FARMING for WATER

Water European Innovation Partnership - AGRI

MEASURES INFORMATION BOOKLET

A €60M FARMER AND ADVISORY LED PROJECT TO PROTECT AND RESTORE WATER QUALITY

FIVE YEAR PROGRAMME FROM 2023-2027

VERSION 1

Rialtas na hÉireann
Government of Ireland

Co-funded by the European Union

eip-agri
AGRICULTURE & INNOVATION

Local Authority Waters Programme
vibrant communities | catchment assessment | healthy waters

Dairy Industry Ireland
Ibec

eagasc
Agriculture and Food Development Authority

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OVERVIEW

The "Farming for Water" European Innovation Partnership AGRI Project

The Farming for Water (FFW) project is a new initiative under the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI). This ambitious project aims to address water quality challenges while delivering additional environmental benefits. FFW fosters collaboration among farmers, researchers, policymakers, and other stakeholders to co-develop and refine innovative solutions. By focusing on practical and scalable measures, the project seeks to improve water quality and promote sustainable agricultural practices. The Water EIP aims to improve water quality at local, catchment and national levels. The Department of Agriculture, Food and the Marine (DAFM) and the European Commission (EC) are providing 50 million euros which is ring fenced for farmer payments to implement targeted actions on the ground above regulatory requirements. The Department of Housing, Local Government and Heritage (DHLGH) are providing the administrative support for the project to the value of 10 million euros. The Local Authority Waters Programme (LAWPRO) leads this initiative in partnership with Teagasc and Dairy Industry Ireland (DII). Launched in March 2024, the programme will run until 2027 and is supported by a broad network of collaborators, including farmers, researchers, local authorities and other key stakeholders.

Overview: Why Protecting Our Waters is Important

Rivers are the lifeblood of the land, carrying water from upstream sources all the way to the coast. What enters a river at the top of a catchment area—such as chemicals, nutrients, or pollutants—ultimately impacts the quality of water in estuaries and coastal areas. Clean, healthy rivers are essential for the environment, the economy, and society. Currently, only 54% of Ireland's surface waters meet minimum water quality standards, with an even lower percentage of estuaries achieving these benchmarks.

The Water Framework Directive

The Water Framework Directive is a law adopted by European countries in 2000 that aims to protect all water bodies (rivers, lakes, groundwater, estuaries, and coastal waters). The goal is to make sure that by 2027, all these waters are at least of "good" water quality, with some exceptions. This law is important because clean water is essential for public health, farming, and economic development. For example, farmers need clean water for consumption, crops, livestock, and food production.

The Role of Agriculture

The Agri-Food sector is Ireland's most important indigenous industry, playing a crucial role in the economy and food security; however, it can also impact water quality. Government policy is to support a sustainable model of food production that ensures a viable farming sector while protecting the vital resource that is our environment. The Water Action Plan (2024) is Ireland's third River Basin Management Plan. It outlines the measures the Government and other sectors are taking to improve water quality in Ireland's groundwater, rivers, lakes, estuarine and coastal waters, and provide sustainable management of our water resources. It sets out a roadmap for the various sectors on how to restore Ireland's waterbodies to the equivalent of 'good status' or better and to protect water from any further deterioration. The Water Action Plan (2024) states that farming is the biggest threat to water quality in Ireland. Fertilisers like nitrates (N) and phosphates (P) are commonly used on farms to help crops grow, but when too much gets into rivers, it causes problems like the excessive growth of plants in water, which can lead to eutrophication and ecological impacts such as fish kills. Excess sediment in our waters can destroy fish eggs, harm aquatic ecosystems, and result in farmers losing valuable topsoil from their fields.

Available Resources/Tools

A team of scientists from the Local Authority Waters Programme and other stakeholders are studying which watercourses are most affected by pollution and why. Where they find pollution and pressures from agriculture, they pass on the relevant information to the ASSAP (Agricultural Sustainability Support and Advisory Programme) team who will engage with the farmers in the affected area to try reduce nutrient, sediment and pesticide losses from agriculture. The first step in every farm visit is a rainwater management plan (RWMP) whereby ASSAP use all the available evidence as well as the tools recently developed by the EPA called Pollution Impact Potential (PIP) maps. The PIP maps are based on the nutrient loading at farm scale as well as the soil drainage potential and show the riskiest areas in the landscape for losses of nitrogen and phosphorus to water. PIP maps also show modelled overland flow pathways and flow interception points to help target actions in areas where water quality monitoring indicates an impact. The ASSAP team are using these maps, together with the farmers knowledge of water movement within farmyards and across fields to select the 'right measure in the right place'. There are 43 measures designed to address different pressures on the farm, including reducing the Source of the nutrients (e.g. the nitrogen surplus measure), intercepting the Pathway of nutrient movement (e.g. spatially targeted buffers) and protecting the Receptor (e.g. fencing watercourses to restrict animal access).

How the Funding Works

The "Farming for Water" project provides funding to help farmers implement 43 measures designed to protect water quality by reducing pollution from nitrates, phosphorus, sediment, and pesticides. These measures include practices like creating riparian buffer strips to intercept runoff and using specialised equipment to minimise pesticide loss. Applications are prepared by advisors on behalf of farmers and undergo a thorough administrative review, technical validation, and dual funding risk assessment. Once approved, farmers will receive a letter of approval outlining the supported measures and can proceed with their implementation according to the specified guidelines.

After implementing the measure, the method of verification as outlined in the approval letter, must be submitted via email to the Farming for Water team at Verify@watereip.ie. Once the project team validates the submission, payment will be issued directly to the farmer via electronic funds transfer to their bank account. Funding is allocated on a measure-by-measure basis, meaning the farmer is compensated solely for the measures they have successfully implemented.

Rules and Regulations

While the project supports farmers in implementing extra measures to improve water quality, it doesn't replace the legal requirements farmers must already follow under National and European Union rules (such as the Good Agricultural Practice for Protection of Waters). All applications must comply with the terms and conditions of the FFW EIP project, and all funded measures must comply with national and European laws protecting the environment and wildlife.

Eligibility for the Farming for Water EIP

The Farming for Water project is not an open-call initiative. Its core principle is implementing the "right measure in the right place." Determining appropriate measures involves several key factors such as:

- Key issues of concern: such as phosphates, nitrates, sediment, or pesticides.
- Waterbody objectives: whether to 'restore' (improve) or 'protect' (maintain) water quality.
- Hydrogeological characteristics: whether the area has freely draining or poorly draining soils.

Achieving the 'restore' objective is often more challenging when compared to maintaining 'protect' conditions. Therefore, these factors must be carefully assessed to ensure that measures are both efficient and effective in achieving their intended outcomes.

Targeting the Right Areas

The challenges posed by elevated levels of nitrate and phosphorous differ regionally as illustrated in the EPA's The "Targeting Agricultural Measures" map shown in Figure 1 highlights areas where agricultural measures are needed to restore water quality. Flags are used to indicate the specific types of water quality issues present in those areas.

- Orange flags show areas with nitrate pollution.
- Navy flags show areas with phosphorus or sediment pollution.
- Red flags indicate areas with pollution directly from farms or point sources.
- White flags are for areas where agriculture is not a major issue, and the focus is on protecting already clean water or there are other more significant pressures.

This map, along with additional supporting information, assists scientists and advisors in determining the most appropriate measures for each area. Nitrate pollution is a significant concern in the estuaries and coastal waters of southern, eastern, and southeastern Ireland, primarily due to the region's freely draining soils combined with intensive agricultural activity. Reductions in nitrogen losses from agricultural soils is needed here to prevent any further deterioration in the quality of our estuaries and coastal waters. Phosphorus pollution typically happens in areas with poorly draining soils where runoff happens overland, bringing soil and bound phosphorus with it, into watercourses. Targeted measures to intercept these overland pathways could deliver significant improvements in our inland waters. Soil/sediment can also wash into rivers, harming water quality and wildlife for example clogging up spawning beds for fish. For more information on how to use this Targeting Agricultural Measures Mapping tool, please visit https://www.catchments.ie/epa-launch-leaflet-to-highlight-the-targeting-agricultural-measures-mapping-tool/

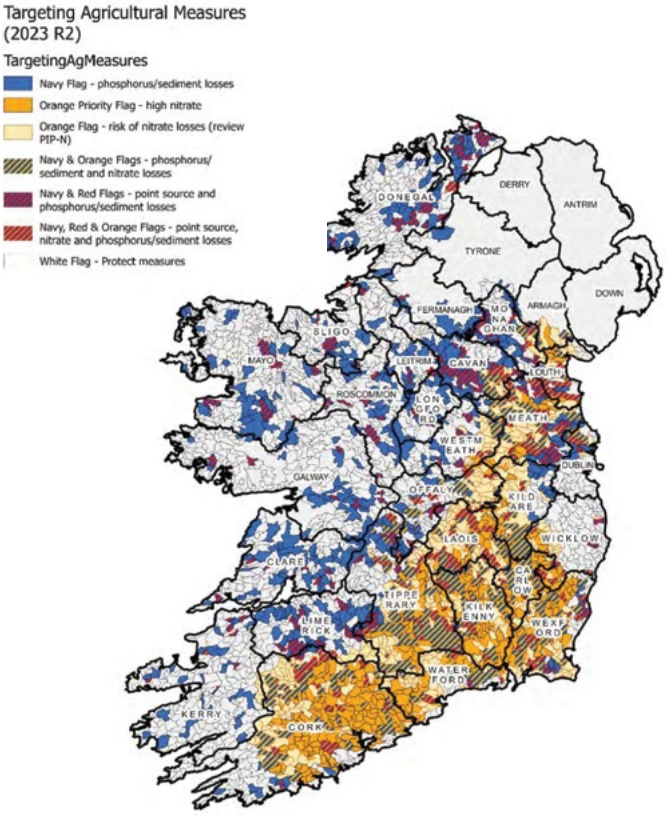

FIGURE 1: TARGETING AGRICULTURAL MEASURES TO PROTECT AND RESTORE WATER QUALITY (SOURCE EPA)

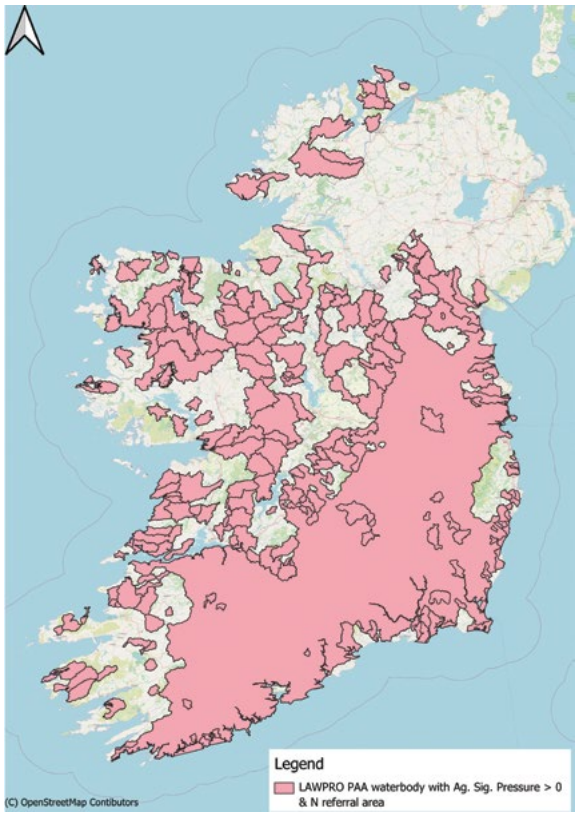

FIGURE 2: FARMING FOR WATER EIP AREAS FOR ACTION (AFA). SOURCE: LAWPRO.

