Herefordshire Council

River Wye & Lugg Natural Flood Management Construction Grant Scheme

GUIDANCE NOTE - DRAFT

HEREFORDSHIRE COUNCIL

This guide was produced in partnership with the following organisations:

Herefordshire Council

Environment Agency

Severn Rivers Trust
Preserving and Caring for the Severn Catchment

The Wye & Usk Foundation

Herefordshire Council

The NFM Construction Grant Scheme at a glance

PURPOSE:

The NFM Construction Grant Scheme has been designed to provide the necessary funding to help support landowners and farmers within the projects priority sub-catchments to alter their land and water management practices in order to slow the flow of water and reduce flood risk to downstream communities.

WHAT CAN BE FUNDED?

The NFM measures which are eligible for funding through the scheme can be sub-divided into ten categories:

1. Soil management options
2. Over winter cover options
3. Tramline disruption options
4. In field water retention options
5. In channel water retention options
6. Fencing options
7. Trackway options
8. Tree planting options
9. Wetland habitat creation options
10. Landowner innovation options

Note this is a competitive grants scheme and therefore funding is not guaranteed to all applicants.

FUNDING CRITERIA:

The following rules apply to applications:

1. Proposed NFM measures **MUST** be on land within one of the 7 priority sub-catchments.
2. Permission **MUST** have been granted by the landowner/ landowners for the application to be made and the subsequent work to be undertook.
3. The proposed NFM measures **MUST** meet the objectives of the relevant Catchment Delivery Plan (CDP).
4. The application **MUST** be for NFM measures detailed within this guide.
5. The applicant **MUST** demonstrate best value for money has been achieved.
6. Work must commence within **3 months** of the grant being awarded. It is possible to request an extension of time to commence work, however if an extension is not awarded and if work does not begin within this timeframe the grant offer will be withdrawn.
7. There is no lower limit on the size of the grant.
8. Each capital item must have a **minimum design life of at least 5 years**.
9. Work must comply with all relevant health and safety legislation and British Standards (BS) or equivalent.
10. Applicants must **obtain the relevant consents** where appropriate.
11. Please note that this grant cannot be awarded if funding has already been received from another source for completing this work. This includes match funding from another grant e.g. Countryside Stewardship Scheme.

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APPLICATION PROCESS:

A detailed explanation of the application process is included within Section 1.7. To apply for the grant applicants should:

1. Fill out the application form which is available at ……. Assistance with this application can be sought from the relevant Catchment Advisor or from Herefordshire Council's NFM Project Officer.
2. Submit application form to Herefordshire Council via ……
3. Applications will be reviewed by a panel to ensure the application would fund works that:
    a. Meet the overall objectives of the project.
    b. Meet the objectives outlined in the relevant Catchment Delivery Plan.
4. Applicant receives decision notice from Herefordshire Council.
5. Applicant signs and returns the grants Terms & Conditions agreement.
6. Applicant may commence agreed works, ensuring NFM measures are implemented in accordance with the technical specifications outlined in this document. Guidance can be provided by Herefordshire Council's NFM Project Officer or the Catchment Advisors.
7. Applicant provides evidence or site is inspected to ensure NFM measures have been implemented in accordance with the grant agreement.
8. Applicant submits invoice for works completed.
9. Herefordshire Council pays grant value to applicant.

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1. General Guidance

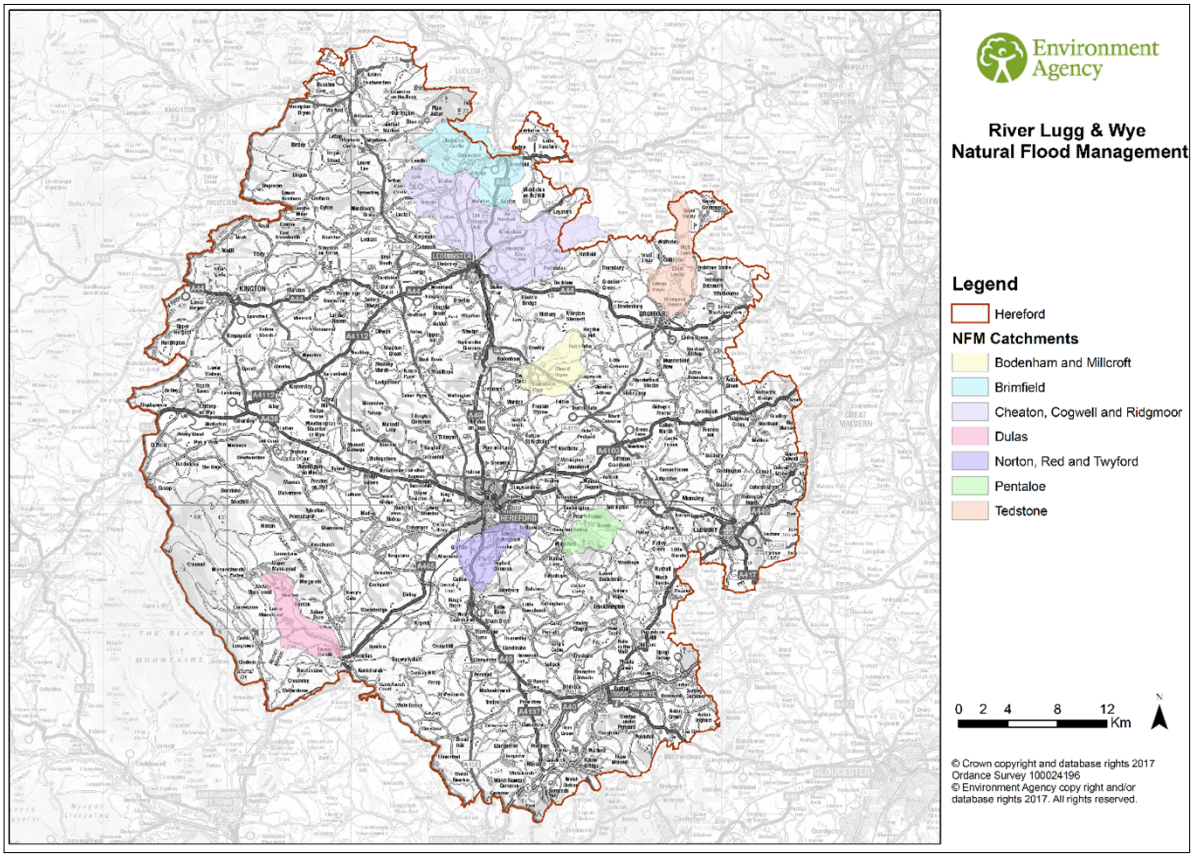
1.1. What is the NFM Construction Grant Scheme?

