

LANGHOLM

Flood Protection Scheme

COMMON QUERIES

The Project Team have addressed a number of common queries that have been received during the engagement process on the following themes:

- Sediment Management
- Natural Flood Management
- Height of Defences and Impact on Views
- Scheme Not Needed/Town has Never Flooded
- New Buccleuch Park
- Secondary Flooding
- Environmental Impact Assessment
- Engagement



Sediment Management

In some instances, the removal of sediment (gravel) from a river channel will increase the capacity however any positive impact will only be seen during low flows. When it was assessed in Langholm the amount of sediment in the river was found to be negligible compared to the amount of flow during flood/extreme events. The study undertaken showed the removal of the sediment would offer no significant or long-term benefits on water levels in a flood event.

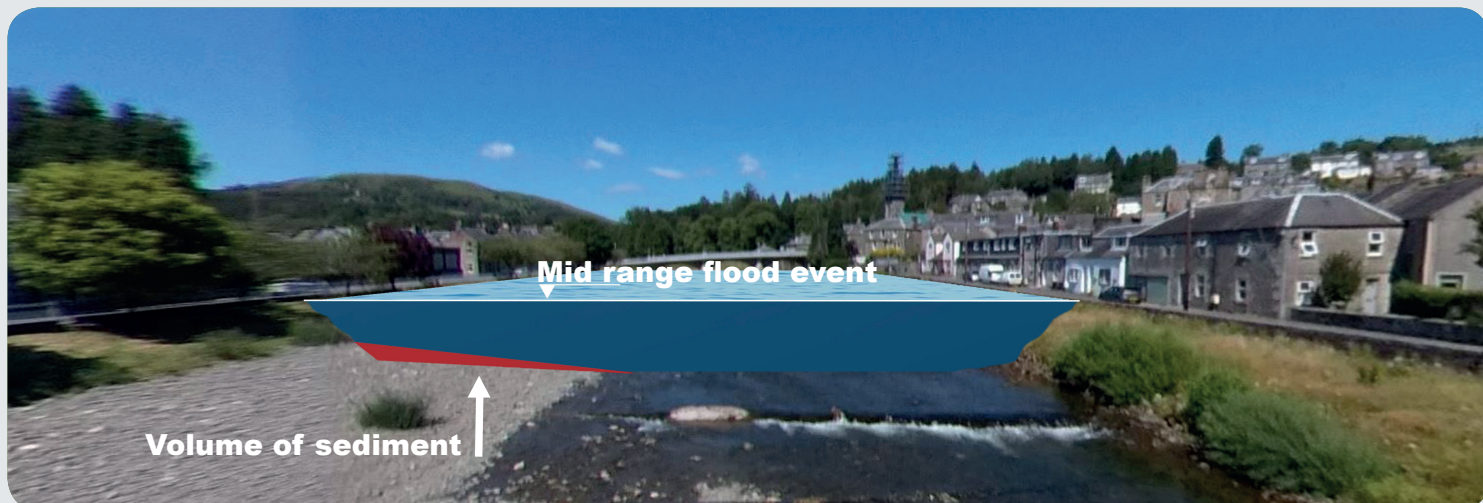


Image showing proportion of sediment in the River Esk during to a mid-range flood event

Reference was made that the river sediment appeared to have increased in recent years. Surveys undertaken in 2011 and 2019, between the Langholm (Thomas Telford) Bridge and the suspension bridge, revealed that in fact there was no significant change in bed levels over this time.

Sediment management is an ongoing process. The river will naturally carry and deposit sediment and so removal would need to be repeated on a regular basis. The removal of sediment, in addition to not being a solution for protecting Langholm in extreme flood events, will generally have a negative environmental impact on the river ecosystem resulting in a loss of wildlife and habitats.