Pesticides and their Impact

The use of pesticides on farms can significantly affect water quality. Certain pesticides, such as those used for treating sheep or managing rushes in grasslands, have been detected in both surface water and groundwater. The project aims to raise awareness about responsible pesticide use and reduce the amount that reaches our waterbodies.

Prioritisation of Entry into the Project

The Water EIP team will prioritise areas for focused attention, as illustrated in Figure 2, based on assessed risk levels.
The Water EIP team prioritises farms based on the following criteria, particularly where water quality targets are not being achieved and agriculture has been identified as a pressure:

1. Farmers in Areas for Action under WFD Cycle 2 with objectives to restore water quality.
2. Farmers in Areas for Action under WFD Cycle 3 with objectives to restore water quality.
3. Farmers in Areas for Action under WFD Cycles 2 and 3 with objectives to protect water quality.
4. Dairy and Tillage Farmers in High Nitrate-Risk Areas, along with other high-risk enterprises, such as piggery and poultry operations in high nitrate-risk areas.
5. Community-Led Water Initiatives: Farmers in catchments with community-driven water initiatives, which will be assessed on a case-by-case basis.
6. Referrals from EPA, Local Authorities, and other Stakeholders: Farmers outside the above categories, referred by the Environmental Protection Agency (EPA), Local Authorities (LA), or other relevant stakeholders, which will be assessed on a case-by-case basis.

In short, the "Farming for Water" project is a major initiative to reduce pollution from farming practices in Ireland and ensure that the country's rivers and other waterbodies are kept clean and healthy for the future and that we meet our obligations under the Water Framework Directive.

RAINWATER MANAGEMENT PLAN

1. RAINWATER MANAGEMENT PLAN

A rainwater management plan is a detailed evaluation of a farm, designed to map water flow across both the farmyard and the surrounding land, following the ASSAP assessment methodology. This assessment identifies areas where nutrients, pesticides, and sediment are at risk of entering nearby rivers and drainage systems. It plays a vital role in determining the most effective locations for implementing mitigation measures. The assessment is conducted in collaboration with the farmer to ensure its accuracy. The plan also considers extreme weather events, such as heavy rainfall and cloudbursts, to ensure resilient water management strategies. Furthermore, it provides an opportunity to engage with the farmer and share valuable insights about local water quality.

REQUIREMENTS

1. A rainwater management plan must be provided with all applications. This equates to the standard ASSAP farm assessment plus farm maps (including PIP maps) for the land within the Area for Action (farmyard & land holding subject to application). Proposed exceptions to the above must be accompanied by justification.

2. The farm is to be assessed as per the ASSAP Farm Assessment methodology using the Ag Planner system where available.

3. Water serves as the primary vector for transporting nutrients, sediment, and pesticides to vulnerable water receptors. By following rainwater pathways and intercepting pollutants, farmers can adopt a logical approach, enabling them to target the right mitigation measures in the right locations. The rainwater management plan consists of two key components: a) the Farmyard Map and b) the Farmland Map. These maps highlight areas at risk of pollutant runoff into water sources and identify the appropriate Farming for Water (FFW) Environmental Innovation Programme (EIP) measures to reduce these losses.
    a. Farmyards (Figure 3)
        i. To identify if rainwater enters the yard from upslope and transverses the farmyard area.
        ii. Identify the outfall drains from the farmyard and provide advice on how to prevent contaminant losses entering the drainage network e.g. recommending applicants to apply for TAMS funding where necessary.
        iii. To identify locations for interception measures.
        iv. Provide advice (captured on Ag Planner) on areas within the yard that require attention, diverting clean water away from the yard.
    b. Farmlands
        i. To use information available from EPA PIP and Flow Delivery Path, Flow Delivery Point maps and LAWPRO characterisation and referral information to identify the areas/points on a farm map where mitigation measures are best situated. PIP maps must be verified on the ground in consultation with the farmer.
        ii. Advisors and farmers should leverage their expertise and local knowledge to identify areas not included on the EPA maps that may be contributing to water quality issues. Appropriate measures should then be recommended to address these concerns.
        iii. Interception of pathways with appropriate measures to be recommend by Advisors from the list of FFW EIP measures and may also consider Bespoke Measures.

4. The farmyard, farm roadways, farm drain network springs/ wells, location of underpasses, culverts etc. must all be examined as part of the rainwater management plan.

5. The rainwater management plan submitted to the EIP project team must include the following:
    a. An aerial (satellite) map of the farmyard, identifying flow of water through the yard & clean water outfall to

drainage network. This map must also show/identify any EIP funded measures for the farmyard.

b. Aerial (satellite) maps identifying the flow delivery paths and points for the farm that fall within the Area for Action or Referral area.
c. PIP N & PIP P maps for the applicants farm that fall within the Area for Action or referral area.
d. The flow delivery path/point map must show/identify the locations of any EIP funded measures outside of the farmyard.
e. The measures for submission to the EIP Team are to be identified on the excel application form.

PAYMENT

Applicants will receive a one-off payment of €250 for participation in the development of the Rainwater Management Plan. The critically important aspect for knowledge transfer and enhancing farmer awareness of water quality both within their own farm and their river catchment.

VALIDATION

Submission of plan.

