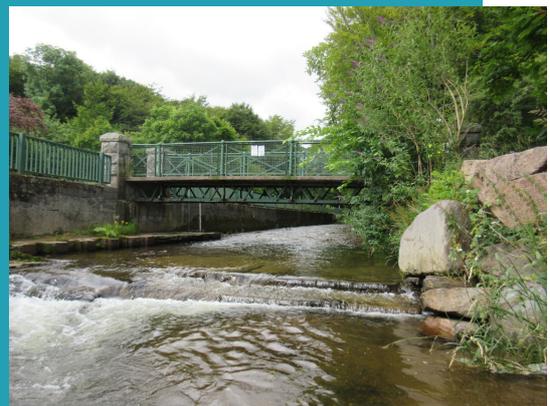
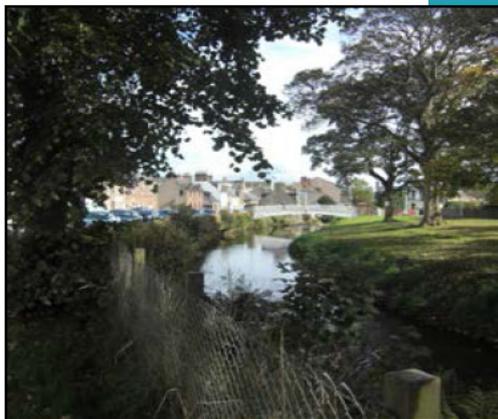


Stonehaven Flood Protection Scheme Non-Technical Summary

February 2017

Aberdeenshire Council



INTRODUCTION

Major flooding events over the last century have significantly impacted local residences and businesses within the lower reach of the River Carron, Stonehaven. Major flooding events have occurred in Stonehaven over many years, most recently 1988, 1995, 2001, 2002, 2007, 2009 and 2012 which have caused the evacuation of nearby residents.

FLOOD RISK MANAGEMENT ACT

Aberdeenshire Council are promoting the Scheme as a formal protection scheme under the Flood Risk Management Act (2009). The Scheme is being designed in accordance with this Act, the 'Flood Risk Management (Flood Protection Schemes, Potentially Vulnerable Areas and Local Plan Districts) (Scotland) Regulations 2010', and the appropriate guidelines.

INTRODUCTION

This document presents a summary of the information from the Environmental Assessment (EA). The EA has been prepared to assess any potential significant environmental effects which may occur as a result of the proposed Stonehaven Flood Protection Scheme, hereafter referred to as 'The Scheme'.

The EA has been prepared by Mott MacDonald in support of The Scheme. The EA is published in three volumes, as follows:

- Volume 1: Non-Technical Summary (this report)
- Volume 2: The Environmental Assessment technical report
- Volume 3: Figures and Appendices

SCHEME BACKGROUND

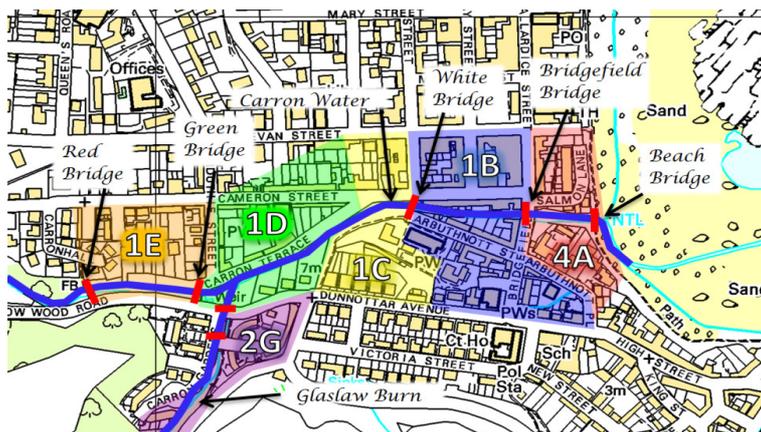
Stonehaven Old Town has been subject to repeated flooding with recent events occurring in 2009 and 2012, which caused considerable damage.

The Scheme along with other minor work seeks to modify the flow regime of the watercourse of the river to reduce the likelihood of Carron Water flooding and the resulting damage to property and infrastructure. The Scheme at Stonehaven aims to not only alleviate flooding, but have a positive economic impact on the town, allowing for future development within the area protected by the Scheme.

