

# MILL BURN FLOOD ALLEVIATION SCHEME

## Environmental Impact Assessment Screening Report



IBE1496  
F01  
19 January 2021

## Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
D01	Draft for client review	James Hamilton Richard Bingham	Richard Bingham Stephen Patterson	Andrew Jackson	17/12/20
F01	Final	James Hamilton Richard Bingham	Richard Bingham Stephen Patterson	Andrew Jackson	19/01/21

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19 January 2021

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## EXECUTIVE SUMMARY

North Ayrshire Council have identified a proposed Flood Alleviation Scheme in the town of Millport to reduce the risk of flooding from the Mill Burn. This report uses the criteria outlined in the Flood Risk Management (Scotland) Regulations 2017 to assess the characteristics and potential effects of implementing the proposed Mill Burn Flood Alleviation Scheme in order to determine the requirements for undertaking an Environmental Impact Assessment.

The Flood Alleviation Scheme incorporates a 495 metre long, 900mm diameter flow diversion culvert, between Golf Road/Kirkton Crescent Junction and West Bay Road via Nether Kirkton Farm following the perimeter of fields and discharging to Foul Port. This report describes the process of how the scheme was identified, including the consultation and ground investigations undertaken.

The criteria outlined in Schedule 1 of the Flood Risk Management (Scotland) Regulations 2017 and the EIA Screening Checklist of the Scottish Government (June 2019) have been used to assess the characteristics and potential effects of implementing the proposed Mill Burn Flood Alleviation Scheme. These criteria relate to the:

- The characteristics of the development
- The location of the development
- Characteristics of the potential impacts

From an assessment of the types and characteristics of the potential impacts likely to arise from the proposed flood alleviation scheme for the Mill Burn, **it is considered that it does not constitute EIA development.** With preparation and implementation of a construction management plan, and adherence to good practices, such as those outlined in the Engineering in the Water Environment Good Practice Guides published by SEPA, few impacts are anticipated to arise.

In accordance with Section 5(1) of the Flood Risk Management (Scotland) Regulations 2017, North Ayrshire Council requests a Screening Opinion from each consultative body to confirm whether or not an EIA is required for the proposed Flood Alleviation Scheme for the Mill Burn.

# 1 INTRODUCTION

North Ayrshire Council have identified a proposed Flood Alleviation Scheme in the town of Millport to reduce the risk of flooding from the Mill Burn.

The Scheme is being delivered under the Flood Risk Management (Scotland) Act 2009. Under this Act, the requirements for undertaking Environmental Impact Assessment (EIA) are set out in The Flood Risk Management (Flood Protection Schemes, Potentially Vulnerable Areas and Local Plan Districts) (Scotland) Amendment Regulations 2017.

These Regulations outline, under Schedule 1, criteria that should be taken into account when considering whether a Flood Alleviation Scheme is likely to have a significant effect on the environment (Regulation 4(2)). The criteria outlined in Schedule 1 and the EIA Screening Checklist of the Scottish Government (June 2019) have been used to assess the characteristics and potential effects of implementing the proposed Mill Burn Flood Alleviation Scheme.

In accordance with the requirements of the Regulations (Part II Environmental Impact Assessment (EIA), Regulation 5(2)), this request for a screening opinion is accompanied by the following:

- A plan identifying the site and any land that may be affected by the development or over which access may be required; and
- A brief description of the nature and purpose of the development and of possible effects upon the environment.

## 2 THE NEED FOR A FLOOD ALLEVIATION SCHEME FOR THE MILL BURN

The need for a Flood Alleviation Scheme in Millport was initially identified in 2015 when North Ayrshire Council (NAC) published the Ayrshire Local Flood Risk Management Plan to comply with the Flood Risk Management (Scotland) Act 2009. This detailed how and when the actions to deliver the goals set in the Flood Risk Management Strategy were to be delivered between 2016 and 2021. This plan identified Great Cumbrae Island as a Potentially Vulnerable Area (PVA).

SEPA identified 42 prioritised flood protection schemes for delivery between 2016 and 2021, which included Millport (Mill Burn). The Mill Burn flows to the west of the town of Millport which is situated on the south coast of the island at Millport Bay (Figure 2.1). It flows south from the Upper and Lower Cumbrae Reservoirs, flowing past Millport Holiday Park, Millport Bowling Club and under the west side of Millport before discharging to Foul Port.

Millport is subject to both fluvial and coastal flooding. Alleviation of coastal flooding is being assessed through a separate scheme - the Millport Coastal Flood Protection Scheme. Fluvial flooding primarily originates from the Mill Burn. This has the potential to impact upon residential and non-residential properties as well as several sections of road. The most recent significant flood event experienced in Millport occurred in May 2014, affecting five properties. The Mill Burn overtopped its banks and flooded Miller Street and Crawford Street, the golf course, Golf Road adjacent and to the north of Nether Kirkton Cottage and caused a wall to collapse at the junction of Crawford Street and Cardiff Street. Flooding also occurred in January 2004, August 2004 and October 2004, with flooding affecting properties and roads.

There are approximately 124 properties at risk of flooding from the Mill Burn during a 0.5% Annual Exceedance Probability (AEP) (1 in 200 year return period) event. An indication of the properties at risk of fluvial flooding from the Mill Burn is provided in Figure 2.2.