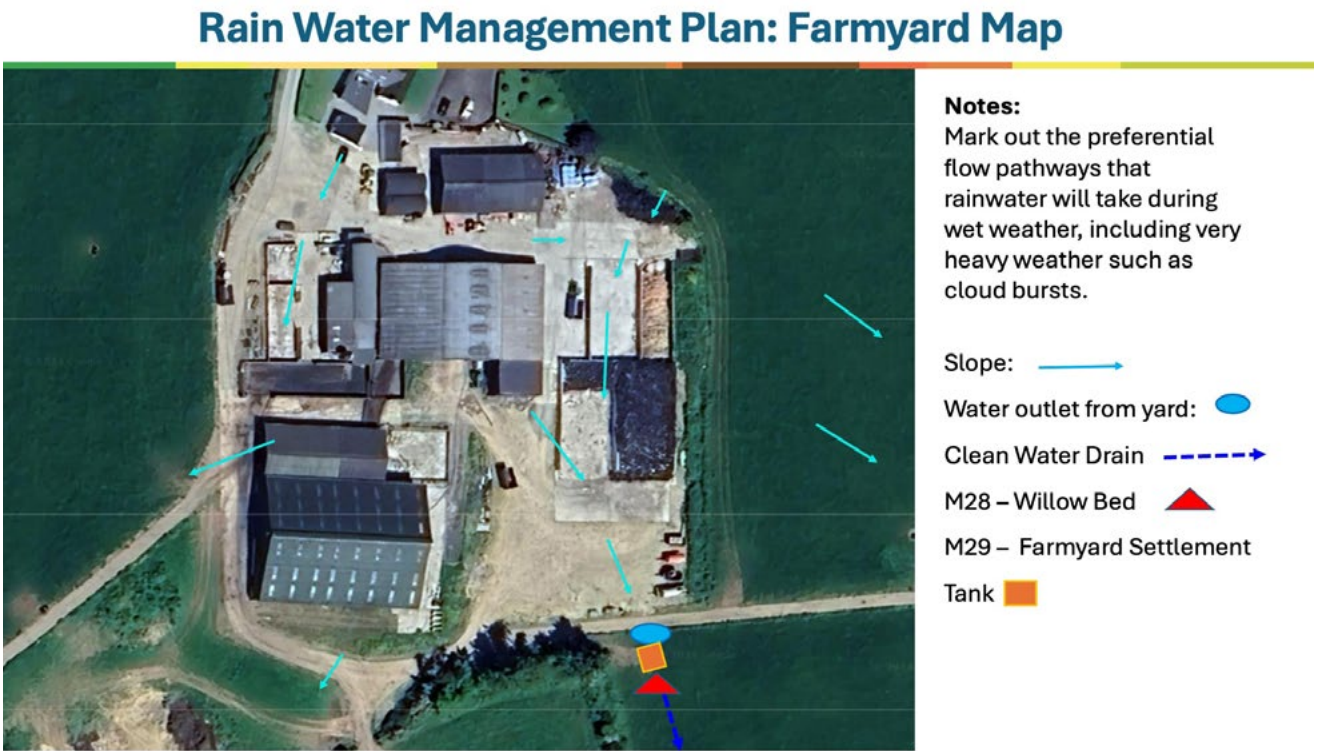

FIGURE 3: EXAMPLE OF A RAIN WATER MANAGMENT PLAN: FARMYARD MAP

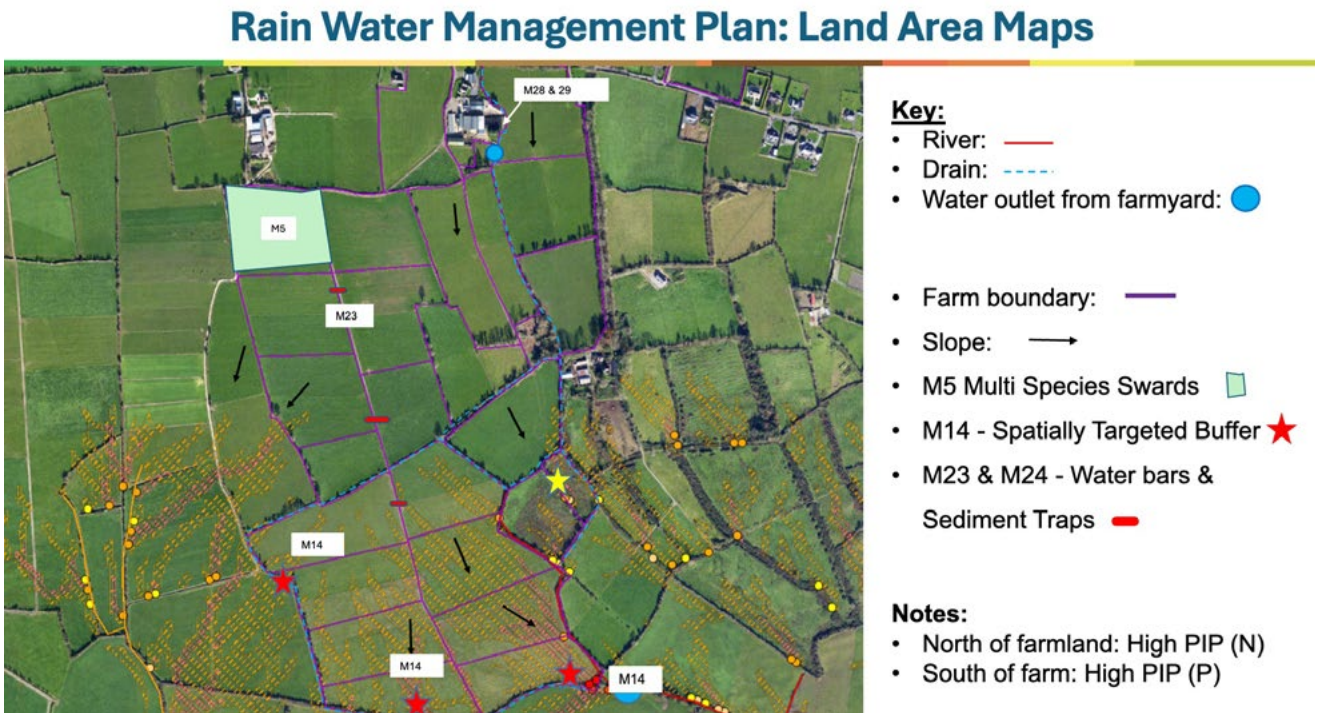

FIGURE 4: EXAMPLE OF A RAIN WATER MANAGMENT PLAN: LAND AREA MAPS

SOURCE CONTROL MEASURES

FARMING for WATER
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SOURCE CONTROL MEASURES

2. FARMER TRAINING COURSE

Farmers will be given the opportunity to attend a training course as part of the FFW EIP. The course will provide farmers with information on water quality, how water pollution occurs, and actions to mitigate pressures on water. ASSAP advisors will be required to organise & facilitate farmer training courses as part of the EIP.

REQUIREMENTS

1. Attendance at the course is voluntary and each farmer will be offered the opportunity to attend one course.
2. The duration of the course will be 3 hours at a central location.
3. Farmers will be permitted to send a family member/ person involved in the farming operation (spouse, son/ daughter, farm manager) if unable to attend in person. Proof of identity will be required e.g. photo ID, drivers' licence etc. and attendee must be over 18.
4. Topics covered in the training course will be relevant to significant local water quality pressures e.g. best practice in pesticide use in areas where pesticides are impacting water quality.
5. The maximum number of participants per course is 30. Ideally, courses should be held outdoors at a suitable streamside location or another relevant site. Indoor venues may be used if inclement weather is forecast, but only as a last resort.

PAYMENT

Applicants will receive €156 on completion of the course. Proof of attendance at the course must be submitted to the EIP project team. This EIP Farmer Training Course does not satisfy the required training for Nitrates derogation farmers.

VALIDATION

Sign in and sign out on attendance register for the 3-hour course. Advisors will be required to return completed attendance sheet to EIP project team to facilitate payment.

3. NUTRIENT MANAGEMENT PLAN

A nutrient management plan (NMP) provides farmers with valuable information on the nutrient status of their farm/ farming system. The aim is to inform farmers when & where to apply nutrients to achieve optimum slurry recycling and nutrient uptake by plants and to prevent over application of nutrients.

REQUIREMENTS

1. This measure is applicable to those participants that do not require a NMP under current GAP regulations or other scheme requirements.
2. Nitrates Derogation applicants are not eligible to apply for this measure.
3. A new NMP must be prepared by an approved agricultural advisor along with farm maps based on soil sampling results.
4. Only a plan produced by the Teagasc Online (NMP) Programme, The Farm Eye (NMP), Grassland Agro (NMP) Programme or any other DAFM approved NMP Programme is acceptable.
5. Soil Samples must be from a DAFM approved laboratory (ISO/IEC 17025:2000 accredited).
6. Soil samples should be taken within 2 years of the NMP submission date to the EIP Project Team. Samples must follow DAFM best practices, which recommend taking one soil sample every 2-4 hectares.
7. Critical source areas (areas at high risk of nutrient losses) must be identified through discussions with the applicant and appropriate nutrient advice given.
8. The plan should identify any peat soils and appropriate advice given.
9. The applicant must be provided with a full NMP including organic manure generation & storage, fertiliser allowances, liming plan and relevant colour coded maps.

PAYMENT

- Applicants will receive €400 for the submission of an NMP. Applicants can avail of this measure once over the lifetime of the EIP project.

VALIDATION

Submission of completed (NMP) (including farm maps) along with a copy of relevant soil sample results.

4. NITROGEN SURPLUS

Nitrogen Surplus follows a nutrient accounting approach. Farm gate inputs of nitrogen (e.g. purchased fertiliser, feeds, livestock, imported organic manures) are calculated minus farm gate outputs of nitrogen (e.g. sales of milk, livestock, manures exported) to give a nitrogen balance per hectare figure and Nitrogen Surplus for the participating farm.

A Nitrogen Surplus is an indicator of potential risk of loss of nitrogen to our aquatic environment. Completing a Nitrogen Surplus will allow for advisor/farmer discussions on how best to reduce excess nitrogen in the farming system by taking on measures to reduce nitrogen inputs and improve utilisation of existing nitrogen inputs. Soil fertility is a key driver when aiming to maximise nutrient uptake by the plant. The application of sulphur is an important nutrient for grassland production and is closely associated with nitrogen uptake and efficiency. Currently Nitrogen Surplus does not take account of clover levels in the grassland swards. It is hoped to integrate this aspect over time.

REQUIREMENTS

1. This measure is only applicable to dairy farms where nitrate is a significant issue in the receiving waterbody/estuary.

2. The following three datasets should be used to identify where nitrate is a significant issue in the receiving waterbody/estuary.
   a. The Targeted Agricultural Measures Map - any areas with an orange flag.
   b. The 12 Catchments of Concern that have been identified by the EPA as having elevated nitrate concentrations (The Boyne, the Tolka, the Liffey, the Slaney, the Barrow, the Nore, the Suir, the Blackwater, the Lee, the Bandon, the Deel and the Maigue).
   c. The LAWPRO catchment referrals for nitrogen

3. Identify a full Nitrogen Surplus per hectare for each farm using the online platform AgNav. Where a farmer is not signed up to the AgNav platform, the nitrogen surplus calculation may be submitted using the Pasture Base system or other excel based system agreed with the EIP team. The figure shall be used for a discussion between farmer and advisor on measures to reduce the nitrogen surplus per hectare figure. The farmer and advisor should agree to take on a measure for the coming year. At the end of the year the advisor will revisit the farm to assess the implementation of the agreed action. On completion of a new nitrogen surplus calculation, the farmer will be paid another €250. This can be repeated yearly, until the end of the project.

4. Suggested measures include:
   - Reduce chemical N application by 10% from baseline figure. The baseline figure is the tonnes of N purchased in the previous calendar year.
   - Reduce chemical N application by a further 5% for the remaining years of the EIP.
   - Incorporate sulphur into 50% of chemical N applications.
   - Reduce crude protein content of concentrates fed to livestock below regulatory requirements.
   - Other measures, as deemed suitable by the advisor.

5. Nitrogen Surplus requires data from fertiliser register, co-op milk sales, livestock sales and purchases, imported and exported feed, BISS application etc. Ensure all dockets used for data input are retained.

PAYMENT

Applicants will receive €250 on submission of a Nitrogen Surplus figure. Payment on annual basis subject to submission of the relevant information.

VALIDATION

Year 1: Submission of a Nitrogen Surplus figure and a signed declaration (Appendix 9) by both farmer and advisor on how to reduce to Nitrogen Surplus/ha.

Subsequent years: Submission of a Nitrogen Surplus figure annually and a signed declaration by both farmer and advisor on how to reduce Nitrogen Surplus/ha. Documentation to be submitted prior to the EIP application approval date anniversary. For example, the application approval date is August 1st, 2024, then verification, then verification requirements need to be sent in prior to the anniversary date in subsequent years.
For further information:

- https://www.teagasc.ie/news--events/daily/environment/nitrogen-use-efficiency--cleaner-water.php
- https://www.teagasc.ie/news--events/daily/grassland/why-all-the-fuss-about-sulphur.php

5. MULTI-SPECIES SWARDS

Multi-species swards (MSS) are made up of a variety of plants from different families, including clovers, grasses, brassicas, and herbs. These swards offer numerous benefits, such as improving soil biodiversity, enhancing soil structure, and reducing greenhouse gas emissions. In terms of water quality, MSS can help reduce the need for fertiliser applications while supporting steady plant growth. The inclusion of plantain (at 30%) and chicory in multi-species swards can reduce nitrogen losses on the farm by improving nitrogen utilisation by animals and decreasing farm leaching. Additionally, multi-species swards are more resilient to drought compared to monocultures. They recover more quickly after receiving moisture, providing greater adaptability and resilience to climate change.