The Scheme will be designed to provide a 200 year + climate change standard of protection as this is the current standard required by the Flood Risk Management Act 2009 and for planning purposes and the threshold for unacceptable flood risk.

SCHEME LOCATION

Stonehaven is 24km south of Aberdeen in a sheltered position on Stonehaven Bay. Carron Water and Burn of Glaslaw flow through the south of the town of Stonehaven. Where visible the presence of the Carron Water offers a dynamic, natural feature within the relative urban character of the town. The small but valued open spaces next to White Bridge and Green Bridge act as green buffers from which it is possible to appreciate the context of the river within the overall setting and provide visual links with the semi-rural, wooded area to the south west of Stonehaven.



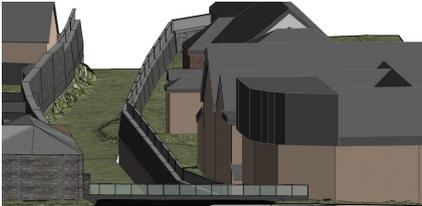
Background map Ordnance Survey data © Crown copyright and database.



Visualisation of White Bridge and flood walls

1.1.2

Visualisation of section of the Scheme



Self Closing Flood Barrier

The Self Closing Flood Barrier is a carefully designed self-rising floodgate. Its design uses the approaching floodwaters to automatically raise the barrier. The automatic operation, along with its minimal footprint does not require steps or ramps which makes this type of defence ideal for unmanned sites, for where visually a permanent barrier may not be acceptable, or where there may be insufficient warning and manpower to manually operate the installed barriers.

SCHEME DESCRIPTION

The main elements of the Stonehaven Flood Protection Scheme are summarised below:

General

- Diversion of utilities;
- Works in channel to construct walls;
- Reinstatement of gardens following construction;

Burn of Glaslaw

- Replacement of culverts at Woodview Court and Low Wood Road;
- Construction of walls along both banks adjacent to Carron Gardens;
- Slope stabilisation on the right hand bank adjacent to Woodview Court;
- Strengthening works to basement level of properties adjacent to the river;
- Construction of an embankment at the upstream end;

Red Bridge to Green Bridge

- Replacement of Red Bridge and installation of new abutments;
- New walls along the Low Wood Road and Carron Terrace;
- Demolition and replacement of a garage;

Green Bridge to White Bridge

- New self-closing barrier walls on Cameron Street near White Bridge;
- Construction of new walls along Carron Terrace;
- Lowering of island downstream of Green Bridge and reprofiling river channel, removing existing weirs;
- Removal of Green Bridge and a garage;
- New replacement crossing downstream of Green Bridge;
- Replacement of boundary wall of Abbeyfield House;

White Bridge to Bridgefield Bridge

- New self-closing barrier walls and culvert at the rear of Cameron Street;
- Raising of White Bridge;
- Lowering of bed of the river;
- Construction of a pumping station outfalling to the river;
- Underpinning of buildings;

Bridgefield Bridge to Beach Bridge

- Modification to Bridgefield Bridge parapets;
- Modifications to Beach Bridge and abutments;
- Raising or replacement of existing boundary walls of properties on Arbuthnott Place and Salmon Lane;
- Removal of a garage;



THE SITE

Carron Water and Burn of Glaslaw flow through the south of the town of Stonehaven.

Carron Water and its tributaries are important for aquatic wildlife including trout, salmon, European Eel, Lamprey, and otters. The watercourse, banks, and surrounding trees, park, and woodland are important habitats for a variety of species including bats and breeding birds. Loch of Lumgair Site of Special Scientific Interest (SSSI) is the only statutory protected nature conservation site within the catchment, located along a tributary of the Burn of Glaslaw 4km upstream from the works. Fowlsheugh Special Protection Area (SPA) lies approx. 4km south along the coast and Garron Point SSSI lies approx. 2km north along the coast.

The sections of the proposed scheme from Green Bridge to Beach Bridge are within the Stonehaven Conservation Area. White Bridge, 19 Bridgefield, and the river walls (all of which will undergo alteration as part of the scheme) are Category C listed. There are a number of other Category A, B, and C Listed Buildings within 150m of the proposed works. Of particular note is the Category A listed St James the Great Episcopal Church on Arbuthnott Street approximately 20m south of the works at White Bridge.