The Natural Flood Management (NFM) Construction Grants Scheme (CGS) has been set up to achieve the objectives set out in the DEFRA funded River Wye and Lugg NFM Project:

- Reduce flood risk to local communities;
- Gather evidence and develop our knowledge around NFM where there are currently gaps;
- Engage communities around NFM and develop partnerships; and
- Deliver wider benefits, e.g. water quality, enhanced biodiversity, socio economic benefits.

The grant scheme has been designed to provide the necessary funding to help implement NFM measures within the projects priority sub-catchments (Figure 1). The grant will enable landowners and farmers to undertake land and water management techniques which will help slow down the flow of water, helping reduce flood risk to downstream communities. For example, the grant will help pay for the construction of features such as leaky woody dams and attenuation basins, as well as offering a financial contributions for altering land management practices e.g. adopting better soil management practices such as sub-soiling. Whilst NFM cannot completely prevent flooding, NFM measures can help reduce the frequency and severity of flood events, as well as providing multiple benefits e.g. habitat creation and improved water quality.

Figure 1 River Wye and Lugg NFM Project priority sub-catchments



In order to ensure the grants help fund the measures which will have the greatest impact, with regards to reduced flood risk and offering multiple benefits, the grants scheme will be guided by the Catchment Delivery Plans (CDP). Grant allocations are competitive and a panel will assess the applications ability to deliver both the overall objectives of the project as well as the objectives outlined in the relevant Catchment Delivery Plan (Section …..).

1.2. Who is eligible for the NFM Construction Grant Scheme?

The CGS is available to anyone wishing to implement NFM within any of the priority sub-catchments (Figure 1). The application can be made by the landowner or by an organisation or person who has been given permission to act on behalf of the landowner e.g. Wye and Usk Foundation (WUF), Severn Rivers Trust (SRT) or Flood Action Group.

The applicant **MUST** meet the following criteria:

1. Proposed NFM measures **MUST** be on land within one of the 7 priority sub-catchments (Figure 1).
2. Permission **MUST** have been granted by the landowner/ landowners for the application to be made and the subsequent work to be undertook.
3. The proposed NFM measures **MUST** meet the overall project objectives and the objectives outlined in the relevant Catchment Delivery Plan (see Section ….).
4. The application **MUST** be for NFM measures detailed within this guide (see Section 3).
5. The applicant **MUST** demonstrate best value for money has been achieved.

1.3. What NFM measures can be funded?

Table 1 details the NFM measures which are available for funding through the NFM Construction Grants Scheme. The Table provides fixed unit costs for each item, the contribution rate offered and the maximum grant rate. There is also scope for applicants to suggest alternative items/measures where there is a clear benefit to flood risk reduction and water quality improvement. Monies will be paid once proof of satisfactory construction has been established e.g. via a site visit or by submitting evidence.

The NFM measures can be sub-divided into eight categories:

1. Soil management options
2. Over winter cover options
3. Tramline disruption options
4. In field water retention options
5. In channel water retention options
6. Fencing options
7. Wetland habitat creation options
8. Landowner innovation options

The technical specifications for the grant items are outlined in Section 3.

Table 1 NFM Grant Costs & Contribution Rates

Item Code	Description	Cost of Operation	Grant Contribution	Maximum Grant Rate
NFM01	Grassland Aeration	£18.50/ha	50%	£9.25/ha
NFM02	Grassland sward lifting	£57/ha	50%	£28.50/ha
NFM03	Arable Subsoiling	£58/ha	50%	£29/ha
NFM04	Catch / Cover cropping	£120/ha	75%	£90/ha
NFM05	Under sowing Maize	£87/ha	50%	£43.50/ha
NFM07	Manage overwinter tramlines	£20/ha	100%	£20/ha
NFM08	Grass swales	£16/m^2	100%	£16/m^2
NFM10	Sediment traps / Attenuation ponds	£12/m^2	100%	£12/m^2
NFM11	Earth bunds	£310/barrier	100%	£310
NFM12	In ditch seepage barriers	£300/barrier	100%	£300/barrier
NFM13	Leaky Dams	£150/dam	100%	£150/dam
NFM14	Fencing Barb Wire	£4.00/m	50%	£2/m
NFM15	Fencing Netting & Barb	£5.60/m	50%	£2.80/m
NFM16	Cross drains	£490	50%	£245
NFM17	Tree Planting	TBC	TBC	TBC
NFM18	Hedge Planting	TBC	TBC	TBC
NFM19	Wetland habitat	TBC	TBC	TBC
NFM20	Landowner Innovation	£1,000	TBC on Application	Up to £1,000

Note: The maximum grant rate shows the maximum value which will be paid for that specific grant item. Please note the grant offer will state that the grant value will be for x% of spend up to the total maximum grant rate value for that item.

e.g. The grant offer for a leaky dam would be for 100% of the spend up to a total maximum of £150/dam.

