REF.	ACTIONS	PARTNERS (lead partners in bold)
17.1	**Promote effective use of the regulatory system**	**ACC / AC / SEPA** SNH / DDSFB / SW / FCS / Landowners
17.1.1	When considering planning applications for engineering works require the developer to submit sufficient information to meet the requirements of relevant legislation.	**ACC / AC / SEPA**
17.1.2	Allow only small-scale restorative works which can be demonstrated to have no adverse impacts as Permitted Developments.	**ACC / AC**
17.1.3	Promote effective use of General Binding Rules for small scale works.	**ACC / AC / SEPA**
17.1.4	Ensure consistency of approach by Planning Authorities when considering small scale works e.g. through workshops, guidance notes.	**ACC / AC / SEPA**
17.1.5	Require geomorphological assessments of proposed works, where appropriate.	**ACC / AC / SEPA**
17.1.6	Ensure that the impact of sediment release upon SAC interests is always considered.	**ACC / AC / SEPA**
17.2	**Seek to reduce the impact of existing engineering works on the river system and its habitats.**	SNH / **SEPA** / SW / Landowners / ACC / AC / DDSFB
17.2.1	Assess the continuing purpose of existing engineering works (identified through the characterisation process).	SEPA
17.2.2	Evaluate the environmental, ecological and fishery impacts of existing engineering works.	SEPA / SNH
17.2.3	Review and update existing guidance; promote updated guidance.	SEPA / SNH
17.2.4	Undertake the necessary improvements.	ACC / AC / DDSFB / Land owners
17.3	**Develop soft engineering techniques appropriate to the River Dee.**	**ACC / AC** / DDSFB / SNH / RRC / MI / Landowners / SEPA
17.3.1	Review existing soft-engineering projects and assess applicability for use in river Dee.	ACC / AC
17.3.2	Identify appropriate sources of funding to develop new techniques.	ACC / AC
17.3.3	Identify areas suitable for restoration.	ACC / AC/ DDSFB / Land owners / SEPA
17.4	**Promote best practice for engineering works in or around the waters of the catchment.**	**ACC / AC / SEPA / DDSFB**
17.4.1	Ensure best practice guidelines for smaller scale river engineering works are brought to the attention of developers & contractors.	AC / ACC / SEPA
17.4.2	Review national & international practice and update 'Works to watercourses and their banks').	AC / ACC
17.4.3	Encourage/adopt widespread use of 'Working Around Water'.	AC / SEPA
17.4.4	Raise awareness of the fact that to avoid the need for Planning Consent it must be demonstrated that works will not cause adverse impact.	AC / ACC

Acronyms are listed in the centre of this Action Card

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engineering works 17

DEVELOPMENT & ENGINEERING

OBJECTIVE 17. Promote environmentally sustainable engineering works to the river channel and banks in order to maintain SAC interests and the biodiversity of the river.

BACKGROUND

Significant lengths of the River Dee and some of its tributaries have been extensively modified in the past by 'engineering works' for agricultural, fishery, industrial, transportation and water abstraction purposes. Many of these works have had adverse affects on the habitats and species of the River Dee and its tributaries.

The Water Framework Directive seeks to maintain or improve the ecological status of rivers. Addressing pressures and impacts due to morphological alterations is part of this process.

ISSUES

- Inappropriate in-river or bankside works have had damaging effects in the catchment. For example:
  - Canalisation of the river channel and lowering of the channel bed for land drainage purposes have destroyed in-river habitat.
  - Sheet piling has destroyed bank-side habitat.
  - Works associated with water abstraction prevent the passage of migratory fish.
  - The construction of croys or groynes for fisheries has caused subsequent erosion of banks through the deflection of erosion forces.
  - Unsuitable repair methods for scour damage to river banks have similarly caused further scour.
  - Gravel extraction to maintain fishing pools has interfered with the natural river process of pool filling and reforming.
- From time to time, maintenance or modification of existing works and entirely new works become necessary.
- All engineering works, that is, all works which necessitate the use of mechanical plant within the river channel or adjacent to its banks have the potential for adverse impact.

