Millport Coastal Flood Protection Scheme
Protecting the people of Millport

Working with you to protect your homes

North Ayrshire Council is developing a proposed scheme to protect the people of Millport from flooding. We are aiming for a flood protection scheme that addresses the flood risk and protects peoples homes and businesses in Millport. We want to involve you in the development process so that the scheme meets the needs of the community.

Why protect Millport?

The Old Town and Stuart Street already flood every year.

Flood risk is expected to get worse in the future, as sea levels rise and storms become more intense.

What if Millport is not protected?

Flooding might cost more than £40 million over the next 100 years.

Flooding could affect 782 properties in Millport.

Whose responsibility is it?

SEPA is responsible for strategic planning to manage flood risk across Scotland.

North Ayrshire Council, in partnership with the Scottish Government, is responsible for building flood protection schemes.

Property owners have a responsibility to prevent flooding to their properties.

High frequency ▢▢▢▢▢▢▢▢▢▢ Low frequency
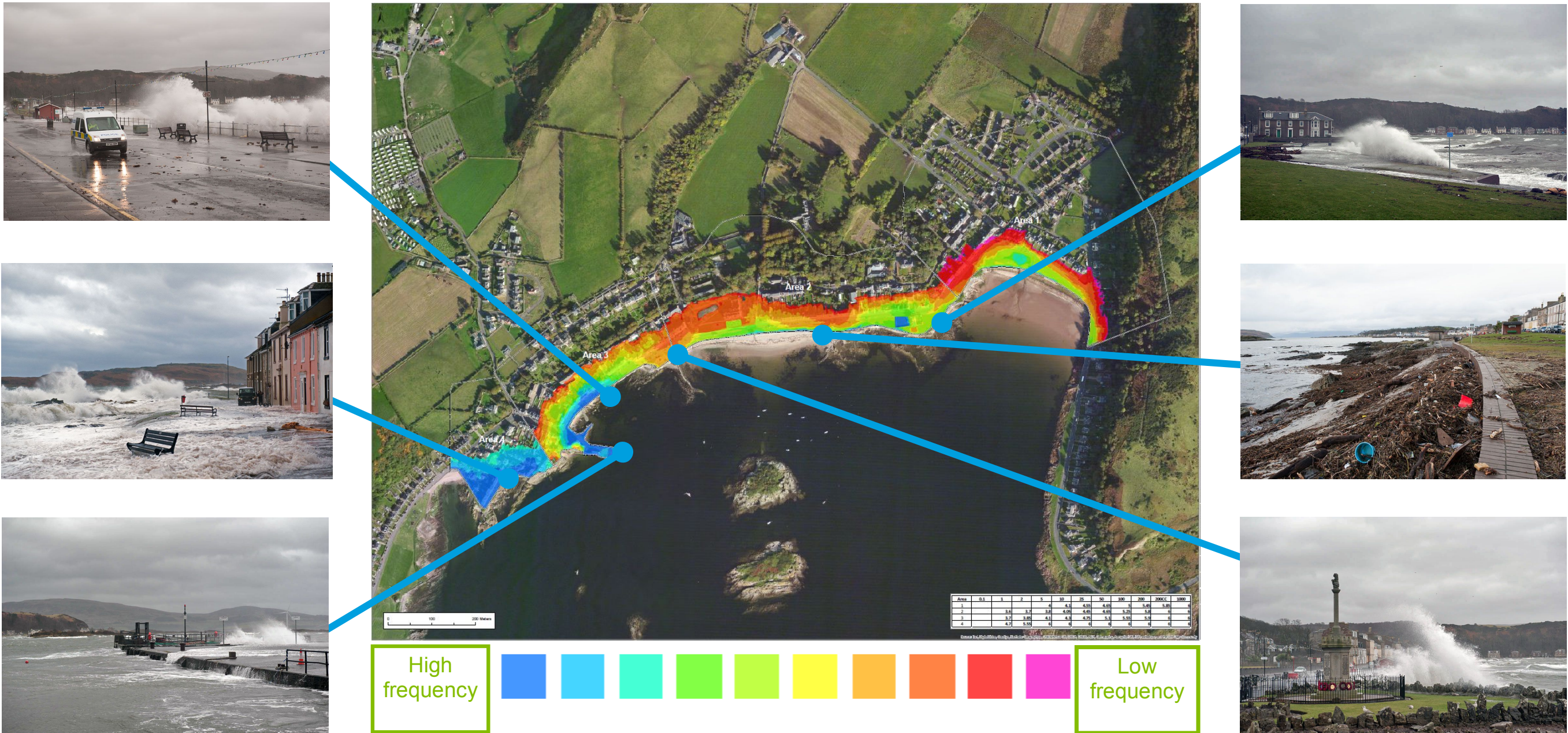
How has flood risk been assessed?

