Almondbank Flood Protection Scheme

ENVIRONMENTAL STATEMENT

Non-Technical Summary
Introduction

Perth and Kinross Council are promoting a flood mitigation scheme in the village of Almondbank, near Perth, (indicated in Figure 1 below) under the Flood Risk Management (Scotland) Act 2009 (FRMA). The scheme would provide significant safety, social and economic benefits to residents and commercial operations within Almondbank by reducing the risk of flooding.

The key objectives of the scheme are to:

- Reduce the risk of flooding from the River Almond to people, property and the natural environment within the village of Almondbank.
- Ensure any proposed flood mitigation works are both technically sound and economically viable.
- Ensure that proposed flood mitigation works have minimum effect on the environment.
- Ensure that the works have minimal impact on public open space and the use of this open space, specifically they should not:
  - be visually intrusive;
  - obstruct public access;
  - adversely affect the general amenity of the river.
- Ensure the works do not provide a health and safety risk to the people of Almondbank.
Environmental Impact Assessment

The findings of the Environmental Impact Assessment for the proposed scheme have been reported in the Almondbank Flood Mitigation Scheme Environmental Statement.

This Non-Technical Summary outlines the principal environmental impacts identified during the assessment and the proposed mitigation.

Consultation

Consultation on the flood mitigation scheme has been undertaken through a series of public exhibitions and consultation events in Almondbank. Information has also been conveyed to the public through press releases and newsletters.

Specific consultations have also been carried out with landowners and affected parties as well as environmental regulators.

The purpose of the consultation exercise was to establish existing site conditions and assist in defining the key environmental issues associated with the proposed scheme. Feedback from consultations has helped inform the design of the scheme and environmental protection measures.

Alternatives

Various studies were undertaken between 1993 and 2003 to assess the risk of flooding at Almondbank and to suggest appropriate flood defence measures. These studies included consideration of a number of options to address flooding and culminated in the design of a flood mitigation scheme for the village in March 2004. Further investigations were then undertaken and the scheme design refined in order to ensure full protection of Almondbank from flooding up to a 1 in 200 year flood event.

Seven potential solutions to the flooding problem were considered as part of the planning and design process leading to the identification of a preferred scheme. The process of selecting the preferred option was undertaken based upon an assessment of the merits of each option and the extent to which each fulfilled the scheme objectives.

Existing Environment

Almondbank is a small historic village originally built up on either side of a stone arch bridge crossing the River Almond. More recent developments have taken place slightly further downstream of this crossing point where the land is flatter and extends to the river edge.

The village comprises several groups of houses (some of which are classed as listed buildings), the Vector Aerospace site, a trout fishery, a playing field and a bowling club (see Figures 4.1a and 4.1b in Appendix A).
A number of locations in the Almondbank area are particularly susceptible to flooding, these include:

- College Mill Trout Farm;
- residential properties on the left bank of the River Almond;
- a bowling green;
- a playing field;
- Lochty Industrial Estate;
- Vector Aerospace site; and
- a group of residential properties on the right bank of the River Almond including Low’s Work Cottages.

A particularly significant flood was experienced in January 1993 causing extensive damage to properties and structures in the centre of the village. As can be seen in Image 1, there has also been damage to the riverside road/footpath between the playing field and the river.

The River Almond and its tributary the East Pow Burn are the main watercourses in the village and are part of the River Tay Special Area of Conservation. Other features associated with these watercourses include Low’s Work Weir (a listed building), College Mill trout farm, the wastewater treatment works, Town’s Lade and a number of surface water outfalls. The banks of both the River Almond and the East Pow Burn are tree lined and this links with woodland in the wider area. Beyond the river lie areas of amenity grassland, agricultural land and the gardens of residential properties. The River Almond and East Pow Burn and associated bankside trees provide suitable habitat for wildlife, including fish, otter, bats and birds.
The main commercial premises comprise the Vector Aerospace site (Image 4), situated at the confluence of the River Almond and East Pow Burn and adjacent to both watercourses, and the College Mill trout farm (Image 2) on the opposite bank of the Almond further north. There are a number of public access routes close to the River Almond and these are heavily used for recreational purposes, particularly dog walking by local residents (Images 3, 4 and 5).
Some sections of the banks of the River Almond and the East Pow Burn have been protected from erosion in the past, including adjacent to the bowling green (Image 6) and along the banks of East Pow Burn at Vector Aerospace (Image 7). In response to flood events in 2011, erosion protection has been installed along the River Almond downstream of Low’s Work Weir (Image 8) and on the East Pow Burn at Lochty Park (Image 9).