1.4. Who can carry out the work?

Works funded through the NFM Construction Grants Scheme can either be conducted by the applicant or the applicant can employ contractors to complete the work. It is essential that all works funded through the scheme are carried out in accordance with the specifications outlines in Section 3. It is the applicant's responsibility to ensure they follow appropriate health and safety procedures.

1.5. Maintenance requirements

Applicants are responsible for ensuring the NFM measures funded through this grants scheme are maintained and kept in good condition for at least 5 years after completion. The applicant is responsible for carrying out any required repairs in a timely manner. The applicant should keep a record of any maintenance activities which they have conducted and the costs associated with this. This information will be used to help inform future NFM schemes.

1.6. Value Added Tax

Add in appropriate text, if VAT registered then grant will be paid as NET, if not don't include VAT in grant amount.

1.7. How do I apply?

To apply for funding through the NFM Construction Grant Scheme, please fill out the application form and follow the process outlined in Figure 2. Note the following information will need to be provided as part of the application:

- Brief description of the existing land use.
- Map showing boundaries of land ownership.
- Map showing location, type and extent of proposed NFM measures.
- An overview of the proposed works, including details of who would carry out the work.
- Photographs of the site before and after the NFM work has been implemented.
- 2 competitive quotes for completing the proposed works.
- Proof of landowner permission to conduct the work.

The Woodland Trust have offered to contribute 70% of the costs of tree planting on agricultural and private land for NFM works within this project. To access this funding please contact Herefordshire Council's NFM Project Officer.

Applicants should first consider whether alternative funding is available for completing the works e.g. through the Countryside Stewardship Mid-Tier Scheme. Applicants should apply for these alternative funding sources in preference to the NFM Construction Grants Scheme. If you have any queries about the NFM Construction Grants Scheme or alternative funding sources please contact Herefordshire Council's NFM Project Officer or your relevant Catchment Advisor (Table 2).

As stated in Figure 2, all applications will be scored in accordance with the scoring criteria detailed in Section 2. A written decision letter regarding the success of the application will be issued within 6 weeks of the application being accepted. If successful the applicant will be asked to sign the Terms and Conditions of the grant, which are included in Appendix A.

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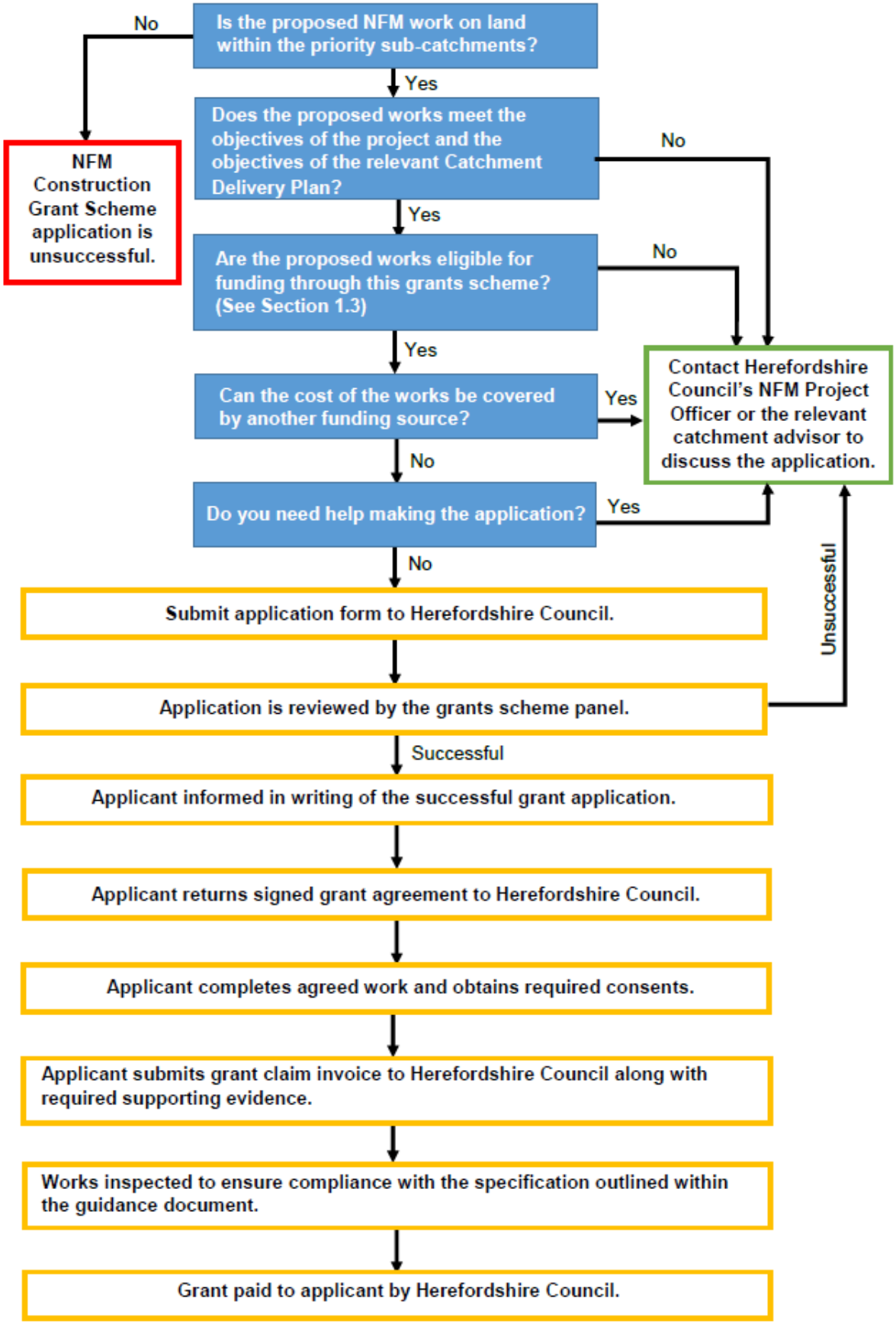
Note Herefordshire Council may request additional information to support the application. This information should be provided ASAP and the grant application will be put on hold until the required information is provided.