It is acknowledged that dredging was undertaken in the past, and while this may have been undertaken to reduce bed levels at specific locations, the evidence shows that overall effects would be minimal at all but low flow events. It should also be acknowledged that another reason dredging was undertaken here, and at many other locations across the region, was for a supply of washed gravel, useful in farm drainage works or as a general source of aggregate. Further information on dredging can be seen in the document **Floods and Dredging – a reality check**.

<https://www.ciwem.org/assets/pdf/Policy/Reports/Floods-and-Dredging-a-reality-check.pdf>.

Natural Flood Management

Natural Flood Management (NFM) uses the environment to store or slow down flood water. The planting of woodlands, wetland and storage creation and river restoration are some of the measures that can help. In addition to benefitting flood control, NFM can also increase biodiversity, water quality, and can increase resilience to climate change. Commercial Forestry Practices (tree species, drainage works, road construction and felling operations etc.) can also have an influence on flood risk and improvements to these practices can contribute towards reducing flood risk downstream during less extreme events.

NFM options have been extensively investigated and modelled but none were found to offer sufficient impact on the potential flood levels in Langholm. Modelling shows that while there might be some benefit during a minor flooding event it would not help in a major flood.

Improvements within the catchment that provide NFM opportunities can be progressed as part of the overall catchment management by those currently in control of the land. The Council along with stakeholders would support any future development in that regard. NFM does have the potential to offer minor reductions in flood risk and should be encouraged. However, their implementation will be a long term approach and would never replace the need for the proposed defences within the town.

The image on the following page gives an overview of how NFM can work in practice (but it should be noted that not all measures are suitable for Langholm and those considered did not reduce water levels by any significant amount or were not feasible).