REQUIREMENTS

1. This measure cannot be used for DAFM annual Multi-Species Sward Measure (MSSM) or for Eco Scheme requirements.
2. This measure cannot be located in an ACRES area-based action.
3. Commonage and Natura 2000 sites are excluded from this measure
4. Avoid replacing areas of existing biodiversity (naturally diverse permanent pasture that is not designated) or unused land on the farm with new multi-species swards.
5. Incorporate MSS as part of the normal spring reseeding programme for the farm.
6. This measure is recommended for PIP N ranked 1 - 4 paddocks.
7. Choose grazing paddocks over silage fields and choose paddocks with a low weed burden.
8. Over-sowing/direct drilling is preferable as it will result in lower losses of nitrogen & retains more soil organic matter than a full reseed.
9. Sow the multi-species seed mix at a rate of 12kg/acre (30kg/ha) at approx. 1 cm deep (choose seeder carefully to avoid seed separation).
10. Chemical fertiliser N must be reduced to allow the clover within the MSS to work. It is important that soil fertility is good i.e. pH 6.2-6.5 and Index 3+ for P & K. Best conditions for sowing are without drought or frost, and ideally a warm, moist seedbed (~10°C) between April and August.
11. Where MSS fails to establish, it must be replanted.
12. The MSS must remain in place for duration of the EIP project.

PAYMENT RATE

- €300/ha
- Min 0.5ha. Max Area: 10ha @ 30kgs/ha

VALIDATION

Relevant geotagged photo (using apps such as GPS Map Camera) showing clearly the measure that has been applied for and proof of costs (seed labels/receipts/invoices).

For more information on MSS:

- https://www.teagasc.ie/media/website/environment/climate-change/signpost-programme/Factsheet_MultiSpeciesSwards.pdf
- https://www.teagasc.ie/environment/climate-change—air-quality/signpost-programme/research-updates/multi-species-swards/

6. CATCH CROPS

Catch crops utilise residual nutrients in the soil following the harvest of a cereal or oilseed crop, thus maintaining soil biology and preventing leaching of soluble nutrients such as nitrate. With their vigorous root systems, these crop species condition and break up the soil, making it more friable for ease of cultivation, while the residual herbage that remains greatly enhances the organic carbon content and structure of the soil. Catch crops generate a large mass of herbage which helps protect the soil from exposure to heavy rainfall during the winter period. This reduces the potential of leaching of nutrients, soil erosion and surface run-off while also increasing water infiltration.

REQUIREMENTS

1. Establish a catch crop using non-inversion techniques (ploughing is not allowed) where it will provide a water quality benefit.

2. For Option 6A (Other Cropping Systems), the crop should be sown as early as possible, ideally by mid-August but no later than 1st September annually each year. This catch crop must remain in place until 1st January annually.

3. For Option 6B (Winter Cropping Systems), the catch crop should be set by the 1st August and remain in place until 30th September.

4. The minimum area to be delivered is 0.5 hectares. The maximum area for payment is 20 hectares, cumulative between Measures 6A & 6B.

5. Area for payment may be increased based on scientific justification. This will be decided on a case-by-case basis in conjunction with the FFW EIP Project Team.

6. When sowing the catch crop, the under sowing or sowing of a grass crop is not permitted.

7. The main cereal crop cannot be under sown with catch crop species.

8. The seed mixture should consist of at least 2 species from the list in Appendix 2. Suggested mixtures in table below:

Brassica Mix (4kgs Mustard & 4 kgs Leafy Turnip)
Non Brassica Mix + Graze (30kgs Forage Rye, 2.75kgs Winter Vetch (hairy) 3.75kgs Spring Vetch)
Best N Capture (less club root risk) (black oats & oilseed radish)
Rotation Friendly (15kg Vetch, 4kg Phacelia)

9. After 1 January, light grazing or incorporation is permitted. Participants should ensure grazing only takes place where soil erosion is not considered to be an issue. Intensive strip grazing/zero grazing is not permitted. Grazing of a catch crop in situ requires a 4m buffer (grass/vegetated margin) from the surface water edge (GAP Regulations). Ensure to comply with all GAP regulations when setting Catch/Cover Crops.

10. Where a watercourse is present on or adjacent to the parcel, bovines are not permitted to access the watercourse. Where no natural barrier exists, the watercourse must be fenced at least 1.5m from the top of the bank when bovines are present (drinking points are not permitted.) In tillage settings, riparian buffer measures must be fenced off if livestock graze the cover crop at any stage.

11. Annual Declaration plus map must be submitted to EIP Project Team outlining the following:
    a. Map outlining area sown with Catch Crops under EIP
    b. Completed Annual Catch Crop declaration form (Appendix 1).

12. A farmer participating in the ACRES programme for catch crops (or any other scheme involving catch crop measures) cannot simultaneously overlap Water EIP catch crops on the same land area designated for ACRES during any given programme year. This ensures compliance with programme rules and prevents double funding for the same measure on the same parcel of land.

13. EIP Catch Crops do not qualify for GAEC 7 (crop diversification rule) which is required for BISS payments.

14. All EIP dockets should be separate to ACRES.

PAYMENT

- 6A: Other Cropping System: €229/ha/yr.
- 6B: Winter Cropping System: €173/ha/yr.

The minimum area to be delivered is 0.5 hectares. The maximum area for payment is 20 hectares cumulative between Measures 6A & 6B.

VALIDATION

Option 6A: Annual Relevant geotagged photo (using apps such as GPS Map Camera) showing the measure and area that has been applied for, proof of seed purchased (showing type of seed purchased plus kgs i.e. seed bag labels) along with an annual declaration submitted by 1st October annually.

Option 6B: Annual Relevant geotagged photo (using apps such as GPS Map Camera) showing the measure and area that has been applied for, proof of seed purchased (showing type of seed purchased plus kgs i.e. seed bag labels) along with an annual declaration submitted by 1st September annually.

For more information on Catch Crops:

- https://www.teagasc.ie/media/website/environment/climate-change/signpost-programme/The-Soil-is-Alive—Willing-to-Help.pdf
- https://www.teagasc.ie/media/website/publications/2023/Catch-crops-yield-multiple-benefits-if-you-get-them-in-early.pdf
- https://www.teagasc.ie/crops/crops/cover-crops/

7. LOW DRIFT NOZZLES

Low-drift nozzles are specifically designed to produce larger spray droplets with minimal driftable fines, thereby reducing the potential for pollution. This is achieved through a pressure-reducing chamber inside the nozzle, which incorporates air into the spray droplets to enhance their size and stability.

REQUIREMENTS

1. Retro fit existing sprayer with low drift nozzles to reduce spray drift.

2. Reduced buffer zone requirements as per STRIPE is not allowed under the Waters EIP.

PAYMENT RATE

- €5/nozzle up to a max of 40 nozzles.

VALIDATION

Proof of costs.

8. MOBILE DRIP TRAY

A mobile drip tray is designed to prevent spills while filling sprayer tanks, ensuring a cleaner and safer operation by containing any accidental leaks or overflows.

REQUIREMENTS

1. Use a mobile drip tray when filling sprayers to catch any accidental spills and prevent these spills from reaching clean water drains.

PAYMENT

- €22/tray. Min 1. Max 2.

VALIDATION

Proof of costs.

9. WATER STORAGE TANKS (IBC TANK)

Water storage tanks are essential for use on fragmented farmland, providing a reliable water source for filling sprayers without drawing directly from streams or rivers. They are also valuable for sheep farmers, offering a safe and contained solution for storing spent sheep dip, thereby reducing environmental impact.

REQUIREMENTS

1. IBC tank with 1000L of storage which can be filled in the farmyard and taken to the outside block of land where it must be used for filling the sprayer.

2. Tanks must be non-transparent to block light that encourages algae growth.

3. Applicants cannot apply for funding through the EIP and TAMS for the same water storage tank.

PAYMENT

- €400/tank. Min 1. Max 2.

VALIDATION

Proof of costs (must be a new IBC tank to qualify for EIP funding).

10. RETROFIT A CLEAN WATER TANK

Retrofitting a clean water tank onto basic sprayers promotes efficient tank rinsing directly in the field. This upgrade is particularly beneficial for safety and it also minimises environmental contamination, especially for sprayers that currently lack this feature.

REQUIREMENTS

1. Retrofit water tank onto existing sprayer.

2. This measure is open to all farmers.

PAYMENT

- Up to €500/applicant. Max of 1 per applicant.

VALIDATION

Proof of costs.

11. DECOMMISSION SHEEP DIP TUB

Sheep dipping is an essential practice for controlling specific parasites in sheep. However, the chemicals involved can be toxic, posing significant risks to watercourses and aquatic organisms. These risks are heightened when dipping stations are poorly constructed or maintained, situated near watercourses, or lack safe disposal grounds for spent sheep dip. Improper handling or disposal of sheep dips and pour-ons can result in toxic events in water bodies, severely impacting invertebrate populations and disrupting aquatic ecosystems.

REQUIREMENTS

1. The dipping station must be permanently decommissioned. This requires the tank to be filled in and capped with concrete. The dipping station can continue to be used as a pen provided there is no pathway to watercourses.

2. Applicants cannot apply for funding through the EIP and TAMS for the decommissioning of the same sheep dip tub.

PAYMENT

- €284 for 1 sheep dipping facility only. Max 1.

VALIDATION

Relevant geotagged photo (using apps such as GPS Map Camera) showing clearly the measure that has been applied for.

12. SUBMERSIBLE PUMP

A submersible pump can only be applied for in conjunction with a water storage tank (Measure 9). The pump is used to transfer spent sheep dip from a dipping tub into a water storage tank, such as an IBC. The tank is then removed, and the contents are disposed of following best practices for the disposal of spent sheep dip, typically by transferring it into a slurry storage tank.

REQUIREMENTS

1. The spent sheep dip must be disposed of following all guidelines regarding diluting it with slurry/water and land spreading under suitable conditions on suitable spread lands.

2. The applicant must have a suitable facility to store the spent sheep dip for the correct disposal.

3. If the IBC tank is being transported to an authorised disposal site, it must be moved on a bunded trailer or transferred into a vacuum tanker, as there is a high risk of spillage.

4. Applicants cannot apply for funding through the EIP and TAMS for the same submersible pump.

PAYMENT RATE

- Max funding of €175 in total.

VALIDATION

Proof of costs.

PATHWAY INTERCEPTION MEASURES

PATHWAY INTERCEPTION MEASURES:

13. HEDGEROW ESTABLISHMENT

Hedgerows are very effective in reducing the risk of land-spread material moving over sloped ground during heavy weather or cloud bursts, if planted across the slope in an overland flow pathway. There are two options to this measure, planting a hedgerow with or without an earthen mound. The earthen mound increases water interception and storage at the base of the hedge.

Advisors should recommend this measure in the dominant flow pathways, i.e. the high and very high flow pathways as indicated on the EPA PIP P Flow Pathway Maps and verified by an ASSAP advisor and farmer on the ground. The earthen mound should be sufficiently long to intercept and slow the overland flow. Be mindful when applying for this measure that the flow won't be diverted elsewhere to create a new flow pathway.