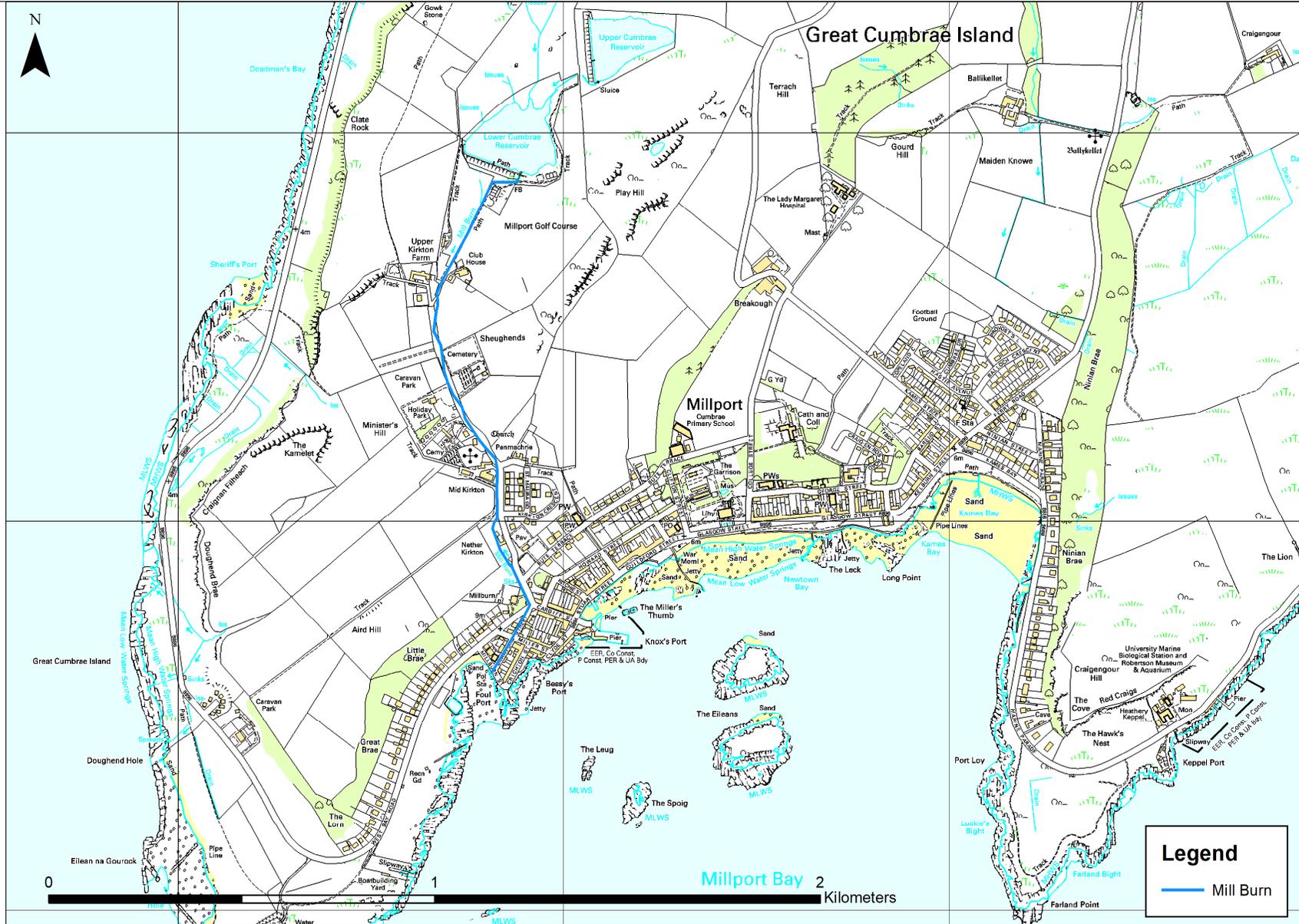


Figure 2.1: Location of the Mill Burn and Millport

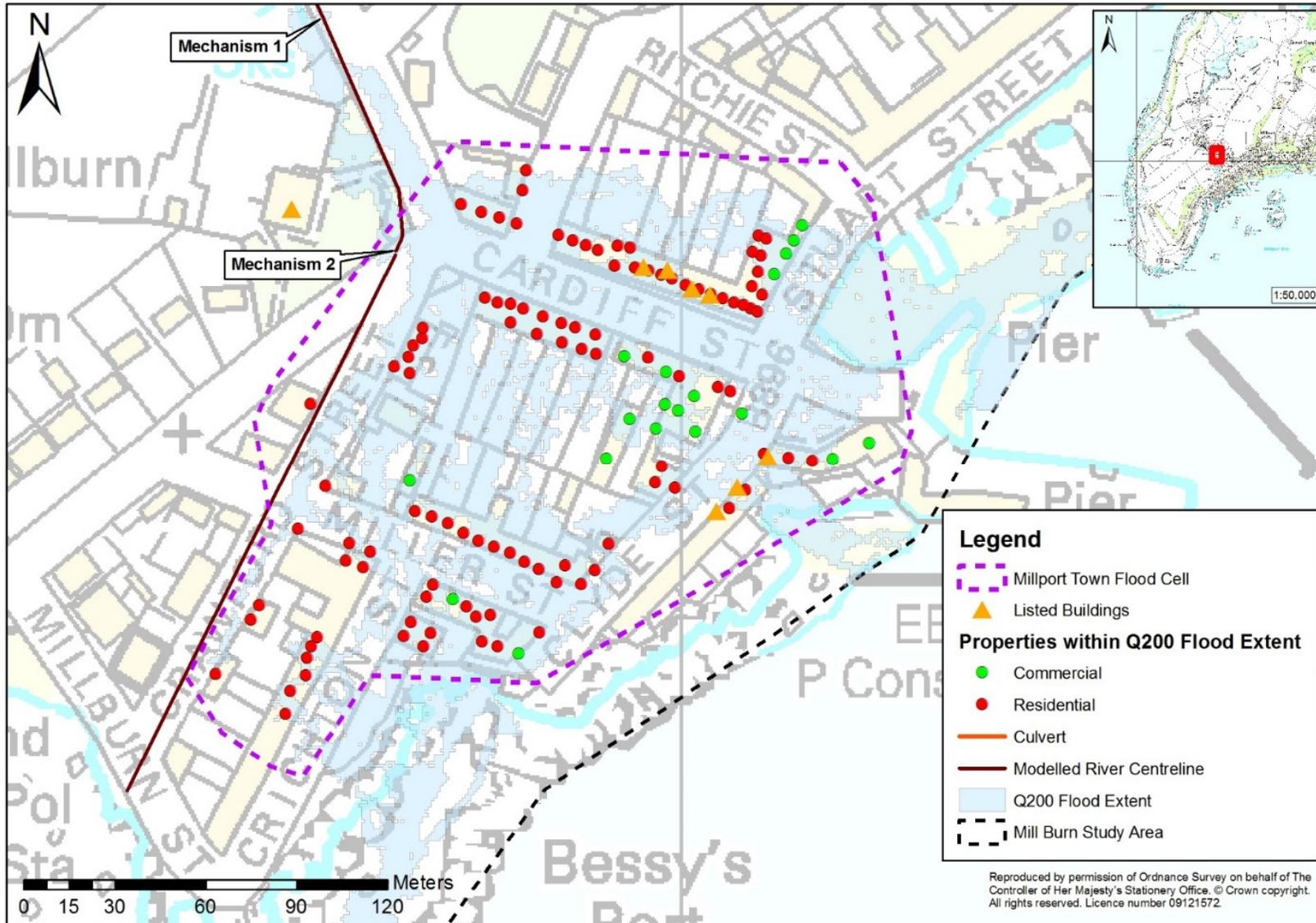


Figure 2.2: Flood risk in west Millport from Mill Burn

## 3 THE PROPOSED FLOOD ALLEVIATION SCHEME

### 3.1 Identification of the Proposed Flood Alleviation Scheme

On behalf of NAC, a high-level Flood Risk Assessment (FRA) and Option Appraisal was completed in 2015, which identified potential options to mitigate flooding. On the basis of the Option Appraisal report, a total of £1.1m of funding was allocated to implement a flood alleviation scheme in Millport.

RPS were appointed to progress further hydrological and hydraulic analysis, owing to the availability of more up to date hydrological data. In 2018, RPS completed a Stage A report which included a review of existing studies, updated hydrological analysis and hydraulic modelling to facilitate the identification of a preferred option. Further details of the analysis undertaken to define the flood risk is available in the IBE1496\_Mill\_Burn\_FAS\_Rp01\_F02 report. As the updated hydrological data had implications regarding previously identified options, RPS were commissioned by NAC to progress with a Stage A2 optioneering review prior to progression of the project to outline and detailed design stage.

Stage A2 of the optioneering process aimed to provide a viable flood risk management option that would give the optimum Benefit Cost Ratio (BCR), with an objective of achieving the 0.5% Annual Exceedance Probability (AEP) (1 in 200 year return period) fluvial event Standard of Protection (SoP), dependent upon the BCR and the project budget. Adaptability to climate change was also considered for each option. For the 0.5% AEP fluvial flood event, only one flood cell was identified and assessed. The flood cell covered Millport town and included 124 properties at risk from the Mill Burn.

A long list of potential actions was compiled, based on SEPA's standard list of actions. These were screened to remove unfeasible actions, and to identify viable options to reduce the risk of fluvial flooding within Millport. The shortlisted options developed at Stage 2 comprised three structural options (Option 1 – flow diversion route; Option 2 – upgrading of control structures; Option 3 – storage area) and one non-structural option (Option 4 – property level protection). These options were appraised on the basis of their flood risk management benefits, wider positive and adverse impacts, adaptability to climate change and other future flood risk and whole life cost and uncertainties. Option 1 was selected as the preferred option, on a technical and financial basis. This option would divert flow, consisting of a flow control structure in the form of a weir, by means of sections of culverts and open channel in the Mid Kirkland area, discharging through a culvert to the port, and would provide protection up to and including the 0.5% AEP flood event. Further details of the Stage A2 analysis is available in the IBE1496\_Mill\_Burn\_StageA2\_Optioneering report.