Table 2 Key contact details for the River Wye and Lugg NFM Project

Key Contacts	Details	Roles/Responsibilities
Herefordshire Council: NFM Project Officer	Bethany Lewis Tel: 01432 260 739 or 07792880030 Email: bethany.lewis@herefordshire.gov.uk	Oversee project delivery and grant allocation
Wye & Usk Foundation: Catchment Adviser Catchment Adviser Catchment Adviser	Mike Williams Tel: 07920 441 215 Email: mike@wyeuskfoundation.org Tom Jolley Tel: 07887 45945 Email: Tom.jolley@wyeuskfoundation.org Jonny Pugh Tel: 07825743447 Email: jonny@wyeuskfoundation.org	Deliver catchment advice in the Cheaton, Cogwell, Ridgemore Bodenham, Milcroft, Pentaloe, Tedstone, Twyford, Norton, Red & Dulas Brooks
Severn Rivers Trust: Catchment Advisor	Add in details	Deliver catchment advice in the Brimfield catchment.
Environment Agency: Natural Flood Management Coordinator	Andrew Osbaldiston Tel: 02030 251470 Email: andrew.osbaldiston@environment-agency.gov.uk	Co-Ordinate NFM Projects across the Severn Basin District

Figure 2 NFM Construction Grant Scheme application process



1.8. Rules of NFM Construction Grant Scheme

The following rules apply to the NFM Construction Grant Scheme:

- The application **must be for NFM work within one of the priority sub-catchments** (Figure 1).
- Work must commence within **3 months** of the grant being awarded. It is possible to request an extension of time to commence work, however if an extension is not awarded and if work does not begin within this timeframe the grant offer will be withdrawn.
- There is no lower limit on the size of the grant.
- Each capital item must have a minimum **design life of at least 5 years.**
- Work must comply with all relevant health and safety legislation and British Standards (BS) or equivalent.
- Applicants must obtain the relevant consents where appropriate, including:
  - Land Drainage Consent
  - Flood Defence Consent
  - Planning permission
  - SSSI consent
  - Historic environment

  The cost of obtaining the relevant consents falls with …..

- Please note that this grant cannot be awarded if funding has already been received from another source for completing this work. This includes match funding from another grant e.g. Countryside Stewardship Scheme.
- Once constructed the **landowner is responsible for the maintenance** of the NFM measures implemented through the grants scheme.

2. Scoring criteria

The NFM Construction Grants Scheme is competitive and therefore funding is not guaranteed to all applicants.

All applications will be assessed using the following criteria:

1. **Does the application meet the objectives of the River Wye and Lugg NFM Project?**

Objectives of the River Wye and Lugg Natural Flood Management Project:

- Reduce flood risk to local communities;
- Gather evidence and develop our knowledge around NFM where there are currently gaps;
- Engage communities around NFM and develop partnerships; and
- Deliver wider benefits, e.g. water quality, enhanced biodiversity, socio economic benefits.

2. **Does the application meet the objectives of the relevant Catchment Delivery Plan?**

Objectives of the relevant Catchment Delivery Plan:

Each catchment will have a Catchment Delivery Plan (CDP) which details the approach local residents and experts feel would best benefit the catchment, in terms of flood reduction. The objectives and actions detailed in the CDP will be used to assess each application, to ensure funding is allocated to actions which have been identified within the CDP.

The NFM Construction Grants Scheme review panel (Table 3) will assess each application against this criteria and award grants accordingly. The panel will meet on a monthly basis to review applications.

Table 3 NFM Construction Grants Scheme Review Panel

Name	Role

3. NFM Construction Grant Scheme item specifications

1.9. Soil Management Options

Table 4 Soil management options available through CGS

Item Code	Description	Cost of Operation	Grant Contribution	Maximum Grant Rate
NFM01	Grassland Aeration	£18.50/ha	50%	£9.25/ha
NFM02	Grassland sward lifting	£57/ha	50%	£28.50/ha
NFM03	Arable Subsoiling	£58/ha	50%	£29/ha

Table **4** details the soil management options available through the NFM Construction Grants Scheme.

Objective: Compaction of fields from stock or machinery increases soil erosion, surface water runoff and increases the risk of soil, manure, nutrients and pesticides reaching watercourses. The cultivation of compacted soils will increase aeration and water infiltration rates which will reduce soil erosion and surface run-off.