The Proposed Scheme

The scheme is illustrated on Figures 4.1a and 4.1b – Scheme Overview (in Appendix A). It comprises a combination of flood defence walls, generally reinforced concrete with stone masonry, together with earth embankments. Bank reinforcement using sheet piles and erosion protection is also proposed in some locations. The playing fields in the centre of the village would be utilised as a flood storage area. The River Almond footbridge and the road bridge at the confluence between the River Almond and East Pow Burn would be raised. The existing bridge crossing the East Pow Burn at the entrance to Lochty Park would also be replaced. Improvements to existing
road drainage would be made at Bridgeton, Main Street and the Vector Aerospace site.

**Environmental Impacts and Mitigation**

The proposed scheme and associated mitigation measures have been designed to minimise adverse environmental effects. Nonetheless some impacts would arise from the proposals, as summarised below:

**Land take**

There would be some permanent loss of land as a result of the construction of flood walls and embankments and also some additional temporary land take during the construction period to allow for access to the works area. Land temporarily affected would be reinstated following scheme completion. The siting of the flood mitigation proposals has been chosen to reduce tree loss as much as possible, although some tree removal and thinning along the river banks would be necessary to accommodate the flood defences.

A number of private residential properties adjacent to the River Almond and East Pow Burn would be affected by the proposals primarily through the construction of flood defences along the perimeter of private gardens. Other properties may be affected through temporary land take within gardens during the construction period; however this land would be reinstated on completion of the works.

Public access routes in the locality of the flood mitigation scheme would be temporarily affected, however, a staged approach to construction should ensure that such routes are passable for the majority of the construction period. New access to specific properties would be provided where required. A new section of access road would be constructed across the existing playing field car park and the existing pavilion demolished and rebuilt in a similar position to its current location.

**Landscape and visual**

The main landscape and visual impact during the construction phase would be the removal of trees and other vegetation from various points along the River Almond and East Pow Burn to enable the installation of the sheet piling, flood walls and erosion protection. Appropriate landscaping, including tree planting, would be implemented as mitigation. The precise location of the erosion protection on the embankments and the flood walls would be adjusted to reduce the need for removal of high-quality mature trees and tree condition surveys would be undertaken.

Views of the proposed flood mitigation measures from residential, recreational and commercial receptors are constrained to a relatively narrow area due to a combination of existing belts of woodland, steep banks and twisting roads and tracks. The flood defence structures would be relatively inert in that they would be motionless, emit no light or noise (except for the occasional use of the small pumping
station at the trout farm) and, with replanting and vegetation re-growth, would blend into the surrounding area.

**Water quality and hydrology**

During the construction period there is potential for sediments and other pollutants (such as chemicals, fuels, oils, concrete) to enter the River Almond and the East Pow Burn as a result of vehicle movements, earth moving and building activities or accidental spillage. There is also the potential for sediment release due to physical disturbance of existing riverbanks and riverbed, particularly through the installation of sheet piles and erosion protection.

Water quality would be protected by the implementation of appropriate pollution control measures throughout the construction period. Careful reinstatement, replacement and, where possible, enhancement would ensure that river banks are recreated so as to allow vegetation to re-establish. In addition, similar riverbed characteristics would be restored where appropriate to enable colonisation by aquatic vegetation.

**Ecology**

The location and design of the flood mitigation works has been developed to minimise tree removal, however there would be disturbance to and loss of habitat as a result of the creation of flood walls and embankments and the need to access the river bank for these works. This would mainly involve removal of areas of bankside woodland, including some mature trees with bird breeding habitats and possibly bat roosts. Where possible mature trees would be retained and appropriate landscaping including the planting of additional native broad-leaved trees would be carried out as part of site restoration. All site clearance works would be undertaken in accordance with a detailed specification. A tree condition survey would be carried out prior to works commencing.

Any otter breeding sites that would be affected would be closed off and alternative sites provided elsewhere. Trees/groups of trees that would be affected would be inspected for signs of bats and relevant licences obtained if any bat roosts are to be disturbed. Vegetation/tree removal would either be undertaken outside the bird breeding season or trees and scrub checked for the presence of breeding birds/active nests prior to site clearance. Bird and bat boxes would be erected on completion of the works.

Any works within watercourses would be undertaken to avoid sensitive periods for fish and water quality would be protected by the implementation of appropriate pollution control measures during the construction period.