Stage A3 of the optioneering process was undertaken in 2019, which included the investigations required to further develop the options prior to proceeding to option design. This stage involved the following:

- Ground investigation survey and geotechnical laboratory testing to determine suitability of the site for the preferred option;
- Consultation with stakeholders to determine the likelihood of opposition/approvals to options and to obtain any further details or opinions that could inform the selection of a preferred option;
- Consultation with utility companies to obtain records and estimates for utility diversions to refine costings for each option; and

- Development and review of costs and BCRs for each option to more confidently recommend a preferred option.

Option 1, consisting of a Flow Diversion route, remained the best performing option, and was recommended as the preferred option for the Mill Burn on a technical, financial and social basis. The proposed route of the flow diversion channel was amended during Stage A3 following discussions between NAC, RPS and landowners, and two potential routes were identified. The landowner's willingness to cooperate with these routes was on the provision that the diversion channel would be culverted along its entirety to maintain usage of the farmland.

In terms of adaptability to climate change, the requirement to implement a flow diversion culvert (instead of an open flow diversion channel) along its entire length will mean that Option 1 can mitigate flood risk from a 0.5% AEP flood event, but will not be adaptable in mitigating the increase in flood risk due to climate change. At the detailed design stage of the study, it is recommended that the potential for Natural Flood Management (NFM) and/or overdesigning of the flow diversion culvert be investigated as means to provide adaptability to climate change flood risk. Further details of the Stage A3 analysis is available in the IBE1496\_MillBurn\_Option Recommendation Report\_F02.

### 3.2 Consultation

Consultation was undertaken with Marine Scotland, SEPA, and the local fisheries board. Marine Scotland confirmed Marine Licencing requirements for the scheme, owing to the proposed installation of the culvert outlet below the MHWS.

SEPA confirmed requirements for Controlled Activities Regulations (CAR) licencing, but did not foresee potential implications with the outlet. They recommended consideration of potential erosion at the culvert outlet; the potential use of a constructed channel from the flow diversion outlet across West Bay Beach to the shoreline was therefore investigated as a means of reducing erosion. This investigation found that the diversion channel would not result in a significant erosion risk, and a constructed channel would not be necessary.