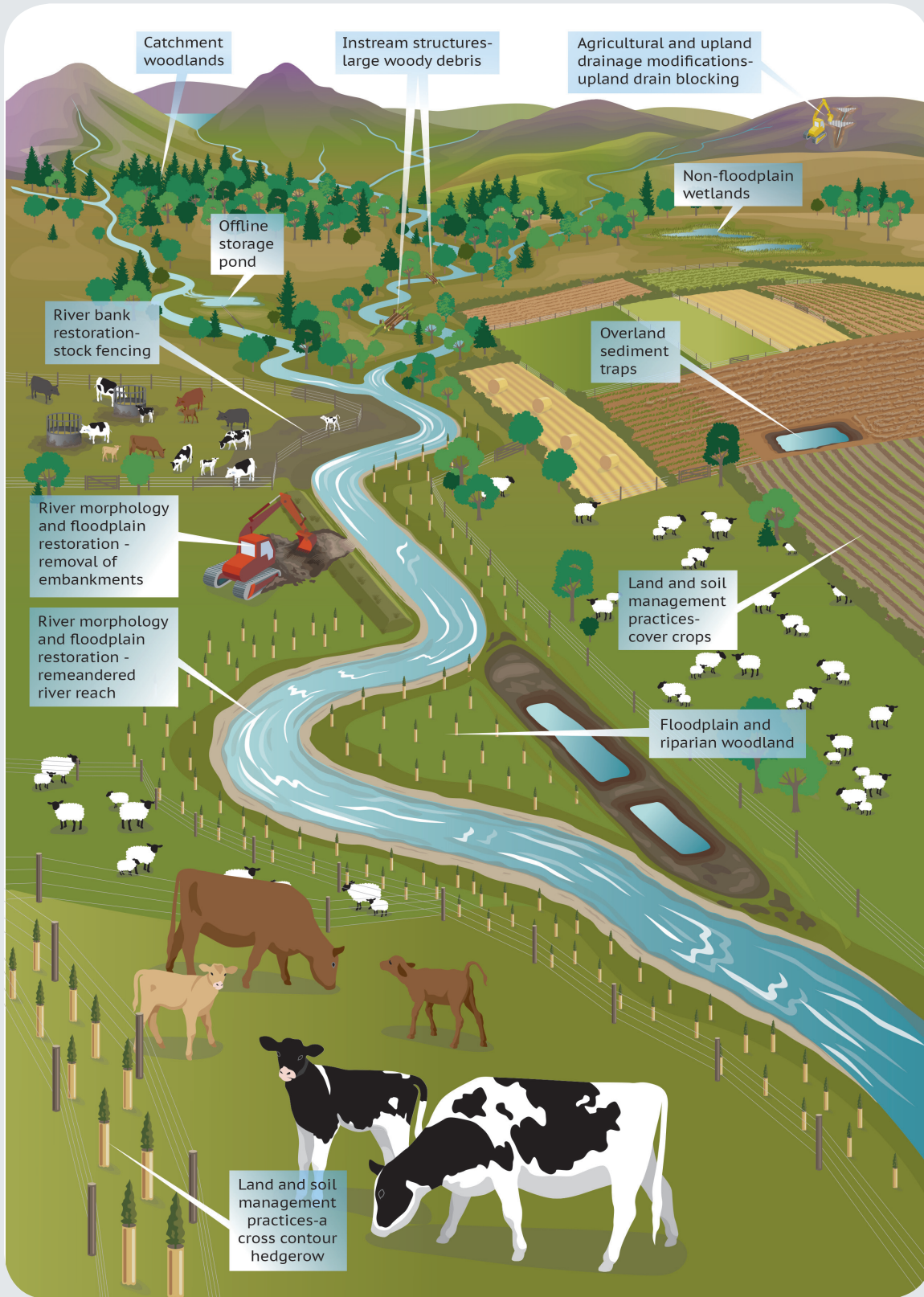


Image taken from the Scottish Environment Protection Agency's NFM Handbook

Height of Defences and Impact on Views

The height of walls and embankments varies throughout the town to maintain a consistent 1 in 200 year standard of protection. Where there is sufficient width, the preference is usually to build an embankment, as this generally is more in keeping with the riverbank environment.

There is no doubt that in certain locations there will be a significant impact on views of the river but unfortunately this is the trade off when providing effective, long-term protection from flooding.

To assist in reducing the impact on river views glass panels can be used on top of solid walls to maintain visibility.



Artist's impression of proposed wall along Elizabeth Street

The location of glass panels will vary and could be continuous lengths or smaller sections. This will be part of the detailed design but the emphasis will be on keeping the defences as transparent as possible and maintaining as much visibility to the river as we can.

With regard to current access routes and use of some of the river banks for recreation, fishing etc., this will form part of the detailed design process and there is certainly no intention to block off such access or use. The defences will include access points (these can for example be stepped arrangements over low walls, sloped pathways, or even gates).

Scheme Not Needed/Town has Never Flooded

The Project Team are aware that Langholm has never experienced any significant flood events which reached residential or business properties. However, predictions show that extreme weather and flooding will increase. The scheme is, after all, to protect against future events and not the past.

A key example we used was that Newton Stewart did not experience any significant flood events until 2012, and then again in 2015.

The Scheme was identified within the Strategic Flood Risk Appraisal carried out by the Council in 2007 which highlighted Langholm as one of the top five settlements in the region in terms of the number of properties at flood risk. SEPA also published their National Flood Risk Assessment in December 2011 which identifies Langholm as a Potentially Vulnerable Area.

The Solway Local Flood Risk Management Plan 2016 imposes a duty on the Council to deliver a Flood Protection Scheme for Langholm. The main funding for the scheme (80%) will come from Scottish Government.

The 80% Scottish Government Funding is for use on the identified Flood Protection Schemes only and cannot be used for any other purpose.