We have been working with engineering consultants Royal HaskoningDHV to assess the risk of flooding to Millport. A Flood Risk Assessment was completed in May 2015.

The coloured areas on the plan above show the parts of Millport that are at risk of flooding. If your house is in the blue area then you probably experience some flooding most years.

How will the scheme benefit Millport?

A flood protection scheme for Millport will directly reduce the frequency and severity of flooding to Millport and the problems that this causes.

The scheme will be designed to provide protection against significant flood events. The current proposal is to provide a 200 year return period standard of protection, removing the flood risk to the coloured areas on the plan above.

Royal HaskoningDHV

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Enhancing Society Together

For more information about the Millport Flood Protection Scheme please visit the Flooding page on North Ayrshire Council's website: **http://www.north-ayrshire.gov.uk/MillportFPS**

Why does Millport flood?

What causes flooding in Millport?

The main flood risk to Millport occurs when strong winds from the south and south west create large waves at the same time as a very high tide (or storm surge). Waves break over the sea defences and cause flooding.


LONG FETCH GENERATES LARGE WAVES

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How is Millport protected?

Glasgow Street

Concrete and masonry piers and masonry revetments in fair condition. Properties at risk of flooding due to low level of defences.

Guildford & Stuart Street
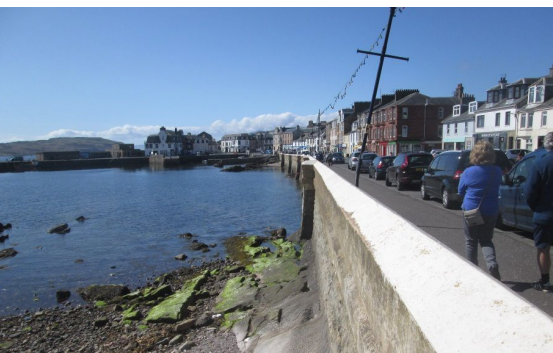
Masonry walls in fair condition (some cracks but low risk of failure). Wave overtopping of walls causes flooding of homes and businesses. Limited drainage through wall.

Millport Pier

The timber section of the pier is in a poor condition. Although the masonry section has a poor appearance and some voids and damage to sheet piles it is generally in a fair structural condition.
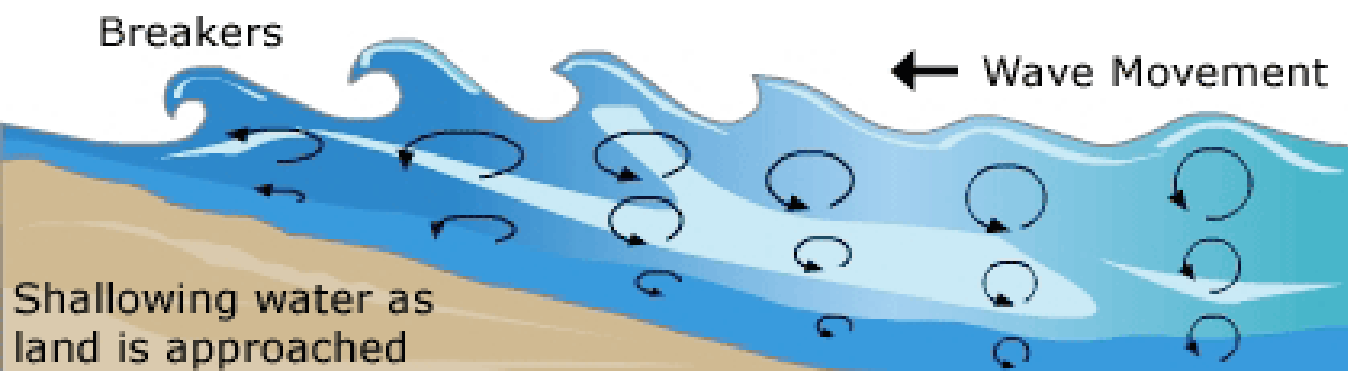
Old Town