The local fisheries trust informed that, owing to the existing long culverted reach at the channel end, reservoirs in the upper catchment would be inaccessible to sea-run fish, a situation that would not be altered by the proposed scheme. A very low fish presence is expected in the vicinity of the proposed scheme. The fisheries board recommends a fish habitat and population survey be conducted by a fish specialist at the design stage to determine the current status of fish populations and provide advice on the scheme design.

### 3.3 Ground Investigation

Ground investigation works were undertaken to determine ground conditions along the two potential routes for the preferred Option 1 flow diversion. The scope of works comprised thirteen exploratory pits, excavated to a depth of 4.5m. Fieldwork was undertaken in November 2019 with the following objectives:

- To determine the typical nature, thickness and engineering parameters of the made ground and natural strata;
- To determine the nature and extent of potential contamination within the site; and

- To recover samples of made ground and natural strata for geotechnical laboratory testing.

The geotechnical testing undertaken verified the viability of Option 1. Both routes were found to be viable in terms of depth allowance, and there were no signs of contamination. Further site investigation works are recommended at the detailed design stage to determine ground conditions which will facilitate design with input from a geotechnical engineer.

### 3.4 Description of the Proposed Scheme

The two routes proposed for the Option 1 flow diversion were considered to be viable; route 2 was selected as the preferred option owing to landowner preference for this route. An overview of the proposed scheme is shown in Figure 3.1, and further details regarding the scheme are outlined in Table 3.1. In order to provide protection from a 0.5% AEP flood event, the scheme requires a 495 metre long, 900mm diameter flow diversion culvert, between Golf Road/Kirkton Crescent Junction and West Bay Road via Nether Kirkton Farm following the perimeter of fields and discharging to Foul Port. The design also requires a control structure at the upstream end of the culverted channel. This control structure will be a weir to divert flood flows to the culvert during flood events.

The construction of the scheme will require in-channel works at the start of the flood relief culvert (at location 1 in Figure 3.1), in order to construct the flow control structure within the Mill Burn, which will divert flows into the flood relief culvert during flood events. Construction of the remaining scheme elements will be via an excavator, which will excavate a trench along the route of the flood relief culvert, prior to preparing the foundation bed as specified in the detailed design drawings, installation of the culvert and reinstatement.

The route initially follows a laneway between Location 1 and Location 2 in Figure 3.1 (used for agricultural traffic only). The route then follows the perimeter of two separate fields, using for grazing purposes, between Location 2 and Location 3 in Figure 3.1. The only vegetation which will be removed and required to be replaced is grassland along this reach. At Location 3, there is some undergrowth and small trees in a small area which will need to be removed and replaced to allow the culvert to pass through to the laneway between Locations 3 and 4 in Figure 3.1. This short laneway is used for car parking only. The culvert will then cross under the West Bay Road (between Location 4 and Location 5 in Figure 3.1) before discharging into the bay. The scheme will incorporate the construction of a headwall at both the upstream and downstream extents of the flood relief culvert.