Hedgerow establishment will also have co-benefits for flood mitigation, carbon sequestration, soil erosion and biodiversity.

REQUIREMENTS

1. This measure cannot be located within an ACRES area-based action to avoid dual funding risks.

2. Identify and agree on locations in collaboration with the farmer, using tools such as the EPA PIP Maps, particularly on sloped ground or in areas like large open fields where significant overland flow occurs during wet weather.

3. Determine the most suitable native hedgerow species for the area by observing which species are thriving locally. For example, whitethorn and holly do not tolerate very wet soils, and whitethorn is not well-suited for high elevations. Blackthorn, in contrast, thrives better in heavy soils and on coastal, exposed sites.

4. Plants must be of Irish Origin or Irish Provenance and purchased from DAFM registered professional operators. All plants must have accompanying plant passports.

5. To establish a mound, furrow or break the ground to loosen the soil, then build a low earthen mound at the base. The height of the mound will vary depending on the location, but it should generally be around 0.3 meters high (with heights over 0.15 meters still offering benefits), 1 meter wide at the base, and 0.4 meters wide at the crest. The slope of the bank should be as shallow as possible to blend into the landscape, especially on the downslope side, which could be prone to erosion if overtopped. Allow an additional 25% of material to account for soil settlement. Ensure proper compaction during the formation of the bank. Position the hedge just off the crest of the bank on the downslope side to prevent the trees from drying out. (Source: The Natural Flood Management Manual).

6. Plant whips in a double staggered row, 1ft between the whips and 1ft between the rows (minimum 5 plants per metre).

7. The use of pesticides or herbicides is not permitted within 1.5 metres of the hedge after planting, although spot treatment of noxious weeds is allowed. Biodegradable plastic can be used to suppress grass growth. If rabbits are an issue, consider using tree guards (preferably biodegradable) or a low electric fence for protection.

8. Failed or dead plants must be replaced during the following planting season.

9. The applicant must have control of and access to both sides of the new hedgerow to ensure proper maintenance.

10. Generally, the wider the hedge, the more effective it is at capturing water and sequestering carbon.

11. Identify if the farm meets the "space for nature" requirement for the Eco Scheme.

12. The newly planted hedge must be fenced off to protect it from livestock. For best practice, place the fence at least 1.5 metres away from the plants to prevent livestock from grazing on the young hedge.

13. Planting should be carried out between October & March.

14. It is recommended to prune whitethorn plants at planting, leaving them about 4 inches above ground level. Ideally, further pruning should be done in years 2, 3, and 4 to promote the growth of a dense, stock-proof hedgerow.

15. The new hedgerow must be maintained following best practices to ensure proper establishment and healthy growth.

16. Aim to allow the hedgerow to eventually establish to over 1.8m in height.

PAYMENT RATE

- 13A: Hedgerow establishment including earthen mound: €24.37/m
- 13B: Hedgerow establishment without earthen mound:€21.17/m
- Cumulative meters of hedgerow paid is 250m and can be made up of a combination of 13A & 13B e.g.: 50m of 13A plus 200m of 13B. Min of 10m required. Max of 250m.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs.

14. SPATIALLY TARGETED RIPARIAN BUFFER ZONES

A spatially targeted riparian buffer zone is an uncultivated area adjacent to rivers, streams, drains, ponds, lakes, turloughs, and similar bodies of water, designed to intercept sediment and nutrients that have been mobilised from soil surfaces. Correctly designed, located and managed these will work to intercept and retain water and pollutants transferred from adjacent fields by surface and subsurface pathways, diversify terrestrial habitats and provide other services to benefit communities and wildlife. Spatially targeted buffers will be of various shapes and sizes. The sizing of the buffers will need to take account of the size of the flow pathway relative to the contributing catchment area.

These buffers are suited for mitigating overland flow pathways with point discharge to the drainage network rather than sheet flow discharge. Linear riparian buffer zones (Measures 15 & 16) are more suited to mitigating sheet flow discharges to the drainage network.

It should be noted that adequate source control measures must be implemented on each farm to avoid riparian buffers becoming overloaded with nutrients. Riparian buffers are part of a wider catchment management plan to reduce overall loads.

The advisor will use the EPA PIP Maps and Diffuse Tools to identify focused flow delivery zones and points, validated at the field scale. This process helps pinpoint pathways and areas in the landscape with the highest risk of phosphate and sediment loss to water bodies.

REQUIREMENTS

1. Spatially Targeted Riparian Buffer Zones are site-specific and have irregular shapes. Their shape and size are determined by the overland flow pathways identified using the EPA PIP Maps.

2. Spatially Targeted Riparian Buffer Zones can be sited within ACRES Low Input Permanent Pasture, Extensively Grazed Parcels and/or Management of Intensive Grassland next to a Watercourse at the reduced rates outlined below.

3. No organic/inorganic manures allowed in the spatially targeted riparian buffer zone.

4. No grazing allowed within the spatially targeted riparian buffer zone.

5. Grassland spatially targeted riparian buffer zones must be fenced off. Tillage buffer zones can be unfenced where no livestock are present.

6. It is strongly recommended to plant spatially targeted buffer areas with native trees in conjunction with Measure 17 (Tree Planting).

7. Where required, maintenance of spatially targeted buffer zones should be carried out to ensure that they continue to function effectively. This may require periodic cutting/strimming and removal of vegetation (observe all legal requirements) as required. Leave a gap handle or install a suitable gate to allow access for maintenance.

FIGURE 3: SPATIALLY TARGETED RIPARIAN BUFFER ZONES WILL HELP TO INTERCEPT SEDIMENT AND NUTRIENTS FROM SOIL SURFACES.

8. Spatially Targeted Riparian Buffer Zones can also be applied in other areas on the farm that generate overland flow, such as hard surfaces like farm roadways. In these cases, Measure 14 can be combined with Measure 23 (Water Bars) and, ideally, densely planted with native trees (Measure 17) to serve as a polishing filter.

PAYMENT RATE

- 14A: Spatially targeted riparian buffer zones: 0.01ha - 0.04ha. €400/unit (ACRES Reduced Rate: €228/unit)
- 14B: Spatially targeted riparian buffer zones: 0.05ha - 0.1ha. €915/unit (ACRES Reduced Rate: €481/unit)
- 14C: Spatially targeted riparian buffer zones: 0.11ha - 0.2ha. €1656/unit (ACRES Reduced Rate: €787/unit)
- Min 1 & max 5 combined from 14A, 14B and 14C.
- Applicant to apply for fencing of this measure under Measures 30 (Bovine Exclusion from Watercourses) and 31 (Ovine Exclusion from Watercourses) (1000m cumulative limit applies). Applicant may also apply for Measure 33 (Solar Powered Electric Fence) if required.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for.

For more information on spatially targeted measures:

- https://lawaters.ie/app/uploads/2022/01/Print_CSM-Volume-1_April-2022.pdf
- https://www.ballyhouradevelopment.com/european-innovation-partnership-deel-river

15. 16. LINEAR RIPARIAN BUFFER ZONES

A linear riparian buffer zone is an uncultivated area located adjacent to rivers, streams, drains, ponds, lakes, turloughs, and similar waterbodies. It helps intercept sediment and nutrients that have been mobilised from soil surfaces. When properly designed, located, and managed, riparian buffers effectively intercept and retain water and pollutants transported from adjacent fields through surface and subsurface pathways. They also enhance terrestrial habitats and provide various services that benefit wildlife.

The EPA PIP - P map and the flowpaths map should be used to inform where best to site linear riparian buffer zones.

REQUIREMENTS

1. Erect a permanent fence to create a 3m or 6m linear riparian buffer zone from the top of the bank of any surface water (rivers/streams/drains/ponds/lakes/ turloughs etc.). Measure from the top of the bank of the river, even if the riverbank is sloped out. Do not measure from the highest water line.
2. The 3m and 6m is exclusive of the mandatory 1.5m for derogation farmers. The total distance to be fenced out from the surface water is 4.5m or 7.5m, for derogation farmers, depending on option chosen.
3. Grassland buffer zones are to be fenced off.
4. Tillage buffer zones can be unfenced where no livestock is present.
5. For tillage buffer zones, a grass mix must be established by May 31st using non-inversion techniques (ploughing is not permitted). The mandatory 3m uncultivated margin remains untouched as per GAP regulations.
6. The establishment of the grass mix will occur within the additional 3-metre area during year 1 only. Once the grass buffer is established, no soil cultivation is permitted within the buffer zone.
7. The seed mix must contain at least 3 grass species, of

FIGURE 4: CORRECTLY DESIGNED, LOCATED AND MANAGED LINEAR BUFFER ZONES WORK TO INTERCEPT AND RETAIN WATER AND POLLUTANTS TRANSFERRED FROM ADJACENT FIELDS.

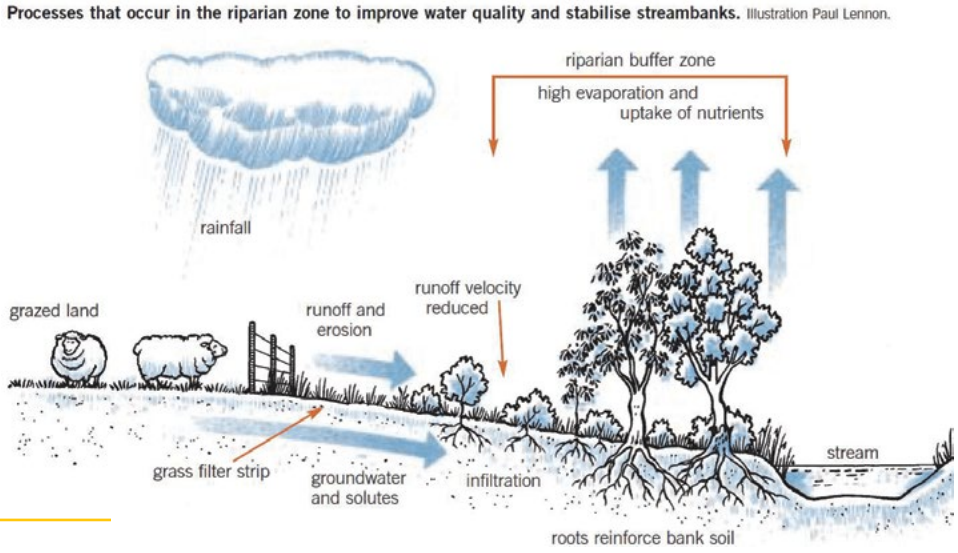


FIGURE 5: AN IDEAL SCENARIO WITH RIPARIAN BUFFER ZONES IN OPERATION.

which Cocksfoot must make up a minimum of 40%. Seed labels and receipts must be kept for the duration of the contract. Grass mix @ 25-30kgs/ha: Meadow Fescue (Festuca pratensis), Timothy (Phleum pratense), Perennial Ryegrass (Lolium perenne), Smooth Meadowgrass (Poa pratensis), Red Fescue (Festuca Rubra), Cocksfoot (Dactylis glomerata) @ least 40%.