Fluvial flooding risk from the Carron Water results from heavy or prolonged rainfall and/or snowmelt in the Carron catchment causing river levels to rise, with the potential for the river banks to be overtopped and flooding to land and properties to occur. Stonehaven is also at risk from surface water flooding. The topography of Stonehaven means that surface water will be shed from the higher areas in the central, west, and north-west parts of the town towards the lower areas at the coast and the Carron and Cowie valleys.

Comments, queries or requests for further information can be made to flooding@aberdeenshire.gov.uk .

ENVIRONMENTAL ASSESSMENT



An Environmental Assessment (EA) is a means of drawing together, in a systematic way, an assessment of the likely significant environmental effects (both positive and negative) arising from a proposed development.

A request for a Screening Opinion for Environmental Impact Assessment (EIA) was made under The Flood Risk Management (Flood Protection Schemes, Potentially Vulnerable Areas and Local Plan Districts) (Scotland) Regulations 2010 for the Stonehaven Flood Protection Scheme in December 2014. The Planning Authority confirmed that a mandatory EIA was not required, however requested that a full assessment of the environmental impact of the proposed development be carried out given the location and extent of the proposed works.

PROGRAMME

Construction of the Scheme would commence following the completion of procedures defined in Schedule 2 of the Flood Risk Management (Scotland) Act 2009 and confirmation of funding, planning approval, detailed design and the construction contract procurement process.

As such the start date cannot be confirmed at this stage however, it is unlikely that construction would commence before 2018. Construction would be phased and would be undertaken over a period of approximately 2 years.

This EA has been undertaken to assess potential likely environmental effects of the Scheme. The topics that have been considered are:

- Air Quality;
- Ecology;
- Historic Environment;
- Landscape and Visual;
- Noise and Vibration;
- Soil, Geology and Contaminated Land;
- Transport and Access; and,
- Water Environment

Consultation

Consultation has been undertaken by Aberdeenshire Council and their representatives as part of the EA process. The organisations that have been consulted include:

- Forestry Commission;
- Scottish Environment Protection Agency (SEPA);
- Stonehaven Flood Action Group;
- Stonehaven Town Partnership;
- Scottish Natural Heritage (SNH);
- Historic Scotland;
- Stonehaven and District Angling Association; and,
- Dee District Salmon Fishery Board.

ENVIRONMENTAL EFFECTS



Air Quality

An assessment of Air Quality was carried out to address pollution that may arise from construction site plant, construction traffic and traffic management measures as well as an assessment of construction dust.

The assessment concluded that traffic movements in all construction phases are found to have a negligible effect on air quality as a result of construction of the Scheme. Air quality effects are concluded to be not significant.

Potentially significant dust emissions will only occur during construction and should be managed through using best practice techniques to minimise effects; therefore, effects from construction dust emissions are described as being temporary. Pre construction air quality conditions will be returned when the construction phase is complete.

Following implementation of air quality management measures by the appointed contractor during construction the expected level of risk to air quality from construction activities is expected to be reduced to 'low to negligible' and significant residual effects should be avoided.



Ecology

An Ecology Survey (Extended Phase 1 Habitat) and desk study have been undertaken to identify sensitive species and sites located in close proximity to the Scheme. Subsequently, a number of species surveys were undertaken to understand ecological conditions, constraints and opportunities within and around the Scheme area.

Surveys undertaken have identified that the area affected by the Scheme is being used by otters, bats, migratory fish and a variety of breeding and wintering birds. However, the value of the site for these species was considered to be of neighbourhood value, hence no significant effect on these species is likely as a result of the Scheme.

The anticipated significant effects from the Scheme will be addressed by suitable design, appropriate working methods, an ecological mitigation strategy and implementation of an Environmental Management Plan, thus no significant residual effects are anticipated.

Historic Environment



A historic environment assessment was carried out to recognise, understand and interpret the value of the heritage assets which have the potential to be impacted by the Scheme, both physically and in terms of their setting.

Scheme construction will significantly affect the setting of a small number of heritage assets, this will mainly be from construction activity within the river corridor, including interruption of views by plant located or moving within the Scheme site and noise associated with construction. The temporary removal of the White Bridge and Red Bridge during construction will also result in significant effects as their important historic relationship with the river corridor, associative value with the other bridges over Carron Water, and in the case of the White Bridge, its landmark value and visual relationship with Category A listed St James the Great Church will be temporarily lost.