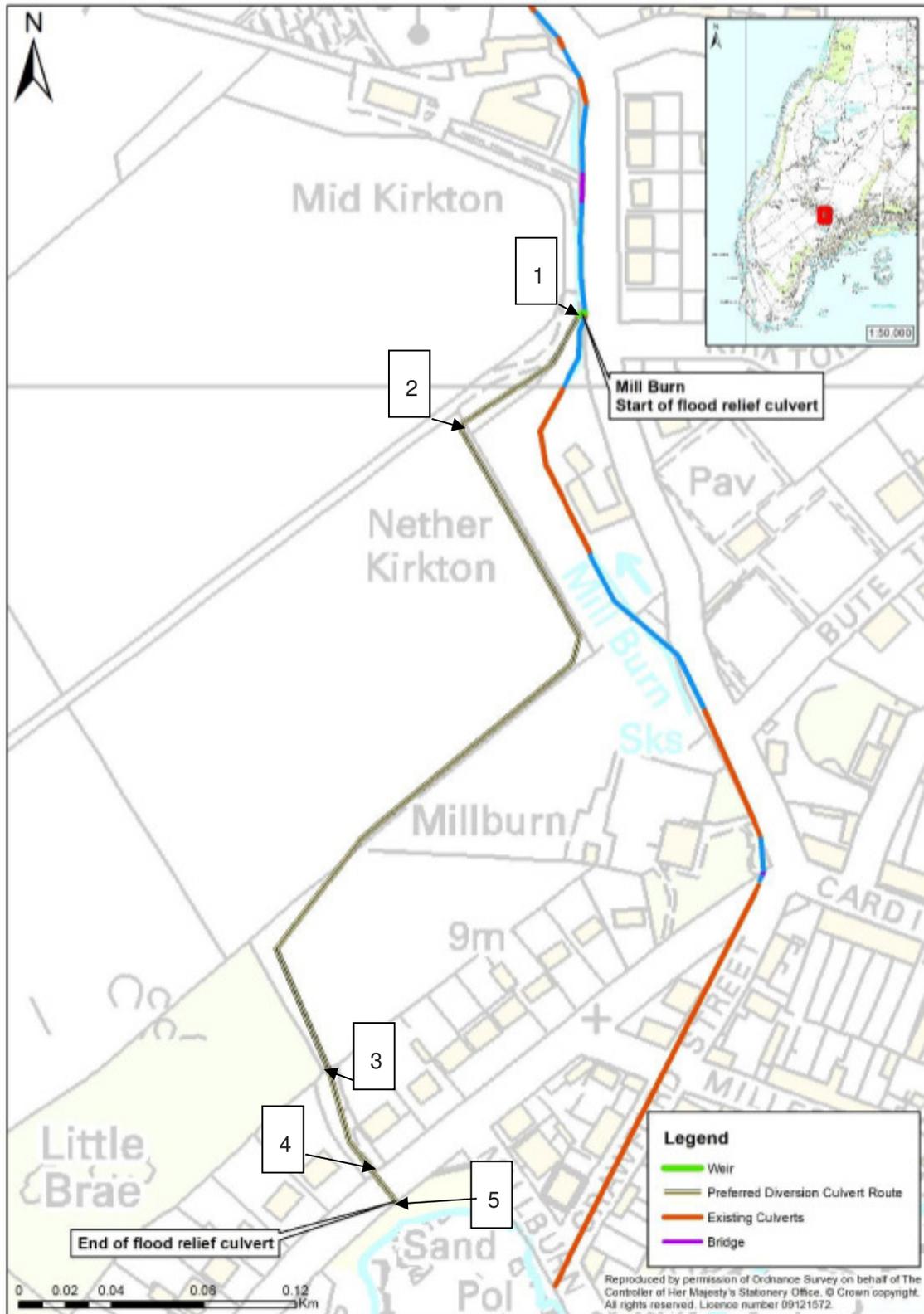


Figure 3.1: Preferred Flood Alleviation Option

**Table 3.1: Project Information**

Please Describe									
<b>Address or location of proposed development</b>	Millport								
<b>Site area (hectares)</b>	2.1 ha of construction footprint. 0ha post construction as buried culvert.								
<b>Brief description of the proposed development</b>	<p>495 metres of 900mm diameter flow diversion culvert between Golf Road/Kirkton Crescent Junction and West Bay Road via Nether Kirkton Farm following perimeter of fields and discharging to Foul Port.</p> <p>The culvert will convey a flow of 0.49 m<sup>3</sup>/s during flood events and will have a depth filled of 0.57m allowing an available freeboard of 0.33m.</p> <p>Culvert requires a control structure at the upstream end of the culverted channel. This control structure will be a weir to deliver flow to the culvert during flood events.</p>								
<b>Type of Application (please tick)</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; width: 50px;"><input checked="" type="checkbox"/></td> <td>Application for planning permission</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Application for planning permission in principle</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Application for the approval of matters specified in conditions</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Other permissions – please state: _____</td> </tr> </table>	<input checked="" type="checkbox"/>	Application for planning permission	<input type="checkbox"/>	Application for planning permission in principle	<input type="checkbox"/>	Application for the approval of matters specified in conditions	<input type="checkbox"/>	Other permissions – please state: _____
<input checked="" type="checkbox"/>	Application for planning permission								
<input type="checkbox"/>	Application for planning permission in principle								
<input type="checkbox"/>	Application for the approval of matters specified in conditions								
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## 4 SCREENING FOR EIA

Schedule 2 of the Town and Country Planning (Environmental Impact Assessment (Scotland) Regulations 2017 lists development types that may require EIA. The proposed scheme is included as (10 (h) Inland-Waterway construction not included in Schedule 1, canalisation and flood-relief works). As the scheme meets a relevant threshold of being over 1ha in works extent, it must be screened for the requirement for EIA (Table 4.1).

Schedule 1 of the Flood Risk Management (Scotland) Amendment Regulations 2017 outlines the selection criteria that should be used to determine whether a Flood Alleviation Scheme is likely to have a significant effect on the environment and require an EIA (Regulation 4(2)). These criteria relate to the:

- The characteristics of the development
- The location of the development
- Characteristics of the potential impacts

The criteria outlined in Schedule 1 and the EIA Screening Checklist of the Scottish Government (June 2019) have been used to assess the characteristics and potential effects of implementing the proposed Mill Burn Flood Alleviation Scheme. Table 4.2 outlines the characteristics of the proposal, Table 4.3 outlines the location of the proposal and Table 4.4 identifies the characteristics of potential impacts related to the proposal.

**Table 4.1: Single Stage Consent Application**

	Yes/No Please Describe
Is the proposed development of a type listed in Column 1 of Schedule 2?	Yes (10 (h) Inland-Waterway construction not included in Schedule 1, canalisation and flood-relief works)
Is the proposed development to be located within a 'sensitive area'?	No
Does the proposed development meet any of the relevant thresholds and / or criteria in Column 2 of Schedule 2?	Yes (The area of works exceeds 1 hectare)

**Table 4.2: Characteristics of the proposed development**

Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
<b>1. Characteristics of the Development</b>			
<b>(a) Size and design of the development</b>			
Will the proposed development be out of scale with the existing environment?	No	The development is a Flood Alleviation Scheme (FAS) for the Mill Burn. The proposed culverted diversion channel follows field boundaries and passes through farmland only. Some in-channel work will be required for connection of the Mill Burn and diversion culvert. Following laying of the culvert diversion all lands will be restored to their previous use.	No significant effect.
<b>(b) Cumulation with other existing and/or approved development</b>			
Will the proposed development lead to further consequential development or works?	No	-	-

Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
Are there potential cumulative impacts with other existing development, approved developments or developments the subject of valid applications?	No	One other proposed development in the area at Nether Kirkton with development of a single property. The culverted diversion channel will run alongside the site but FAS unlikely to impact upon development.	No significant effect.
Should the application for the proposed development be regarded as an integral part of a more substantial project? If so, can related developments which are subject to separate applications proceed independently?	No	-	-
<b>(c) Use of natural resources, in particular land, soil, water and biodiversity</b>			
Will the proposed development use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or are in short supply?	Yes	<p>Very limited temporary use of land and local soils for construction of culverted diversion channel.</p> <p>Material will be excavated to make a temporary channel. The culvert pipe will be laid and the excavated material will be replaced into the remaining voids. Any excess material will either be re-used on site or disposed of by a competent contractor to an appropriate facility.</p>	No. Any use of soils and land will be small scale, localised, temporary and short term. These materials are not non-renewable nor are in short supply and there are no protected geological sites or sensitive soils in the area.
<b>(d) Production of waste</b>			

Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
Will the construction, operation or decommissioning of the proposed development produce wastes?	Yes	Some wastes are likely to be produced during the construction phase due to excavation of material for a flow diversion channel. Excavated material will be re-used on site or removed off site by a competent contractor.	<p>No. A construction management plan should be prepared by the contractor pre construction. Any contaminated materials found will have to be treated separately to normal wastes. Any waste materials will have to be disposed of, offsite at designated / licensed disposal sites / facilities as required. Care will have to be taken to ensure that no waste material makes its way into the nearby watercourse.</p> <p>All waste resulting from the construction of the development will have to be contained within designated areas of the site.</p> <p>No waste materials are anticipated to be produced following the construction phase.</p>
<b>(e) Pollution and nuisances</b>			
Will the construction, operation or decommissioning phases of the proposed development release pollutants or any hazardous, toxic or noxious substances to the air?	Yes	There is potential for temporary negative impacts upon air quality as a result of construction activities. In particular, these are likely to originate from additional construction-related traffic, disruptions to traffic as a result of construction works, and construction machinery.	<p>No. Construction phase impacts are likely to be small in scale, short term, and temporary in nature.</p> <p>No Air Quality Management Areas (AQMAs) have been declared within North Ayrshire by the local authority. Further to this, no air quality issues have been identified in or around the town of Millport.</p>
Will the construction, operation or decommissioning of the proposed development lead to risk of contamination of land or water from releases of pollutants?	Yes	There is potential for temporary negative impacts upon water quality in the short term as a result of construction activities, particularly with regard to erosion and sedimentation.	<p>No. Risk can be minimised with good site practice, appropriate timings of works and adherence to best practice guidelines such as Engineering in the Water Environment Good Practice Guides published by SEPA. The construction contractor should produce a construction management plan which will highlight the avoidance and mitigation measures to be implemented in order to ensure that pollution is avoided or mitigated for throughout the development.</p> <p>No leachates or releases of waste material is anticipated following the construction phase.</p>

Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
<p>Will the construction, operation or decommissioning phases of the proposed development cause noise, vibration or the release of light?</p>	<p>Yes</p>	<p>There is potential for short term, temporary annoyance/disturbance noise and vibration impacts upon people and their properties during construction of the FAS, although impacts will be very localised and affect only community very close to any works. There is also potential for temporary disturbance and/or displacement of terrestrial, aquatic and marine fauna during the construction phase from noise and vibration.</p>	<p>No. Works can be scheduled in such a way as to reduce and minimise disruption both in terms of noise and traffic management.</p> <p>For the most part, noise generated through construction activities is likely to be intermittent and low frequency and will only affect a very small number of the local population, for a short time period. Whilst all care can be taken to reduce the negative impacts/disruption that works may have to the surrounding area and the people who live in it, completely eliminating all disruption is unlikely, however noise generated will likely be small scale, localised, temporary and short term during the construction phase.</p> <p>No further potential for noise or vibration is anticipated following the construction phase.</p>
<p><b>(f) Risk of major accidents and/or disasters which are relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge</b></p>			

Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
<p>Will there be any risk of accidents during construction, operation or decommissioning of the proposed development which could affect the environment or human health?</p>	<p>Yes</p>	<p>The main risk to human health presented by the development is likely to be the risk of injury during construction work.</p> <p>The following aspects of the development may have the potential to be harmful to human health: Dust pollution, noise pollution, construction traffic, general construction hazards and sources of contamination.</p>	<p>No. To ensure safe working practice is implemented, the Construction Design and Management Regulations (CDM) should be followed throughout the design and construction phases of the development. This will ensure that any hazards/risks identified during the design phase will be noted before the construction phase begins and ideally designed out. Appropriate measures can be implemented to mitigate for any identified residual risks.</p> <p>The construction contractor should produce a Construction Management Plan before the work commences. This will outline the various avoidance and mitigation measures which will be implemented in order to reduce these risks to human health (to a level which is deemed to be acceptable by all parties). During the construction phase, the contractor(s) should implement measures in accordance with Health and Safety legislation/ requirements, and best practice to minimise the risks of accidents that would have effects on people or the environment.</p> <p>It is recommended that the community of Millport are consulted with throughout design phases of the Mill Burn FAS, in advance of decisions being made. This is to ensure that the people that have to live with the scheme find it acceptable and to ascertain busier than usual times for the area which may inform timings of works. However, construction phase traffic will be small in scale.</p> <p>No further risk of accidents, having regard in particular to substances or technologies used, is anticipated following the construction phase.</p>
<p><b>(g) Risk to human health</b></p>			

Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
Will the construction, operation or decommissioning phases of the proposed development involve the use, storage, transport, handling or production of substances or materials which could be harmful to human health?	Yes	Fuel and construction materials will be stored on site during the construction phase. If not stored and secured correctly they could be dangerous to the local population and surrounding environment.	No. Fuels and construction materials should be stored securely to ensure that they will not cause a risk to people or the wider environment, in particular the nearby watercourse.  The construction contractor should produce a Construction Management Plan before the work commences which will include Pollution Prevention and Control measures. This will outline the various avoidance and mitigation measures which will be implemented in order to reduce these risks to human health (to a level which is deemed to be acceptable by all parties).  No harmful materials will be stored or required on site following the construction phase.