Specifications: This item will assist in financing to reduce soil compaction for improved grassland or cultivated fields where there is a risk of surface flow reaching a watercourse.

- A specialist soil husbandry advisory visit must be conducted in order to access this CGS item, this can be provided free of charge by the Catchment Advisers (WUF or SRT).
- The type of machinery required depends on the soil type, texture and the depth of compaction, but is likely to include shallow spiking or sub-soiling.
- Aeration of grass fields requires less energy and so receives a reduced grant rate.
- Expert advice should be sought on the appropriate machinery.
- To maximise the benefit and avoid any further soil compaction, only use machinery when the soil is dry at the depth that is to be loosened. It is possible that this process may cause initial damage to the root system for grassland fields.
- Photographic evidence must be taken before and after subsoiling.
- Invoices must be kept if contractors are used or machinery is rented.
- Herefordshire Council is not responsible for any financial loss incurred from this action.

1.10. Over winter crop options

Table 5 Over winter crop options available through CGS

Item Code	Description	Cost of Operation	Grant Contribution	Maximum Grant Rate
NFM04	Catch / Cover cropping	£120/ha	75%	£90/ha
NFM05	Under sowing Maize	£87/ha	50%	£43.50/ha

Table 5 details the over winter crop options available through the NFM Construction Grants Scheme.

Objective: Establishing a cover crop during fallow periods improves infiltration rates by increasing root mass, reduces nutrient leaching during the autumn/winter and provides soil protection from wind and rain erosion.

Please take into account crops rotations when sowing cover crops. Cover crops can potentially lead to an increase in slug populations depending on weather and soil conditions.

Specifications:

- The cover crops must be established annually by 15th September.
- Under sowing of maize should take place in the month following drilling.
- Selected crop must give good ground cover.
- The crop must remain in situ from the date of sowing until at least the 31st January.
- Grazing of cover crops in surface water catchments is permitted but not until after January 31st.
- Ploughing is not permitted to establish the cover crops, the use of light cultivation techniques is recommended.
- It is recommended you discuss this option with an agronomist.
- Any crop sown created for Ecological Focus Area (EFA, CAP greening criteria) cannot be claimed under CGS. Likewise any cover crops funded through Countryside Stewardship SW6 Option cannot receive double funding from the CGS.
- Cover crop mixes could include species such as Mustard, Oil Radish, Phacelia, Oats, Vetch.
- The location of the area selected for cover crops or under sowing must be clearly marked on a map submitted with your application.

1.11. Tramline disruption options

Table 6 Tramline disruption options available through CGS

Item Code	Description	Cost of Operation	Grant Contribution	Maximum Grant Rate
NFM07	Manage overwinter tramlines	£20/ha	100%	£20/ha

Table 6 details the tramline disruption options available through the NFM Construction Grants Scheme.

1.1.1 NFM07: Manage overwinter tramlines

Objective: The use of tines to disrupt tramlines to improve water infiltration rates can help to reduce accelerated runoff.

Specifications: This item is available for fields close to watercourses or on fields identified as high risk for surface runoff and can be used to help prevent surface flow and sediment

movement along compacted tramlines. This will reduce the amount of soil erosion across a field and reduce the risk of sediment, nutrients and pesticides reaching the water course.

- A simple tine should be used to disrupt the tramline between October and February. This breaks up the soil compaction and encourages water to infiltrate into the soil.
- Land must be adjacent to water course or have influence on a watercourse.
- Applicable to winter cereal land. Not recommended on winter oilseed rape sown land.
- Photographic evidence must be taken to demonstrate activity has been undertaken.
- Invoices must be kept if contractors are used or machinery is rented.

1.12. Infield water retention options

Table 7 Infield water retention options available through CGS

Item Code	Description	Cost of Operation	Grant Contribution	Maximum Grant Rate
NFM08	Grass swales	£16/m^2	100%	£16/m^2
NFM10	Sediment traps / Attenuation ponds	£12/m^2	100%	£12/m^2
NFM11	Earth bunds	£310/barrier	100%	£310

Table 7 details the infield water retention options available through the NFM Construction Grants Scheme.

1.1.2 NFM08: Grass swales

Objective: Grassed swales are areas of grass which are designed to allow surface flow to collect and soak away.

Specifications: The item consists of site preparation and excavation of the swale. Please note that in calculating the area of the swale for the application form, measurement should start at the inside edge of the created bank. A long swale allows additional time for water to soak away and for sediment to settle. Water management advice is recommended from a Catchment Adviser in order to access this item.

It is not suitable for run-off that contains slurry, manure, dirty yard runoff, or for run-off from a pesticide handling or wash-down area.

The following specifications should be met:

- The swale should be constructed on the contour or at a longitudinal slope of normally no greater than 2 degrees.
- The layout of the swale should be marked on the ground and excavated to a depth of 500 mm.
- Topsoil should be stockpiled separately and used in the bottom of the swale and on the graded slopes.
- Side slopes should be graded to no more than 1:3.
- The floor of the swale should be excavated for a further 150-250 mm and replaced with topsoil.
- A dense grass sward should be established on the sides and floor of the swale.

- The formation of a swale could be considered to be an engineering operation and may require planning permission. The Local Authority should be consulted before any work commences.
- This item can be used in conjunction with check dams (NFM09) to slow the flow of water.

