steel and/or concrete structure, plus additional flood mitigation measures to achieve the required standard of flood protection.

An economic appraisal of the benefits and costs of all potential options will be completed.

This work is being progressed and the findings will be communicated in the next newsletter and consultation event.

Further details will be provided about future consultation events in the next newsletter.

Review of ground investigation

Ground investigation works were carried out around the Millport seafront in January 2017. Ground conditions on land were found to be as expected but conditions offshore in Millport Bay are different.

The depth of the bedrock offshore of Millport Pier is lower than expected, with between 3.5m and 12.5m of sediment on top of the bedrock. Further offshore, about 2m of sand and gravel was found above bedrock. This material would need to be removed to provide a stable foundation for the flood protection structures, which increases the cost estimates for the flood protection scheme.

Environmental assessment & surveys

Various site surveys and assessments are needed to provide up-to-date data to inform the environmental impact assessment process. The Environmental Scoping Report identified these specialist studies and consultation with Marine Scotland, SEPA, SNH and other environmental regulators confirmed the proposed surveys to be appropriate.

We have planned the work needed for the surveys, and the studies that are needed to inform the selection of the preferred scheme option began in September. This includes a landscape impact assessment, ecological and archaeological surveys.

March 2017 workshops

The consultation workshops held in March 2017 were attended by between 150 and 200 people over two days.

These workshops were held jointly with the Tourism and Coastal Economy team, to provide feedback on the scheme development since winter 2016 and to explore the community's wider ambitions for the town.

Feedback questionnaires were provided during and following the workshops. A report on the responses to the Flood Protection Scheme questionnaire is available on North Ayrshire Council's website:

www.north-ayrshire.gov.uk/flooding

The need for flood protection was recognised for parts of Millport. The questionnaire responses also show that some residents have concerns about certain scheme elements, including the need for flood walls at Kames Bay and the proposal for extending Millport Pier with rock armour. There was relatively stronger support in favour of an offshore breakwater. Concerns were also raised relating to access, visual impact, and impacts on tourism.

Tourism and Coastal Economy

North Ayrshire Council are continuing to work closely with key representatives from across the tourism industry to drive forward the approach to Tourism and the Coastal Economy. This approach focusses on four key areas, including:

- Marketing & Branding
- Infrastructure
- Business Development
- Events

Key work supporting the Ayrshire Growth Deal is also continuing to advance, including opportunities for Marine Tourism. This work is examining the future opportunities for Marina development at Millport, and is closely linked to future decisions around the Flood Protection Scheme.

Should you contact us, it will be necessary for you to provide some personal data (name and address etc.). Your information may be shared with Royal HaskoningDHV but only for the purposes of the flood protection scheme. A copy of our full privacy notice can be found on <http://www.north-ayrshire.gov.uk/privacy-policy.aspx>

Contact us:

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