Table 4.3: Location of the proposed development

Schedule 3 Selection Criteria	Yes/No	Briefly describe potential impact	Is effect likely to result in a significant effect? Please explain
<b>2. Location of the Development</b>			
<b>(a) Existing and approved land use</b>			
Are there existing and/ or approved land uses in the locality of the proposed development site which could be affected by the proposed development?	Yes	There are a range of land uses and habitats within the study area along the river and at the proposed site for the FAS, with local land use being predominantly made up of improved grassland, arable and horticulture and suburban areas.  The majority of the land to be developed is classed as improved grassland. Vegetation will be removed from the development area where it impairs access or is along the line of construction. There	No. All impacts are temporary, with land uses being restored post construction.  Once construction has concluded, efforts will be made to replace any vegetation that has been removed. The only vegetation to be removed along the majority of the reach is grassland. A small area of undergrowth and small trees will need to be removed at the south end of the site; the Preliminary Ecological Assessment for the scheme found trees in this area to be of moderate bat building roost potential, therefore further surveys may be required prior to the removal of any trees to ascertain their usage.  Public consultation has been undertaken and further consultation will be undertaken to ensure that the amenity

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		<p>is potential for species disturbance or displacement and loss and/or pollution of local habitats.</p> <p>There is potential for temporary disruption to amenities within the town, particularly with regard to transport and social infrastructure, such as the golf course and holiday park, due to construction activities and the increased traffic volumes as a result of construction traffic. Access to residential and non-residential properties in close proximity to the route of the diversion culverts may also be temporarily disrupted due to construction activities.</p>	<p>and recreation needs of the community are incorporated into the final scheme designs.</p> <p>Construction phase traffic will be small in scale, and no changes to traffic levels or traffic flows are anticipated post construction phase.</p>
<p><b>(b) Relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground</b></p>			
<p>Are there any areas on or around the location of the proposed development and its underground which contain important, high quality or scarce resources which could be affected by the proposed development?</p>	No	<p>There are no areas on or around the location of the proposed development and its underground which contain important, high quality or scarce resources which could be affected by the proposed development.</p>	
<p><b>(c) Absorption capacity of the natural environment</b></p>			
<p>Are there any areas on or around the application site that are protected under international or national legislation for their ecological, landscape, cultural heritage or other value which could be affected by the construction, operation or decommissioning of the proposed development?</p>	Yes	<p>The Kames Bay SSSI is situated approximately 1.1km east of the site and is designated for the study of intertidal marine biology.</p> <p>Great Cumbrae Island is a designated Local Landscape Area (LLA). It was designated following Scottish Government Policy to protect the landscape from inappropriate development, to encourage positive landscape management, to raise awareness of</p>	<p>No. The Kames Bay SSSI is unlikely to be affected by the works at the Mill Burn due to the distance from the site and the scale of the works.</p> <p>There is potential for negative visual impacts during construction activities, but these will be small scale, localised and temporary. There will be no long-term impact on visual amenity of the LLA.</p>

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		the landscape and promote a community's sense of pride in the landscape.	
<p>Are there any other areas on or around the location which are important or sensitive for reasons of their ecology which could be affected by the proposed development? Particular attention should be paid to the following areas:</p> <p>wetlands, riparian areas, river mouths;</p> <p>(ii) coastal zones and the marine environment;</p> <p>(iii) mountain and forest areas;</p> <p>(iv) nature reserves and parks.</p>	Yes	<p>There are a range of habitats and land uses within the study area, with local habitats primarily being made up of cultivated/disturbed land, other habitat, poor semi-improved grassland and improved grassland.</p> <p>There is potential for the localised bankside works to cause sedimentation and erosion, potentially causing limited disturbance to downstream aquatic habitats and species.</p> <p>A Preliminary Ecological Appraisal indicated there are no invasive non-native plant species (INNS) within the development area. However, the invasive weed species horsetail and common ragwort were identified in the study area.</p>	<p>No. The construction contractor should produce a Construction Management Plan before the work commences which will include Pollution Prevention and Control measures. Provided that correct construction practice is followed, it is anticipated that the development will not have any long term impacts on water quality or biodiversity.</p> <p>Where disturbance of invasive weed species may occur, this will be considered in terms of biosecurity of plant or personnel working on site. Prior to construction activities commencing, updated surveys of the construction area should be completed to ensure that suitable biosecurity procedures are implemented, where required.</p>
<p>Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora which could be affected by the proposed development?</p>	Yes	<p>A Preliminary Ecological Appraisal identified habitat with the potential to support otter, bats, badger, water vole, red squirrel and nesting birds throughout the wider survey area (250m of development).</p>	<p>No. The PEA identified limited evidence of otter, with spraints and feeding remains found downstream of the development site on the coast. Habitat with potential to support bats, badger, water vole, red squirrel and nesting birds was identified in the wider survey area. No direct evidence of the presence of these species (i.e. setts, dreys, nests etc.) was found within the development area. Bat roost potential was found in trees at the upstream and downstream extent of the development area. The only vegetation to be removed along the majority of the reach is grassland. A small area of undergrowth and small trees will need to be removed at the south end of the site; the PEA found trees in this area to be of moderate bat building roost potential, therefore further surveys may be required prior to the removal of any trees to ascertain their usage.</p> <p>Any potential disturbance impacts on local flora and fauna should be considered in detail in the detailed design and in</p>

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			the construction and environmental management planning for the scheme.
Are there any groundwater source protection zones or areas that contribute to the recharge of groundwater resources which could be affected by the proposed development?	No	-	-
Are there any areas on or around the location of the proposed development where environmental quality standards are already exceeded which could be affected by the proposed development?	No	-	-
Are there any areas on or around the location which are densely populated which could be affected by the proposed development?	Yes	The FAS is in Millport, which has a population of approximately 1,200. Construction works nearby/along existing roads are likely to impact on traffic flows. There is likely to be disruption to traffic though road closures and increased amounts of traffic during the construction of the development.	No. Any traffic disruption impacts will be small in scale, localised and temporary. No changes to traffic levels or traffic flows are anticipated post construction phase.  Timing of construction activities should be optimised to avoid any major disruptions.  Public consultation throughout all stages of the scheme development with the people of Millport and local interest groups should ensure that the needs of the community are incorporated into the final scheme designs.
Is the proposed development in a location where it is likely to be visible to many people?	Yes	Although there are no significant local viewpoints in the vicinity of the proposed FAS, there is a viewing terrace with benches in the Foul Port area. This may need to be considered when constructing the culvert as the outfall may negatively impact the view from this terrace.	Construction phase impacts to visual amenity will be short lived and temporary in nature. The FAS should be planned, and designed, so as to be sympathetic towards the aesthetics of both the town and the surrounding local landscape.
Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the proposed development?	Yes	There is potential for localised disruption to amenities within the town, particularly with regard to transport due to construction activities and the increased traffic volumes as a result of construction traffic. This in turn has the potential	No. Public consultation throughout all stages of the scheme development with the people of Millport and local interest groups should ensure that the amenity and recreation needs of the community are incorporated into the final scheme designs.

