10: Option Appraisal

Selection of Recommended Option

A technical, environmental, social, and economic appraisal was undertaken to arrive at the recommended scheme.

Technical, Environmental & Social Appraisal

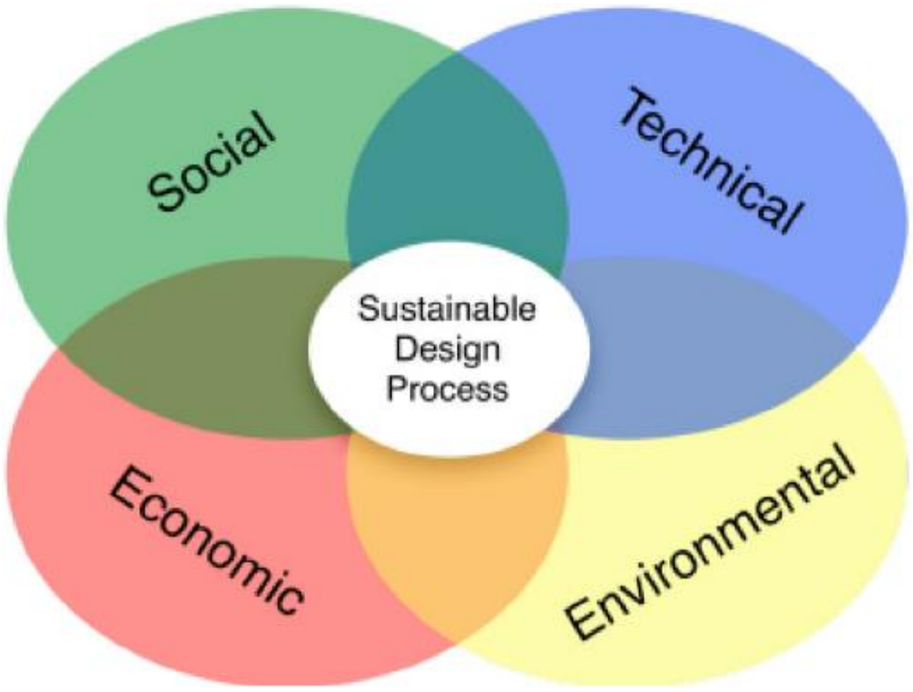
In line with Scottish Government guidance, the recommended option selection was also based on technical, social, and environmental performance which considered the following:

- **Technical** – Flood risk, operational risk, health and safety risks, climate change adaptability.
- **Environmental** - Risk to; biodiversity, flora, fauna, water quality & hydromorphology, cultural architectural & archaeological value, landscape & amenity.
- **Social** - Risk to; residential properties, high vulnerability properties, community infrastructure and amenity, local employment.

The scheme generally has a neutral impact on environmental criteria and a strong positive impact within the social and technical aspects.

There will be some temporary negative impact during construction within the working area associated with noise, dust, pollution, traffic management, etc.

A Construction Environmental Management Plan (CEMP) will be required to mitigate these issues. Of critical concern was the proximity to the Loch Leven Special Protection Area (SPA). The scheme will have no direct impact on the Loch Leven SPA. The CEMP will include mitigation to prevent pollution during construction.



Standard of Protection

The scheme will provide protection up to the predicted 1 in 200 year flood (the flood that has a 0.5% chance of being exceeded in any year).

The proposed flood walls and embankments will be designed with the capability to be raised in the future to adapt to climate change, without the need to strengthen the foundations.

The scheme also includes improvements to culverts which have been designed to account for increased water flows due to future climate change.

Economic Appraisal

In managing flood risk, the Council must have regard to the economic impact of its actions. The cost of the flood scheme can't exceed the benefits, i.e. the benefit/cost ratio must be greater than 1.0.

An economic appraisal (or cost benefit analysis) was carried out and the estimated outline cost and predicted benefits offered over time by the flood scheme were assessed. Industry-standard, 'best practice' techniques were used to estimate the potential flood damages and costs.

Estimated Benefits

The benefits were based on the damages likely to be avoided with the flood scheme in place over 100 years, including:

- Direct property damages (residential and non-residential)
- Emergency services costs and impacts on health
- Local authority, emergency and recovery costs
- Damage to vehicles
- Damage to roads & closure impacts;
- Social equity and climate change allowances
- Evacuation

Estimated Costs

The estimated cost of the project considers all elements (e.g. design, construction and maintenance).

The outline design – and therefore the cost - may change further following consultation with the community and other key organisations such as SEPA, SNH and the public utility companies. Construction costs also could change as the scheme is developed further during detailed design and as more information is obtained about the site. As there are many risks and uncertainties, a contingency amount (known as an 'optimism bias') is also applied to the calculations.

The current estimated cost of the project is £14M, including this contingency amount.

Benefit Cost Ratio

The current Benefit Cost Ratio is 1.1 and so the scheme remains economically viable.

Flood Risk Management (Scotland) Act Funding

The proposed flood scheme at Kinross has been included within the national priority list of flood schemes and forms part of the current Forth Estuary Flood Risk Management Plan and Local Flood Risk Management Plan. The Council and the Scottish Government have agreed in principle to fund the proposed scheme. Perth and Kinross Council will provide 20% towards the overall capital cost and the Scottish Government will contribute the remaining 80%, assuming that the Scheme remains economically viable.

The proposed scheme has increased in size to protect more areas at risk of flooding. Recent increases in inflation have also had a dramatic effect on construction costs. As a result, additional capital funding is required to meet the estimated cost of the scheme and this will have to be secured from the Scottish Government and the Council's capital budget.

It is important to note that implementation of a scheme is still likely to be some time away and is not yet certain, due to the need to secure additional funding, statutory consents and other approvals.