8. No pesticides or fertilisers (whether chemical or organic) are allowed within this area, except for the treatment of noxious weeds or invasive species.

9. No grazing is allowed within riparian buffer zones.

10. Topping or strimming these strips is strongly encouraged between August and September, with the cuttings removed to minimize nutrient buildup in the buffer zone. This maintenance can be carried out annually or less frequently, depending on the extent of the overland flow pathway.

11. Overlap of measures with other DAFM schemes or other EIP/LIFE projects is not permitted (i.e., double funding of measures is prohibited).

12. Payment cannot be received on any measure that is currently a requirement of the GAP Regulations (i.e., current buffer of 6m for late harvested crops is not eligible for payment under the Waters EIP).

13. Permission may be required before commencing any work within or near a protected area, Natura 2000 site, or archaeological site.

14. The maximum total length of combined Linear Riparian Buffer Zones (Grassland and Tillage) allowed per farm is 500 metres.

15. It should be noted that adequate source control measures must be implemented on each farm to avoid riparian buffers becoming overloaded with nutrients. Riparian buffers are part of a wider catchment management plan to reduce overall loads.

PAYMENT RATES

15	Linear Riparian Buffer Zones: Grassland (in addition to Mandatory GAP Regulations)				
15A.1	3.0 Margin	50	500	/m/yr	€1.71
15A.2	3.0 Margin (Sheep Fencing Rate)	50	500	/m/yr	€2.50
15B.1	6.0m margin	50	500	/m/yr	€2.11
15B.2	6.0m margin (Sheep Fencing Rate)	50	500	/m/yr	(€2.90)
16	Linear Riparian Buffer Zones: Tillage (in addition to Mandatory GAP Regulations)				
16A	3.0m margin	50	500	/m/yr	€0.38
16B	4.0m margin	50	500	/m/yr	€0.51
16C	6.0m margin	50	500	/m/yr	€0.77
16D	8.0m margin	50	500	/m/yr	€1.02

VALIDATION

Annual relevant geotagged photo showing clearly the measure that has been applied for.

17. TREE PLANTING

A wooded buffer along one or both banks of a river provides significant benefits. Trees help absorb excess nutrients, such as phosphorus, and prevent sediment from reaching the river. They also increase soil infiltration rates and slow the overland flow of water. Additionally, trees stabilise the riverbank, reducing erosion, and offer a terrestrial habitat for various animal species.

In certain situations, Forests for Water (FT2) or the Native Tree Areas Scheme (NTA 1 or NTA 2) under the current Forestry Programme 2023-2027 may be more appropriate options. Please contact the EIP team for further discussion and guidance.

REQUIREMENTS

1. This measure can be implemented alongside Measure 14 (Spatially Targeted Buffers) as well as Measures 15 and 16 (Linear Riparian Buffer Strips for both grassland and tillage).

2. Applicants can also apply for this measure where planting of trees along surface waters has potential to lead to a water quality benefit.

3. The planting of trees under this measure does not contribute to the planting of trees as part of an Eco scheme for Pillar 1 payments.

4. Plants must be of Irish Origin or Irish Provenance and purchased from DAFM registered professional operators. All plants must have accompanying plant passports.

5. Refer to the list of approved trees provided in Appendix 3 for this measure.

6. Plant at least three species from the approved list of trees to enhance diversity and rooting depth. Ensure a minimum spacing of 3 metres between trees.

7. Min height of trees at planting is 60cm. Tree guards/ shelters required to ensure good establishment.

8. Any failed trees must be replaced to ensure successful establishment.

9. Do not plant trees within the vicinity of overhead wires, 20m of railway lines and within 60m of a neighbouring dwelling house (see Appendix 4).

10. Site disturbance and inputs should be minimised. Trees must be pit-planted in a vegetation-free area, with no heavy machinery or drainage allowed. Species selection should align with the most suitable native woodland type for the site, considering factors such as site conditions, soil, drainage, and elevation. For further details, please refer to DAFM's Forestry Standards Manual / Native Forest Framework and the Teagasc website for further information.

FIGURE 6: PLANTING TREES BENEFITS WATER QUALITY, BIODIVERSITY, AND CLIMATE CHANGE, WHILE ALSO HELPING TO PREVENT EROSION.

11. In arterial drained catchments, the OPW requires certain banks to remain vegetation-free. Please consult with the OPW before planting in these catchments. Similarly, prior consultation with NPWS is required for planting within a Natura 2000 site (an action that requires consent).

12. Avoid potential tunnelling along rivers where both banks are densely planted with trees. "A monoculture of alders, a common feature on many drained Irish channels, can have a particularly heavy shading effect. In contrast, a mixed assemblage of deciduous trees (such as Oak, Ash (now not recommended due to ash die-back), Birch, Holly, Willow and Alder) tend to have different profiles and vary in height. This broken canopy will usually allow sufficient incident light to reach the bed and banks of the channel thereby preventing a tunnelling problem". (O'Grady, M.F., 2006)

13. Where feasible, plant trees on the southern bank of the waterbody to provide shade, which offers a climate change benefit by helping to regulate water temperature.

14. Planting trees near salmonid rivers requires consultation with Inland Fisheries Ireland. Additional measures should be implemented to reduce sedimentation, especially during spawning seasons and when eggs are in the gravels, in order to protect these sensitive rivers.

15. Do not remove existing trees, scrub or hedgerow to facilitate the tree planting action.

ADDITIONAL INFORMATION ON TREE PLANTING

Forest land is defined as land under trees with a minimum area of 0.1 hectare and tree crown cover of more than 20% of the total area (or the potential to achieve this cover at maturity). To remain in line with the Amendment of Forestry Act 2014 under Animal Health and Welfare and Forestry (Miscellaneous Provisions Act 2022) which facilitates planting of native trees in areas not less than 0.1 hectare and not greater than 1 hectare without an afforestation licence, the total cumulative area of forest that can be planted on a holding is limited to 1 hectare. This would apply to the combination of all tree planting actions that could be considered forests depending on planting layout and density i.e. Planting trees in riparian buffer zones.

PAYMENT RATE

- Min 5. Max 100 trees

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs.

For more information:

- https://www.teagasc.ie/media/website/crops/forestry/grants/Native-Tree-Area-Scheme.pdf
- https://www.teagasc.ie/crops/forestry/grants/overview-of-forest-establishment-grant-rates/

18. SMALL SCALE WETLAND POND

Ponds and wetlands serve as diverse habitats for plants, insects, birds, mammals, and amphibians, while also acting as natural water filters. They slow water flow, deposit particles, and promote microbial degradation of pollutants in environments with high organic matter. This measure aims to create new wetlands and/or ponds to capture sediment, phosphorus (P), and nitrogen (N) losses along flow pathways to waters.

REQUIREMENTS

1. Small Scale Wetland Ponds must be no greater than 0.2ha in size. If larger than this they will become ineligible features under BISS (Basic Income Support for Sustainability Scheme).

2. An individual small scale wetland pond can be applied for in conjunction with ACRES measures Low Input Grassland, Extensively Grazed Pasture and Management of Intensive Grassland Next to a Watercourse where the reduced ACRES rate is applied for (see below).

3. Ponds and wetlands are most suitable on impermeable soils where infiltration is limited. Where infiltration is insufficient to hold water permanently, consider a willow filter bed instead.

4. Wetlands should be designed to remain permanently wet and allowed to naturally revegetate with native wetland species such as reeds, bulrush, and flag iris (see Appendix 8). Where possible, collect the seed heads of common reed, bulrush, etc., and use them to encourage new growth.

5. Consideration must be given to the proximity and hydrological connectivity to nearby Natura 2000 sites, including the size of existing habitats/wetlands and any archaeological features, before installing small-scale wetland ponds.

6. It should be noted that these small-scale wetland ponds are not the same as constructed wetlands and do not require planning permission or a discharge licence. They are not designed to handle nutrients that must be collected under the GAP regulations, such as silage effluent, soiled water, dairy washings, slurry, etc.

7. Do not locate small-scale wetland ponds in areas of existing ecological benefit or in floodplains.

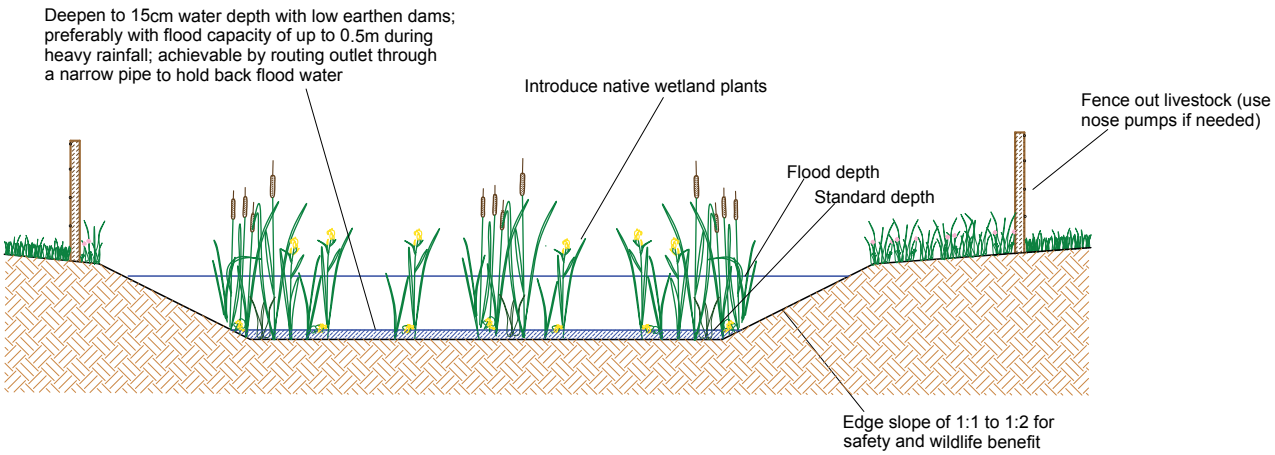
8. Small-scale wetland ponds should be fenced off from livestock, with a gap left for maintenance access. Fencing can also be applied for under Measures 30 and 31.