The permanent appearance of the Scheme will result in significant adverse effects for areas of Stonehaven Conservation Area due to the loss of the existing Green Bridge structure and the construction of a new bridge in a different position over the river, and the raising and new structural design of the White Bridge, which will also permanently significantly affect the setting of St James the Great Church.

Operational significant effects will be beneficial because the Scheme will reduce the fluvial flood risk to the historic core of the town, protecting the significant historic building stock in the town from repeated flood damage.



Landscape and Visual

During the construction phase it is likely that the townscape character areas will be significantly affected by the proposed works. The presence of construction activities, site hoarding and machinery will temporarily reduce the landscape condition, quality and tranquillity. The Scheme proposes large-scale civil engineering works that will cut through the centre of each character area. Some tree removal will be necessary in a number of locations. The wider landscape/townscape character should remain unaffected by the Scheme.

The majority of significant, adverse visual effects are temporary and will occur during the construction phase of the Scheme. The close proximity of the Scheme to sensitive receptors ultimately results in construction activities, hoarding and machinery being dominant features in views.



Once the construction activities have been completed and all site hoarding, machinery and activities have been removed, the impact upon the assessed townscape character areas will be reduced to a level where it is no longer significant. Sensitive material selection, the use of self-raising barriers and the inclusion of replacement tree planting will help to reduce the changes to the condition and quality of the townscape character areas.

Visually, only one sensitive receptor will be permanently adversely affected by the Scheme. These are people in properties on Carron Terrace and this is largely due to the creation of the ramped access and associated retaining walls. It is noted that this effect has been reduced through the moving of the Green Bridge location as part of the modifications of the Flood Risk Management Act application.

Noise & Vibration

A noise and vibration assessment has been undertaken to determine the likely impacts arising from the construction and operation of the Scheme.

Noise and vibration effects from the construction of the Scheme will be temporary and only occur during the agreed site hours of operation. With mitigation any exceedances can be minimised. Additionally, it should be recognised that elements of the construction works are a transient, and will gradually move along the river bank and are therefore unlikely to take place at a specific location over an extended period of time.



There will be an increase in road traffic while the construction works is being undertaken. However, the impact of this is negligible in terms of noise and vibration. It is anticipated that there would no permanent noise and vibration effects associated with the construction and operation of the Scheme.

Soils, Geology and Contaminated Land

An assessment of the potential impacts associated with construction and operational phases of the Scheme has been undertaken in relation to geology, soils and hydrogeology (including land contamination). The assessment identified potential effects that the Scheme may have on geology, soils and hydrogeology within site and surrounding area. Mitigation measures have been proposed to minimise the scale of the impacts identified where necessary.

Following the implementation of a sufficient design to take into account mitigation measures, there are no predicted residual impacts to geology, soils and hydrogeology, with the significance of effect assessed as Neutral.

Transport and Access



The construction of the Scheme is likely to generate various vehicle trips delivering materials, plant and staff to the site. Traffic to and from the Scheme will be instructed to route via the A957 Dunnotar Avenue on journeys between the site and the A92 and A90 (and hence the wider road network). Routeing vehicles this way will minimise the length of roads within Stonehaven town centre subject to the additional traffic from the Scheme.

Overall the predicted significance of effects arising on transport and access has been assessed as negligible and not significant, however a Construction Traffic Management Plan will be implemented to control the traffic movements during construction of the Scheme, which will include a stipulation to route vehicles along the A957 Dunnotar Avenue as described above and other measures to control traffic movements.

Water Environment

No significant residual hydrological effects have been identified during the construction or operational phase of the Scheme. However changes to channel morphology of Carron Water and Burn of Glaslaw may have minor permanent significance during operation. Post construction channel morphology should be monitored to allow any detrimental changes to be detected. If significant detrimental effects are identified through monitoring, remedial measures should be implemented to reduce any detrimental effects.

Summary

Overall the negative residual impact of the proposed Stonehaven Flood Protection Scheme is deemed to be negligible. There are also a number of benefits for the project to provide a positive effect to the local community



Next Steps

To manage the residual environmental effects of the Scheme an Environmental Management Plan will be prepared. This will identify the actions that are required, when it should occur and who is responsible for the delivery of the specific action.