EXISTING / RECENT INITIATIVES

- Significant works require planning consent.
- Notification & regulation of river engineering works is required under CAR.
- Bridge works and flood prevention works in or adjacent to watercourses are assessed for ecological impact using 'Working Around



Unsuitable bank reinforcement works (Aberdeenshire Council)

WHO IS INVOLVED?

Aberdeenshire Council

Aberdeen City Council

Dee District Salmon Fishery Board

Forestry Commission Scotland

Landowners

The Macaulay Institute

River Restoration Centre

Scottish Environment Protection Agency

Scottish Natural Heritage

Scottish Water

Further copies can be downloaded at www.theriverdee.org. For further information contact the Dee Catchment Officer
c/o The Macaulay Institute, Craigiebuckler, Aberdeen AB15 8QH Telephone: 01224 498200 email: info@theriverdee.org

deecatchment partnership

Water' (Aberdeenshire Council & Angus Council).

- Assessment of the locations and impacts of existing works on the Dee and its tributaries is ongoing under the Water Framework Directive Characterisation process.
- Some works that were barriers to fish migration through the Dee system have been removed under the LIFE project.
- The Elrick demonstration wetland, established under the 3-Dee Vision project, is an example of appropriate river engineering techniques.

ACTIONS REQUIRED

- The actions suggested aim to improve the standard of future works and to redress some of the adverse impact of works carried out in the past.
- Actions to improve techniques and promote best practice are suggested together with regulatory actions based on existing or improved statutory powers.
- Realistic assessment of the impact caused by engineering works is an essential pre-requisite which underpins the actions tabulated.
- General adoption of best practice in impact assessment and execution of works should give regulatory bodies the confidence to allow restorative works to be carried out at short notice, thereby avoiding escalation in scope or extent of works through delay.
- Consideration should be given to the restoration of artificially modified channels.

LEGISLATION

See Action Pack Annex for information sources

- Water Environment & Water Services Act
- Water Environment (Controlled Activities) (Scotland) Regulations 2005
- Under the Habitats Regulations (1994) all engineering works require an 'appropriate assessment' of their likely impact on the SAC interests.
- Salmon Regulations (1994)
- Salmon Consolidation Act (2003)
- Flood Prevention & Land Drainage (Scotland) Act 1997

GUIDELINES AND INFORMATION

See Action Pack Annex for information sources

- Riparian Management leaflet (SEPA)
- Managing River Habitats for Fisheries (SEPA)
- DDSFB guidelines
- Works to Watercourses and their Banks (ACC & AC)
- Working Around Water (AC & Angus Co)
- Geomorphological Study of the River Dee (SNH) identified stretches of river that are likely to be sensitive to river works
- SEPA Habitat Enhancement Initiative
- The River Restoration Centre www.therrc.co.uk (link to RRC Manual and to other project specific web sites for examples of completed projects)
- The 3-Dee Vision Demonstration Project www.3deevision.org (Issues & Best Practice link)
- www.sepa.org (Water Framework Directive link)



'Soft' bank engineering work (Aberdeenshire Council)

- Water Environment (Controlled Activities) (Scotland) Regulations 2005 – A Practical Guide (SEPA)
- Good Practice Guidance: Construction of River Crossings (SEPA)
- Good Practice guidance: Bank Protection: Rivers and Lochs (SEPA)
- Other good practice and regulatory guidance on SEPA website under WFD and engineering links.

BENEFITS TO PROTECTED SPECIES

The following specially protected species will benefit from the Actions:

- Freshwater pearl mussel *Margaritifera margaritifera*
- Otter *Lutra lutra*
- Water vole *Arvicola terrestris*
- Goldeneye *Bucephala clangula*

RELATED ACTION CARDS

16. Flood alleviation

18. Obstacles to fish passage