PAYMENT RATE

- Small scale wetland establishment - €800/unit (ACRES reduced rate €627).
- Example sizing = 10m X 6m X .5m.
- Min 1 and Max 3.

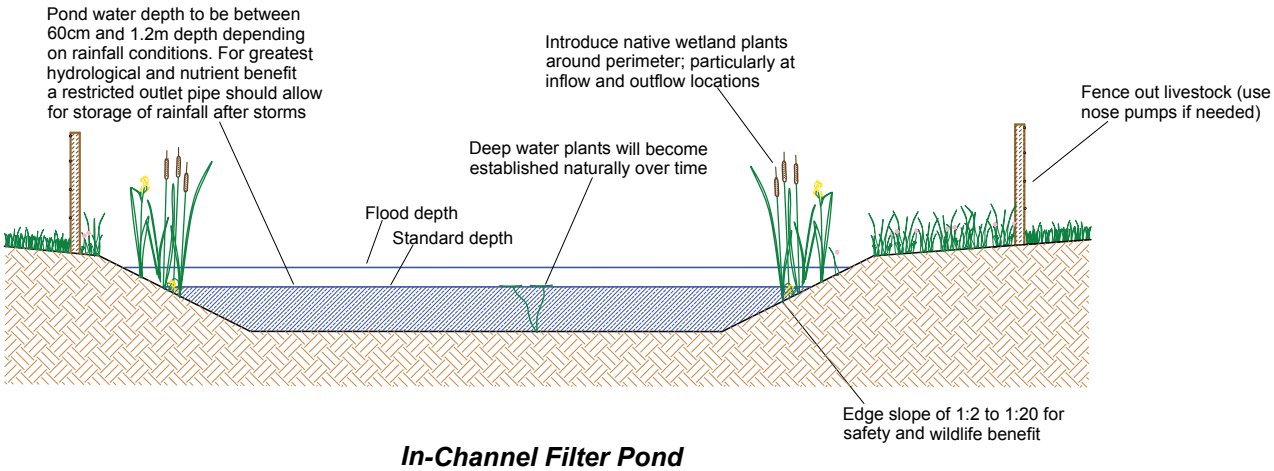
VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs.



In-Channel Filter Wetland

FIGURE 7: IN-CHANNEL FILTER WETLAND



In-Channel Filter Pond

FIGURE 8: IN-CHANNEL FILTER POND

19. EARTHEN BUND

An earthen bund (bank), when properly positioned to intercept overland flow pathways, can temporarily pond field runoff water and sediments, targeting surface runoff or diverting clean rainwater away from farmyards. These features can trap significant amounts of sediment, including valuable topsoil. Unlike more permanent wetlands, earthen bunds have minimal impact on farming productivity, as they drain quickly after a storm.

REQUIREMENTS

1. Earthen Bunds will be paid on a per unit basis (1 unit = 25m long x 0.5m high) & the min length of a unit is 15m
2. Where the applicant is applying for two adjoining units, the minimum required length is 40m (25m plus 15m) to receive payment for both units. This applies similarly for subsequent bunds when they are joined together.
3. To ensure structural integrity, the base of the bund should be 1.2m wide at ground level and 0.5m wide at the crest.
4. Typically, but not mandatory, a pipe is placed through the bund to assist with drainage. The pipe can be raised to allow some water retention for longer periods, which helps more sediment to settle and can increase groundwater recharge.
5. Earthen bunds must be constructed from soil sourced on the farm to prevent the introduction of invasive species.
6. If silt or sediment builds up over time, it may be removed periodically, such as in a tillage scenario.
7. Permission is required before starting any work within or near a protected area, Natura 2000 site, or archaeological site.
8. Check OPW's website https://www.floodinfo.ie/ for more information. This information portal, provides location specific access to flood risk and flood management information.

PAYMENT RATES

- Earthen bund:€300/unit. Min. 1, Max. 5

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs.

20. SWALES

A swale is a linear, mostly dry, vegetated channel laid with a shallow fall on its base. Swales are designed to collect and transfer runoff during rainfall events. The vegetated surface of a swale helps to filter coarse sediments and pollutants from runoff allowing them to settle out and be retained within the swale. A swale will help to slow down the rate of surface water runoff and increases opportunities for infiltration into soils.

REQUIREMENTS

1. Swales are not suitable for steep slopes.
2. Swale design should avoid sharp bends or corners; only gentle, sweeping curves are permitted.
3. The sides of the swale must be gently sloped downwards to facilitate water retention.
4. Check dams to slow the flow of water in the swale are recommended.
5. Swales must be of sufficient design to ensure there is no risk of damage during very high flow periods.
6. See Appendix 11 for further information on swale design.

Swale Gradient %	1	2	3	4	5
Distance between check dams (m)	50	25	16.5	12.5	10

PAYMENT

- €680/unit. Max 3 units
- Min length 20m. Max length 50m.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for.

21. MANAGEMENT OF A CRITICAL SOURCE AREA

Critical source areas are areas that deliver a disproportionally high amount of pollutants compared to other areas of a water body or subcatchment, and represent the areas with the highest risk of impacting a water body. In order to determine where critical source areas are located, we need to determine the hydro(geo)logical susceptibility of the land and also the nutrient loadings applied to that land. This measure is to mitigate against phosphorous losses. The majority of P losses at catchment scale are from critical source areas. These can be identified using the PIP – P maps (ranks 1-3) and/or the EPA modelled flow delivery paths. PIP-P maps consider the P loading at farm scale as well as the hydro(geo)logical susceptibility of the land to overland flow. The EPA modelled flow delivery paths are based on topography (5m resolution) and are only modelled for soils with impaired permeability (e.g. poorly drained minerals and peaty soils).

REQUIREMENTS

Only areas with PIP-P rankings 1-3 and/or flow delivery paths are eligible for this measure unless the advisor provides justification that the proposed area is at high risk for P losses in overland flow (e.g. prone be very wet/saturated ground).

1. This measure cannot be funded on an ACRES area-based action.

2. Tillage Management practices include:
   a. No slurry/fertiliser allowed from 15th September to 15th March inclusive.
   b. No chemical control of weeds allowed at any time. Spot spraying allowed where necessary.
   c. No drainage allowed at any time.
   d. The critical source area should, as agreed between the applicant & ASSAP advisor, be set with grass seed by May 31st using non-inversion techniques (ploughing not permitted). National regeneration of these areas is also allowed but a green cover must be established within 6 weeks.
   e. The seed mix must contain at least 3 grass species, of which Cocksfoot must make up a minimum of 40%. Seed labels and receipts must be kept for the duration of the contract.
   f. Grass mix @ 25-30kgs/ha.
      i. Meadow Fescue (Festuca pratensis),
      ii. Timothy (Phleum pratense),
      iii. Perennial Ryegrass (Lolium perenne),
      iv. Smooth Meadowgrass (Poa pratensis),
      v. Red Fescue (Festuca Rubra),
      vi. Cocksfoot (Dactylis glomerata) @ least 40%.
   g. The mandatory 3m uncultivated margin remains untouched as per GAP regulations.
   h. If used for grazing a max stocking rate of 0.8LU/ha applies during the period 15th September to 15th March inclusive.

3. Grassland Management practices include:
   a. Reduced stocking rate (max 0.8LU/ha) from 15th September to 15th March inclusive.
   b. No slurry/fertiliser should be applied during the period.
   c. No drainage or reseeding allowed at any time.
   d. No chemical control of rushes and other weeds at any time. Spot spraying allowed where necessary.
   e. These requirements may need to be adjusted depending on localised conditions.

4. Funding is available as an annual payment for reducing agricultural activity on these areas during high-risk periods. Annual payment for this measure will be paid once all of the qualifying criteria for the measure have been fulfilled by the applicant and the relevant validation checks satisfied.

5. ASSAP advisor should consider complementary measures in conjunction with this measure where appropriate.

PAYMENT

- €500/ha/yr.
- Min area: 0.2ha. Max of 3ha.

VALIDATION

Annual relevant geotagged photo showing clearly the measure that has been applied for taken between October & March. Participants will be subject to spot checks during the October to March period annually.

23. WATER BARS

Run-off from impermeable surfaces such as farm roadways must be managed to prevent flows into rivers and streams. Retrofitting water bars on existing farm roadways can mitigate runoff pathways by diverting water into areas of higher permeability such as fields and verges or into sediment traps. Cross drains typically sit below the surface of the road whereas water bars/deflectors sit above the surface.

REQUIREMENTS

1. Pencil stone or re-enforced concrete bars direct surface water off the roadway.

2. It is recommended to install water bars in conjunction with Measure 24 Sediment Traps.

3. Water bars cannot direct water directly into surface drains, streams or watercourses.

PAYMENT RATES

- €213/unit
- Min 1. Max 6.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for.

24. SEDIMENT TRAPS

A sediment trap is a shallow basin with a slight slope on its base. It is typically used to intercept runoff from farm roadways travelled by livestock or machinery, allowing sediment or heavier materials to settle before being discharged to grassland, away from watercourses. The size of the sediment trap can vary depending on the estimated volume of runoff from the farm road that needs to be contained for enough time to allow sediment to settle out of suspension.

REQUIREMENTS

1. Site sediment traps in areas where there is a risk of sediment runoff.

2. Siting of sediment traps will need to account for the risk to groundwater. In such cases, keep the base of the sediment trap as high in the ground as possible, while still providing sufficient storage depth to catch and hold water. Any soil used to seal the base of the sediment trap must be sourced from within the farm gate.

3. Works should be undertaken during growing season & during dry weather.

4. As a guideline the sediment trap should be 10-20% of the runoff area. Design and sizing of the sediment traps will be site specific. Suggested dimensions (internal base area) 4m x 10m x 1m deep, with the inlet and outlet at opposite ends to maximise the flow-path through the basin.

5. The outlet from sediment traps cannot be directly connected to the drainage/river network.

6. The soil used from the excavation may be used to create gently sloping banks.

7. On sloping ground the soil excavated from the upper end of the silt trap may be used to build a retaining embankment around the lower end.

8. Maintain sediment traps as required and dispose of material appropriately by land spreading well back from any water courses or drains.

9. Fencing of sediment traps, where required, can be applied for under Measures 30 & 31.

PAYMENT

- €120/unit/yr.
- Min 1. Max 6.