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		to disrupt access to social amenity sites including the golf course, holiday park and bowling club. Access to residential and non-residential properties in close proximity to the site may also be disrupted due to construction activities.	Timing of construction activities can also be optimised to avoid any major disruptions.  Construction phase traffic will be small in scale, and no changes to traffic levels or traffic flows are anticipated post construction phase.
Are there any areas of local landscape or scenic value on or around the location which could be affected by the proposed development?	Yes	Great Cumbrae Island is a designated Local Landscape Area (LLA) designated to help protect the landscape from inappropriate development, encourage positive landscape management, raise awareness of the landscape and promote a community's sense of pride in the landscape. There is potential for temporary and localised negative visual impacts during construction upon local receptors in the west of the town.	No. The preferred option should be planned, and designed, so as to be sympathetic towards the aesthetics of the town and surrounding landscape. Any construction phase negative visual impacts will be temporary and localised in nature. As the diversion channel is underground it is not anticipated to have any impact on visual amenity once construction is complete.
Are there any areas of features of historic, cultural or archaeological value on or around the location which could be affected by the proposed development?	Yes	There are a number of listed buildings relatively nearby the proposed FAS including B listed buildings at Mid Kirkton and Millburn House and a number of C listed buildings along Cardiff Street and Clyde Street.  There are possible archaeological remains at the western end of the town near Foul Port which may be associated with Viking occupation.	No. Any impacts on these listed buildings in the area are very unlikely. The closest listed building, Millburn House, is 90m from the proposed culvert location. Any construction phase impacts on the settings of any listed buildings will be temporary.  No marine or intertidal works are proposed as part of the development, so there are unlikely to be any impacts on currently undiscovered heritage in the Foul Port area. Should any uncertainty arise at the detailed design stage, consultation with Historic Environment Scotland (HES) should ensure that undiscovered heritage is appropriately taken into account.
Is the proposed development location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions?	No	-	-

**Table 4.4: Characteristics of the potential impacts**

Schedule 3 Selection Criteria	
<b>3.</b>	<b>Characteristics of the Potential Impact</b>
<b>(a) Magnitude and special extent of the impact (for example geographical area and size of the population likely to be affected)</b>	
<p>Will the effect extend over a large geographical area, affecting many people and resulting in social changes, e.g. in demography, traditional lifestyles, employment?</p> <p>No, the works are small scale, temporary and localised. General construction disturbance impacts to local residents and local fauna. No anticipated impacts following construction.</p>	
<b>(b) Nature of impact</b>	
<p>Is the development located within or close to any other areas which are protected under international, EU, or national or local legislation for their ecological, landscape, cultural or other value, which would be significantly affected by the development?</p> <p>The development is not located within or close to areas which are protected under international, EU or national legislation for their ecological, landscape, cultural or other value, which would be significantly affected by the development.</p> <p>The development is located within the Great Cumbrae Island Local Landscape Area designation, however this development will not be visible following construction and the designation will not be significantly affected by the development.</p>	
<b>(c) Transboundary nature of the impact</b>	
<p>Will there be any potential for transboundary impact?</p> <p>There is no potential for transboundary impacts.</p>	
<b>(d) Intensity and complexity of the impact</b>	
<p>Is there a risk that environmental standards will be breached?</p> <p>There is no anticipated risk that environmental standards will be breached from the proposed development.</p>	
<b>(e) Probability of the impact</b>	

Is there a high or low probability of a potentially highly significant effect?

There is a low probability of highly significant effects.

**(f) Expected onset, duration, frequency and reversibility of the impact**

Will the effect be permanent, continuous or irreversible?

No. During the construction phase, any potential adverse effects would be small scale, short-term and temporary and can be minimised through the implementation of good practice measures such as those identified in the Engineering in the Water Environment Good Practice Guide (SEPA 2009).

**(g) Culmination of the impact with the impact of other existing and/or approved development**

Will the Project have cumulative effects, due to its proximity to other existing or planned Projects with similar effects?

The project is unlikely to have cumulative effects with any other planned projects.

**(h) Possibility of effectively reducing the impact**

Will there be any significant adverse effects on any aspect of the environment during the construction and operational phases of the development, has the developer included mitigation measures to avoid, prevent, repair or reduce the potential impact?

There are unlikely to be any significant adverse effects on any aspect of the environment during the construction and operational phases of the development provided the development is done in line with the construction management plan and adheres to the Engineering in the Water Environment Good Practice Guide (SEPA 2009).

**EIA is not required**

## 5 CONCLUSIONS

From an assessment of the types and characteristics of the potential impacts likely to arise from the proposed flood alleviation scheme for the Mill Burn, **it is considered that it does not constitute EIA development.** With preparation and implementation of a construction management plan, and adherence to good practices, such as those outlined in the Engineering in the Water Environment Good Practice Guides published by SEPA, few impacts are anticipated to arise. Any potential impacts would be restricted to the immediate vicinity of the site and are not expected to be significant. Given the small scale and short term nature of the proposed works, any impact upon local receptors is likely to be short lived. Upon completion of the works, no adverse impacts are anticipated.

In accordance with Section 5(1) of the Flood Risk Management (Scotland) Regulations 2017, North Ayrshire Council requests a Screening Opinion from each consultative body to confirm whether or not an EIA is required for the proposed Flood Alleviation Scheme for the Mill Burn.