**Cultural heritage**

Potential adverse impacts on known features of cultural heritage interest have been avoided by careful scheme design. If significant cultural heritage assets/
archaeological features are encountered during construction appropriate mitigation would be put in place.

**Geology, soils and contaminated land**

Potential impacts during construction include compaction of soils (through the use of heavy plant and equipment) and this may result in increased erosion with the risk of pollution to surface waters. Inappropriate soil stripping, storage, handling and reinstatement of soils can also result in degraded soil condition. Site works would be undertaken in accordance with good practice construction guidelines to minimise the potential impacts on soils. All material to be used or reused during construction would be stockpiled in designated areas, with appropriate containment and protective measures in place, and would be carefully transported and handled.

**Air quality and noise**

There is potential for elevated dust, vehicle emissions and noise/vibration during the construction of the flood mitigation works. However, this would be localised and of short term duration as construction activities would be phased and works would be split so as not to occur continuously in all areas, thereby controlling the potential level of dust emission and noise/vibration. Construction activities would incorporate standard measures aimed at reducing dust and noise emissions thereby reducing the risk of disturbance or nuisance.

**Traffic and access**

All construction traffic is expected to travel along the A85 and enter Main Street at Lochty (Image 10). Traffic flow along the A85 as well as traffic exiting and entering the Lochty junction may be affected during the construction period due to the presence of site vehicles.

Access would also be required off Main Street to Lochty Park and Lochty Industrial Estate, Vector Aerospace, the bowling club and playing fields, the River Almond, College Mill Trout Farm and College Mill Road (to Deer Park and Craigneuk). Two
existing access routes are shown in Images 11 and 12 below. There may also be access via the private road to the rear of the Brockhill property.

Traffic management measures (such as traffic signalisation, controlled access, signage, etc.) would be implemented to minimise disruption to the use of public roads and to existing access arrangements.

Image 11 - A85 showing access road to playing field area and Vector Aerospace

Image 12 - Road/footpath between the River Almond and Vector Aerospace
Environmental Commitments

The Environmental Impact Assessment has identified the following key measures to be included as commitments as part of the proposed scheme, with a view to reducing potential impacts identified during the assessment:

- Maintain existing access arrangements or provide alternative access arrangements during the construction period and limit any closures to off-peak periods.
- Careful consideration to avoiding tree removal during the detailed design and during scheme construction to reduce tree loss.
- Good construction site practices to be implemented to control noise, dust and the risk of pollution.
- Restoration of areas temporarily disturbed during construction.
- Re-use of excavated materials, where possible, in earth embankments and landscaping.
- Appropriate handling, storage, re-use and disposal of excavated materials, as applicable.
- Tree planting where space allows.
- Screening at the location of the new footbridge to match the existing planting.
- The existing hedge on the approach to the playing field car park would be supplemented by landscape planting. In addition an area at entrance to the playing field car park off Main Street would be landscaped.
- Use of materials that would blend the replacement road bridge at the River Almond/ East Pow Burn confluence more easily into the surrounding landscape and also reduce its visual intrusion. Compensation planting would be provided to mitigate for loss of trees in this area.
- Appropriate pollution control procedures to reduce the risk of sediment entering watercourses.
- Measures to deal with fuel and oil transport and storage, such as the inclusion of appropriately bunded areas and spillage trays.
- Emergency/contingency procedures to deal with any accidental spillages.
- Careful bank/watercourse restoration to include: landscaping (seeding and planting); facing of structures with local stonework; carefully designed bank repprofiling.
- Biodegradable materials would be used where possible to aid the regeneration of bank-side vegetation and to protect tree roots.
- Tree condition survey and check for bat roosts.
- Replacement of otter breeding sites.
- Structural building surveys before, during and after construction for properties within 40m of piling works areas.
- Monitor dust emissions and measure noise levels where necessary.
• Traffic management.
A full copy of the Environmental Statement is available for public viewing, free of charge, at the following address during normal office hours and also on the Perth and Kinross Council website (www.pkc.gov.uk/almondbankfloodscheme).

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Printed copies of the Environmental Statement may be obtained, on written request, from the above address at a charge of £150. A CD is available for £10.

Hard copies of the Non-Technical Summary of the Environmental Statement are available free of charge.

Any person wishing to comment on the Environmental Statement should write to the Executive Director of The Environment Service at the above address. Written responses are invited within 28 days of the advertised date of publication of the Environmental Statement.
Appendix A - Supporting Figures