Clyde, Miller, and Crichton Street are protected by natural rock outcrops and low sea walls. The low crest levels mean that this area is at high risk of flooding.

How do waves form?

Waves are created by wind blowing over the sea. This transfers energy to the sea and builds waves.

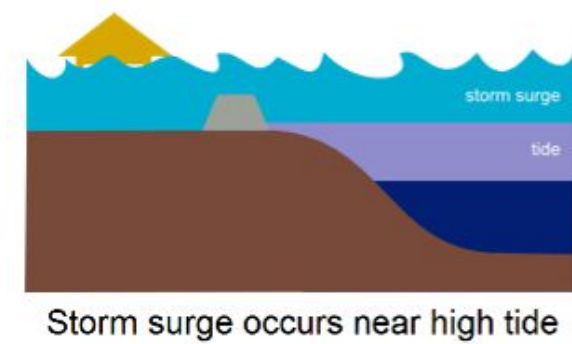Breakers · Wave Movement · Shallowing water as land is approached

Why are Millport's waves big?

The fetch is the distance the wind blows over the sea to create waves. The longer the fetch the bigger the waves. The fetch from the Firth of Clyde is very big so the waves are big.

What causes a storm surge?

Storm surge occurs when sea water piles up against the coast due to low air pressure and high winds. The wind then creates large waves on top of the surge tide. If a high tide, storm surge and large waves occur at the same time the waves can overtop the sea walls.

Storm surge occurs near high tide

Storm surge occurs near low tide

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Where does Millport flood?

Annual Probability

This is the likelihood that a big storm will happen in any given year. A 100% probability storm is one that will probably occur every year. A 0.5% probability storm is far less likely to happen, on average once every 200 years.

Which parts of Millport are flooded?

100% probability (every year)

Area east of Millport Harbour (Millburn St, Crichton St, southern end of Crawford St, 8 properties on Stuart St and the Quayhead.

20% probability (every 5 years)

As for 100% plus much of Crawford St, Miller St, Clyde St and most of Stuart St and Quayhead.

10% probability (every 10 years)

Most of Stuart Street, junction of Glasgow St and College St, eastern end of Glasgow Street.

1% probability (every 100 years)

Flooding throughout Guildford St, Glasgow St and to the rear of properties on Howard St. Garrison House likely to be inaccessible.

0.5% probability (every 200 years)

Flood extents reach Garrison House and properties at the western end of Kames Bay.

Estimating the damage

We assess economic damages caused by flooding and the safety of people by looking at the amount of water that might overtop the sea defences.

The amount of damage depends on the rate of overtopping. The rate of overtopping depends on the tide level, the size of the waves, and the type

Economic damages due to coastal erosion could be £4 million.

Value of commercial properties estimated at over £2.5 million.

Economic damages due to flooding might exceed £40 million over the next 100 years.

The 782 residential properties at risk of flooding have a total estimated value of >£110 million.

The economic appraisal considers vehicle damage, emergency services & evacuation costs, health impacts.

Flooding impacts on traffic and on the amenity value of Millport were not included in the economic appraisal.

What is the threat to people?

As well as causing flooding, wave overtopping of the sea walls during severe storms can be dangerous to pedestrians and traffic, and could cause direct damage to buildings.

Location	Annual Probability	Safety
Glasgow Street	100%	Safe
	10%	Uncomfortable
	1%	Unsafe
	0.5%	Unsafe
Stuart Street	100%	Uncomfortable
	10%	Unsafe
	1%	Dangerous
	0.5%	Dangerous
Old Town	100%	Unsafe
	10%	Dangerous
	1%	Dangerous
	0.5%	Dangerous

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