For more information see 'Wildfowl and Wetlands' guide and Environment Agency link:

http://www.wwt.org.uk/uploads/documents/1429707026_WWTConstructedFarmWetlands150422.pdf

1.1.3 NFM10: Sediment traps/ scrapes

Objective: A sediment pond or trap will provide an area where muddy run-off from fields or tracks is allowed to pond so sediment will settle out. This will help reduce the risk of sediment and other pollutants entering a nearby watercourse.

Specifications: Sediment traps may take the form simple of dug-out ponds, it is preferable to have a number of small ponds and traps around the farm rather than a single larger feature.

- Should only be used in conjunction with other options to reduce the cause of runoff, as this option only addresses the pathway not the source.
- Does not apply to already existing ponds, areas of existing archaeological or historic value.
- Size of pond/trap depends on soil type and runoff volumes that are to be intercepted.
- For large scale sediment ponds, advice from soil and water or civil engineer should be sought.
- Excavate to an appropriate depth, creating gently sloping banks
- Excavated topsoil should be spread on top of embankments.
- Outflow pipes, where required, should be installed at a suitable location 750 mm below the top of the embankment to provide a freeboard.
- Regular maintenance will be required on sediment ponds/traps. Removal of sediment from ponds/traps as required. EA may need to be contacted if site is contaminated. Check for blockages regularly.
- For more information see 'wildfowl and wetlands' guide:

http://www.wwt.org.uk/uploads/documents/1429707026_WWTConstructedFarmWetlands150422.pdf

1.1.4 NFM11: Earth Bunds

Objective: An earth bank or soil bund can be used to:

- slow the movement of water, protecting streams and rivers from pollutants
- slow flows during high rainfall and reduce downstream flooding
- control water levels to aid raised water levels for habitat creation and restoration

Specifications: Position bunds or banks on land that can support damp, vegetated habitat. Ideally:

- below tracks
- below small, lightly contaminated yards
- below areas of hard standing
- the bottom of slopes
- below woodland channels
- below buffer strips channelling water in arable fields
- where water can be held in grassland fields

Design and construction:

- form infiltration basins into 'V', 'U' or 'C' shapes
- measure bunds in a continuous length of 100m per unit with up to a 250m2 runoff store
- dig down 0.8m in depth
- grade side slopes to no more than 1 in 3
- ensure half the stored water can empty within 24 hours
- flatten the soil when damp to strengthen the structure
- plant tussocky grass species in banks that can withstand wet and dry conditions
- establish vegetation on the basin floor to reduce clogging
- build bay silt traps where soil erosion is high to stop the basin from clogging
- regularly remove excess sediment from banks and bunds, reapplying it back to the field
- (contact the Environment Agency to check if a waste exemption is required)

To enhance buffer strips

- place soil bunds at the field edge of buffer strips, to slow runoff
- build bunds 300mm to 500mm high by 600mm to 1000mm wide
- place larger bunds where complex field slopes divert runoff to pinch points

1.13. In-channel water retention options

Table 8 In-channel water retention options available through CGS

Item Code	Description	Cost of Operation	Grant Contribution	Maximum Grant Rate
NFM12	In ditch seepage barriers	£300/barrier	100%	£300/barrier
NFM13	Leaky Dams	£150/dam	100%	£150/dam

Table 8 details the infield water retention options available through the NFM Construction Grants Scheme.

1.1.5 NFM12: In ditch seepage barriers

Objective: An in ditch wetland barrier is a dam that allows the slow passage of water through it. By slowing down the flow, sediment can be deposited helping to remove nutrients and pesticides from the water.

Specifications: Advice and assistance from the Environment Agency may be required for this item. To find your local Environment Agency office please try the following contact information; Email: enquiries@environment-agency.gov.uk or Telephone 03708 506 506.

- In ditch wetland barriers should be located within field ditches, preferably where land on either side is owned by the applicant.
- They are best placed where the ditch system carries a fast flow of water during intensive rain events.
- The number of barriers in any one ditch would depend on the gradient, with steep gradients benefiting from more structures.
- In ditch wetland barriers must not be constructed on natural watercourses, or where there is a high risk to land or property if the structure was to cause local flooding.
- The in ditch wetland barrier should be no more than 4 m wide and 1 m high.
- Wooden slats should be formed either vertically or horizontally (if less than 2 m wide) leaving 1-2 mm gap between each barrier. The slats must be of sufficient strength to resist the force of fast flowing water and be durable.
- Any purchased wood must not be treated with a chemical wood preservative product as these are toxic to aquatic life.
- Materials other than timber may be used for construction as long as they allow water to percolate through at a suitable speed.

1.1.6 NFM13: Leaky Dams

Objective: Leaky woody dams will slow the movement of water and help push flows onto the floodplain during floods. This will increase temporary storage of flood waters within water channels and out on to the floodplain, help delay the passage of flood water downstream, allow sediment to settle out, and reduce downstream flood risk.

Specifications:

Small leaky dams are typically for streams between 1m and 2.99m but choice can be site specific.