New Buccleuch Park

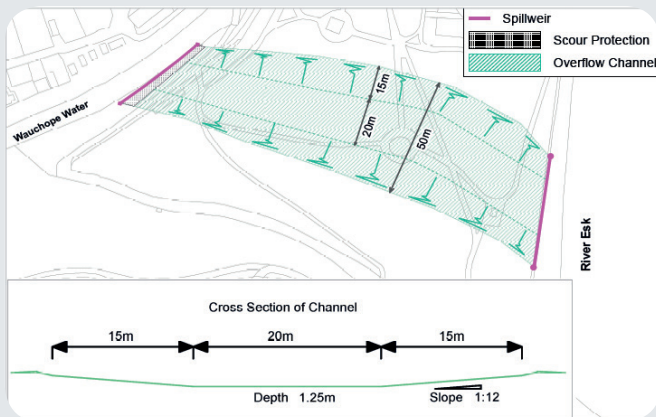
The Project Team are aware of the proposal for the new park and have worked with the Park Sub-Committee on this.

The overflow channel located within the park will be just over 1 metre deep at the lowest point. The channel would be landscaped and grassed with very shallow slopes so that it can be fully integrated into the park.

The purpose of the channel is to reduce the flow of water along the Wauchope in flood events by allowing water to cross this site earlier than it currently does. The site will be dry most of the year and is designed to come into effect only during extreme events. The purpose of this feature is to redirect some of the flood waters thereby allowing some of the wall and embankment heights in the town to be reduced.

By including the channel, the defence heights can be reduced along Elizabeth and George Street by approximately 160mm and along Caroline Street by approximately 100mm.

The War Memorial will be unaffected by any works or the flows in the channel.



Example of Overflow Channel through Buccleuch Park

Secondary flooding

Secondary flooding (the surface water behind the defences) will be considered in more detail during the detailed design phase. However, the current proposals do not increase the surface water flood risk. With the defences in place the surface water will still flow freely to the river as it does now. During times when river levels would prevent the surface water draining directly to the river, storage and pumped systems may be required to ensure there was no ponding or flooding from surface water. This approach is the standard method by which flood protection schemes address the issue of surface water “backing-up” at times of high river flows. Similar arrangements will be incorporated for the Scottish Water wastewater network.

Environmental Impact Assessment

The Project Team initially undertook an assessment which gave a preliminary finding that such an assessment was not necessary. However following further assessment and consultation with SEPA we have agreed that an Environmental Impact Assessment be carried out. This will take approximately six months to carry out. The EIA was subsequently considered appropriate following a Water Framework Directive (WFD) Assessment which identified that the scheme had the potential to cause a deterioration of the morphological (the shape / form of river channel and how that can change over time) status of the River Esk and Wauchope Water in the locality of Langholm. This can sometimes be addressed through the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) or CAR process with a Good Practice Test and derogation assessment. In this case it was SEPA’s view that the works may lead to deterioration of the water environment beyond the locality of Langholm i.e. beyond the location of the defences. This assessment will be carried out in due course and prior to any consideration to publish the scheme. The EIA will consider the impact of the Scheme on the surrounding environment, which includes the air, soil, water and human health (this includes visual impacts), both during construction and in the long term.

Engagement

The main engagement undertaken to date is as follows:

- Option Review 1 Meeting in May 2019 looked at all of the options and took forward the ones which would protect Langholm from flooding. This meeting was attended by SNH, Scottish Water, Local Elected Members, Langholm, Ewes & Westerkirk Community Council with contributions and discussions from SEPA.
- The first Public Engagement event was held over three days in Langholm in June 2019 which presented the outcomes of the Option Review. It was attended by 96 people who left feedback which was considered and responded to.
- Option Review 2 Meeting in January 2020 involved attendees as above and progressed the options to a preferred scheme.
- The second Public Engagement was again a three day event held in Langholm in February 2020 and attended by 208 people with feedback recorded and responded to.

The Project Team made every effort to publicise the engagement events. Both the June 2019 and February 2020 events were advertised on social media, with leaflets left in public buildings. Posters were placed around the town and each property facing the river had a notification/flyer delivered 2 weeks prior to the event.

Further engagement events are being considered by the Council before a decision is made on progressing the Scheme.

Further details can be found at www.dumgal.gov.uk/langholmfloodprotection