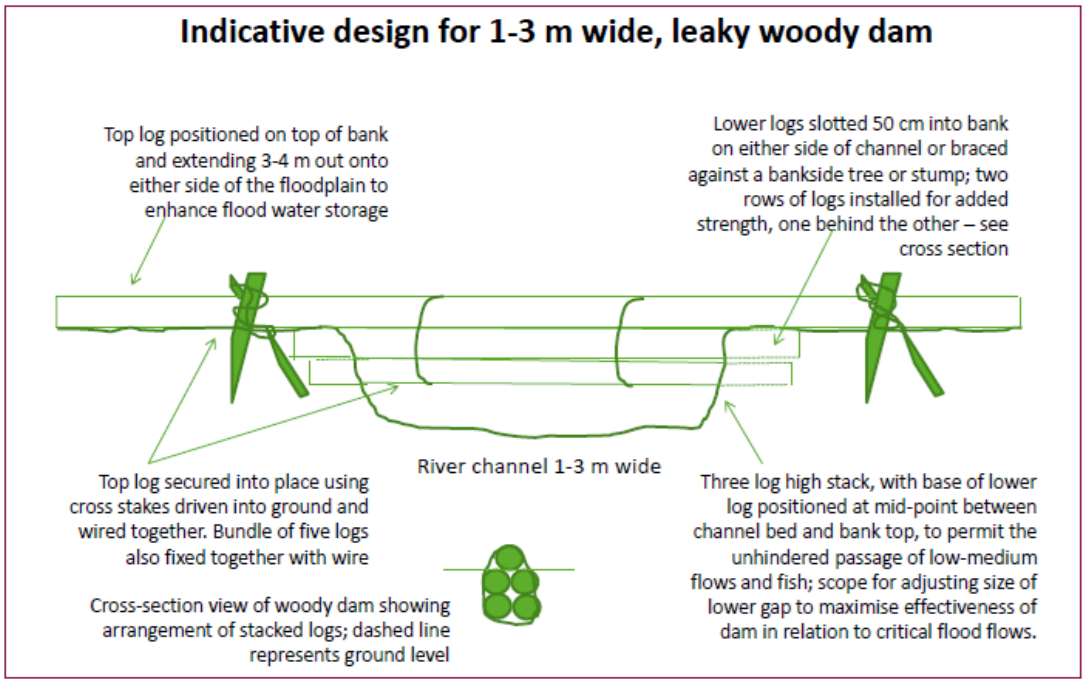
Large leaky dams are typically for streams channels between 3m and 5m but choice can be site specific.

- follow the indicative drawings in the Higher Tier manual Annex 2c for maximum effectiveness (Figure 3, Figure 4).
- construct the dam from logs large enough to span the water channel and out on to the floodplain to provide a stable and long-lasting structure
- align dams at right angles to channel banks to reduce bank scour
- build dams to allow low flows and fish to pass unimpeded at all times
- site dams on slow flowing reaches of the water course
- build dams to a height sufficient to encourage water to spread onto the floodplain upstream of the dam or hold water within the channel itself
- build dams in series (minimum 3 dams) at a spacing between dams of about 5-7 times the width of the channel
- make sure dams are not installed directly upstream of pinch points such as bridges or culverts that back up flows and are likely to swamp the dam

- check and maintain dams to keep the structure effective

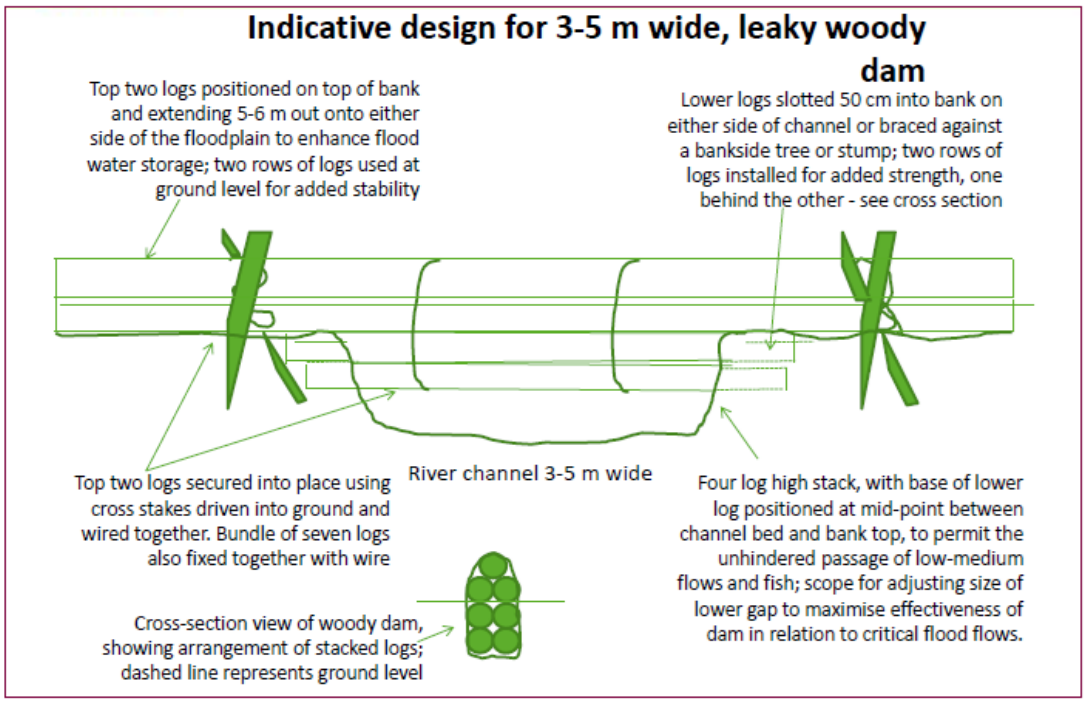
http://www.yorkshiredalesriverstrust.com/wp-content/uploads/2018/01/Natural-Flood-Management-Techniques-Leaky-Dams.pdf **Leaky dam guide**

Figure 3 Small Leaky Dam design



Source: Natural England (2018, Annex 2c)

Figure 4 Large Leaky Dam design



Source: Natural England (2018, Annex 2c)

1.14. Fencing options

Table 9 Fencing options available through CGS

Item Code	Description	Cost of Operation	Grant Contribution	Maximum Grant Rate
NFM15	Fencing Barb Wire	£4.00/m	50%	£2/m
NFM16	Fencing Netting & Barb	£5.60/m	50%	£2.80/m

Table 9 details the fencing options available through the NFM Construction Grants Scheme.

Objective: Livestock access to watercourses causes erosion of riverbanks, resulting in increased levels of sediment in the channel, overgrazing of bankside vegetation and bacteriological and nutrient contamination. The objective of this option is to prevent livestock access to watercourses and allow the establishment of a buffer strip adjacent to watercourse.

Specifications:

The option is for use to protect in channel interventions and is **unlikely to be approved as a stand-alone item**.

- Fences must be a minimum of 1.5 metres from the top of the bank of the watercourse.
- Fencing should prevent animal access.

- Fencing must be stock-proof, fit for purpose and erected with permanent stakes. Posts must be placed at intervals of no more than 3.5m from the post centres. For a high tensile pattern fencing the same requirements apply to the number of line wires or netting (see below), but posts may be placed at up to 12m from the post centres (6m spacing if cattle are present).
- Livestock drinking points are not permitted due to potential water contamination that may affect water quality. An alternative water supply should be sought if necessary and can be funded through this scheme where deemed appropriate, alternatively complimentary funding can be sought through Countryside Stewardship.
- The wire used must be appropriate for the livestock type.
- All materials used must meet the relevant British Standards (BS).
- When erecting a fence consider installing gates to allow management activities or husbandry operations and to comply with Basic Payment Scheme regulations. The financing of fencing does not cover the cost of any gates.
- The fencing option covers installation and does not include cost of maintenance and normal wear and tear.

1.15. Tree planting options

Table 10 Tree planting options available through CGS

Item Code	Description	Cost of Operation	Grant Contribution	Maximum Grant Rate
NFM18	Tree Planting			
NFM19	Hedge Planting			

Table 10 details the tree planting options available through the NFM Construction Grants Scheme.

1.1.7 NFM18: Tree planting

Add in info

1.1.8 NFM19: Planting new hedgerows

Objective: Plant hedges on sites where creation will help reduce soil erosion and runoff.

Specifications:

- carry out work between 1 November and 31 March
- prepare the ground along a 1.5m wide strip to provide good soil conditions and as little competition from other vegetation as possible
- apply any herbicide to the 1.5m strip in the August or September prior to planting only
- Plants must be:
    - 2-year-old transplants

  - at least 450mm to 600mm high
  - native species, with no one species making up more than 70% of the total
  - planted in a staggered double row 40cm apart with a minimum of 6 plants per metre
  - kept clear of weeds until they are established
- remove individual guards and tree shelters once the plants are established
- replace all failures in the following planting season
- trim the newly planted hedge in at least the first 2 years to encourage bushy growth, allowing the hedge to become taller and wider at each cut
- prevent livestock and grazing animals from damaging the hedge by setting fencing at least 1.2m from the centre of the hedge, or, if there is a bank, as close to the base of the bank as possible

1.16. Wetland habitat creation options

Table 11 Wetland habitat creation options available through CGS

Item Code	Description	Cost of Operation	Grant Contribution	Maximum Grant Rate
NFM20	Wetland habitat creation			

Table 11 details the wetland habitat creation options available through the NFM Construction Grants Scheme.

Add in details

1.17. Landowner innovation options

Table 12 Landowner innovation options available through CGS

Item Code	Description	Cost of Operation	Grant Contribution	Maximum Grant Rate
NFM21	Landowner Innovation	£1,000	TBC on Application	Up to £1,000

Table 12 details the landowner innovation options available through the NFM Construction Grants Scheme.

Objective: We acknowledge that all farms/ areas of land operate differently and on a variety of landscapes. The list of grants offered therefore may not be suitable for all situations. The 'Landowner Innovation' item offers applicants an opportunity to suggest alternative and innovative options to reduce erosion, infiltration issues and flood risk.

Specifications: Innovation Applications can only be submitted with endorsement from your local Catchment Adviser or Herefordshire Council's NFM Project Officer, who should be consulted prior to making the application. If we deem this plan of benefit to the environment,

we will fund up to 50-100% of the cost (ex. VAT) depending on the cost-benefit of the project, with a maximum contribution of £1,000. We will not fund any infrastructure directly linked to regulatory requirements.

General conditions for applications to be considered:

- All Landowner Innovation applications must be accompanied with quotes or costings for the proposed works/items, maps and timings. Where this includes your own time, an estimate must be provided.
- All supporting information must be submitted at the time of application. Applications without necessary information will not be considered until this is received.
- The water quantity benefit of the work must be explained in the application form. Applications without this will not be considered.
- Should the value of completed work be less than that originally specified in the grant acceptance letter, the value will be reduced proportionately.

Examples of Items NOT eligible for funding:

1. Clearing/re-digging of ditches
2. To comply with regulatory requirements
3. Replacement or maintenance of items/infrastructure
4. Machinery and farm activity with no direct improvement of water quantity

Herefordshire Council

4. References

Author	Date	Details
Natural England	2018	Countryside Stewardship, Higher Tier Manual. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/695909/higher-tier-manual-2018.pdf

Herefordshire Council

Appendix A – Grant Scheme Terms and Conditions