VALIDATION

Annual relevant geotagged photo showing clearly the measure that has been applied for.

25. CULVERTS

The movement of animals, people and vehicles across drains damages banks and aquatic vegetation. This increases the risk of soil particles and plant nutrients entering the drain and the potential for these materials to be transported to a stream or river. Defecation from animals also increases pathogen loading in rivers, which is particularly important for the quality of our bathing and drinking waters. The use of culverts are for field drains only i.e. those not identified as a blue line on the OSI 1:5000 maps. It is the responsibility of the farmer to ensure that all relevant legal requirements are adhered to & relevant authorities consulted prior to any works being carried out.

REQUIREMENTS

1. Select a suitable drain i.e. one that does not have a gravel bed.

2. Select a suitable location within the drain to avoid any overland flow pathways or CSAs.

3. Ensure crossing design does not impede high flows (consider storm events). Culverts are suitable for the safe passage of livestock/vehicles across land drains in small catchments and gentle slopes.

4. A box culvert is preferable to a piped culvert.

5. The movement of livestock should be controlled, as the culvert could become a choke point where frequent passage of animals leads to poaching near the drain.

6. Works should be carried out during the July to September time period.

7. IFI should be contacted regarding design and works methodology would need to be agreed between the relevant contractor and the relevant Fisheries Environmental Officer in advance of the works. See guidance manuals at this link https://www.fisheriesireland.ie/sites/default/files/migrated/docman/2016/Guidelines%20Report%202016.pdf).

PAYMENT

- €800 per unit.
- Min 1. Max 5 units.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs and all required relevant permissions.

26. WATERCOURSE CROSSING/BRIDGES

River crossings by animals and farm vehicles can introduce sediment and pollutants into the river, especially when the crossing is part of a farm roadway. Replacing such crossings with a properly designed bridge can positively impact the river. The bridge should be fit for its intended purpose and constructed with materials that will not cause pollution (e.g., timber, pre-cast concrete, steel). It should also be appropriately sized for its use, such as for cattle or quad crossings. Clear-span bridges are preferred, as they eliminate the potential for interference with the riverbed.

REQUIREMENTS

1. It is the responsibility of the farmer to ensure that all relevant legal requirements are adhered to & relevant authorities are consulted with prior to any works being carried out.

2. Planning permission and an appropriate assessment may be required for this measure. Please contact your local authority to ascertain what permissions are required.

3. Select a suitable location on the watercourse to avoid any overland flow pathways or critical source areas (CSAs).

4. Ensure bridge does not impede high flows (consider storm events).

5. IFI must be contacted re design and works methodology

PAYMENT RATE

- 50% of cost of bridge installation up to a max of €5000 per applicant.
- Max 1.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs and all required relevant permissions.

FIGURE 9: THE PROJECT CAN PROVIDE FUNDING TOWARDS THE COST OF BRIDGE PLANNING, DESIGN AND INSTALLATION.

27. GATEWAY MEASURES

Gateways located close to rivers or streams can deliver sediment and pollutants to the river, particularly frequently used gateways. Redesigning the paddock and relocating the gateway can have a positive impact on water quality.

REQUIREMENTS

1. Identify suitable location for relocated gate.

2. Permanently close up old gateway.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs.

PAYMENT RATES

Measures 27A & 27B can be applied for individually or applicants can apply for both measures combined where it is required. Applicants can apply for a minimum of 1 gateway up to a maximum of 4 gateways to be relocated (i.e. Max of €720 x 4 can be claimed by an applicant).

27A	Gateway Remediation (closing of gap) & Relocation	€360
27B	New Gateway (per gateway, includes gate & posts)	€360

Measure 27C is available for an existing gateway that is contributing to nutrient or sediment loss to the drainage network. This measure cannot be applied for in conjunction with 27A and 27B.

27C	Gateway Resurface	€118

FIGURE 10: RELOCATING THE GATEWAY CAN HAVE A POSITIVE IMPACT ON WATER QUALITY.

28. WILLOW FILTER BED

Willow filter beds are areas of densely planted willow trees. They help to slow the flow of water, allow sediment to settle out and any traces of dissolved nutrients to be taken up by growing vegetation. They act as a filter and allow for polishing of water from farm roadways and clean concreted yard areas.

All farms must adhere to the most current Nitrates Regulations regarding storage of silage effluent, dairy washings, slurry and farmyard manure. This measure is not to address any issues that are currently a GAP regulation requirement.

REQUIREMENTS

1. Willow filter beds are a suitable measure for free draining soils, where small scale wetland ponds may not be so effective due to the high infiltration rates; however willow filter beds may be used in any circumstances where there is sufficient soil depth to get them established.

2. Willow filter beds are not suitable for streams or other permanent watercourses or drains with a gravel bed.

3. Willow filter beds can be sited in existing man-made farm drains that do not support or have the capacity to support fish life. If in any doubt contact IFI for clarification.

4. Willow filter beds can also be sited on green field sites. Ensure sufficient soil depth to establish willow cuttings and always consider suitability of location in terms of vulnerable aquifers, proximity to karst areas, proximity to waterways and tall hedgerows; soil type, percolation rate and depth; topography of the land and other similar factors.

5. The size of the willow filter bed should allow an internal effective area of ≥10% of the runoff area, whether from farm roads or clean yard areas.

6. Where possible, the willow filter bed should be long and thin but where more width is available or where awkward corners are being used, the shape may be amended. In these circumstances increase the size to 15% of the runoff area if possible, to compensate for reduced evapotranspiration effectiveness.

7. A wetland planted silt trap (10m x 4-8m wide) for fines should be installed, where appropriate, at the head of the willow bed, to protect the willow bed from silt accumulation over time. This includes a sump/scrape at the head of the wetland planted silt trap.

8. Any build-up of sediment in the initial planted silt trap should be removed periodically and as required to avoid the willow bed becoming a source of nutrients rather than a sink.

9. Site gradient must be considered in terms of the required number of bunds and the required number of willow filter beds. On sloping sites, place bunds at intervals to enable a series of basins (each level within their own bunded area) to be built with minimum of earth movement.

10. Bund height of 0.5m but may be up to 1m in certain scenarios. The higher bund will allow for more storage of water.

11. Ensure bunds are well compacted and allowed to vegetate.

12. Ensure that the bed of the basins used are level and that the embankments are not less than 300mm high around the perimeter of each basin.

13. Ensure water flowing through the willow bed is dispersed evenly and not making a single path through the willow bed. During storm events the water should sit to a depth of 10-30cm across the entire bed, and then draw down afterwards to soil level.

14. Densely plant the willow filter bed with native Sallix species.

15. Plants must be of Irish Origin or Irish Provenance and purchased from DAFM registered professional operators. All plants must have accompanying plant passports.

16. Plant 6 rows of willows at 0.8m – 1m (80-100cm) spacing between rows and 0.5m (50cm) spacing within each row.

17. 2400 willow cuttings required for an area 4-8m x 200m. 1200 willow cuttings required for an area 4-8m x 100m.

18. The willow trees should be coppiced on a 3-5yr rotational basis, depending on inflow, to ensure active growth and uptake of any potential traces of nutrients. Use a circular saw or chainsaw for coppicing & remove cuttings. Cut willow may be chipped for use on the farm, cut for firewood if large enough and dried for 2 years before use, or piled up as a wildlife haven at a distance of ≥10m from the willow bed or any waterway.

19. For health and safety reasons, it is recommended to fence off the area using Measure 30, etc.

20. Please note that minor adjustments may be required during installation, depending on specific site conditions.

21. Permission required prior to any work if within or close to any protected area, Natura 2000 site or archaeological site.

22. Please note, site location could impact the effectiveness of the willow filter bed measure. The department guidance S133 provides some details on Site Restrictions at https://assets.gov.ie/95195/3f86e4a7-9a32-462c-8d46-9ab5298fa34c.pdf.

23. For further details, please see Appendix 10.

PAYMENT RATE

- Min 30m up to a max of 200m
- €34/m
- Applicant must apply for fencing of the Willow Filter Bed separately through Measure 30 etc.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs (receipts/invoices).

29. FARMYARD SETTLEMENT TANK

As farms have expanded over the last number of years, so too has the area of concreted yards within farmyards. Capturing water and allowing sediment to settle in a two-chamber settlement tank will help filter and polish the water before it flows into the drainage network.

REQUIREMENTS

1. Install a 2-chamber settlement tank (see diagram below) to collect run-off from clean unsoiled areas. The tank below is 3.5m x 2.5m x 2.2m (internal dimensions, taking into account freeboard).

2. The outlet of the settlement tank should ideally discharge into a nature-based solution, such as a willow bed (see Measure 28), to further polish water coming from farmyards, especially those with large areas of concrete. If an alternative to a nature-based solution is proposed, justification must be submitted by the advisor submitting the proposal.

3. The outlet of the 2-chamber settlement tank must not go directly into a waterbody (drain, stream, river, pond, lake, swallow hole etc.).

4. All farms must adhere to the most current Nitrates Regulations, specifically the European Union (Good Agricultural Practice for the Protection of Waters) Regulations, as amended, regarding the storage of silage effluent, dairy washings, slurry, soiled water, and farmyard manure (see below).

    a. In these Regulations "soiled water" includes, subject to this sub-article, water from concreted areas, hard standing areas, holding areas for livestock and other farmyard areas where such water is contaminated by contact with any of the following substances:

        i. livestock faeces or urine or silage effluent,

        ii. chemical fertilisers,

        iii. washings such as vegetable washings, milking parlour washings or washings from mushroom houses,

        iv. water used in washing farm equipment.

    b. In these Regulations, "soiled water" does not include any liquid where such liquid has either—

        i. a biochemical oxygen demand exceeding 2,500mg per litre, or

        ii. a dry matter content exceeding 1% (10 g/L).

5. This measure is not to address any issues that are currently a GAP regulation requirement.

6. Tank design should consider the potential for pipe blockages, as well as the ease of clearing/cleaning them.

7. The farmer must make every effort to keep yards reasonably clean and take care to prevent the entry of excessive debris (such as leaves) into the settlement tank.

8. Regular emptying (every 3-6 months or more frequently) and supervision will facilitate the efficient operation of settlement tanks.

9. The applicant is required to ensure compliance with all planning permission requirements. Additionally, the lid must be removable for maintenance purposes.

10. All tanks must be constructed in line with DAFM specifications (S123).

PAYMENT

- 100% of the cost up to €6500 (ex VAT).
- Min 1. Max 1 per farm.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs.

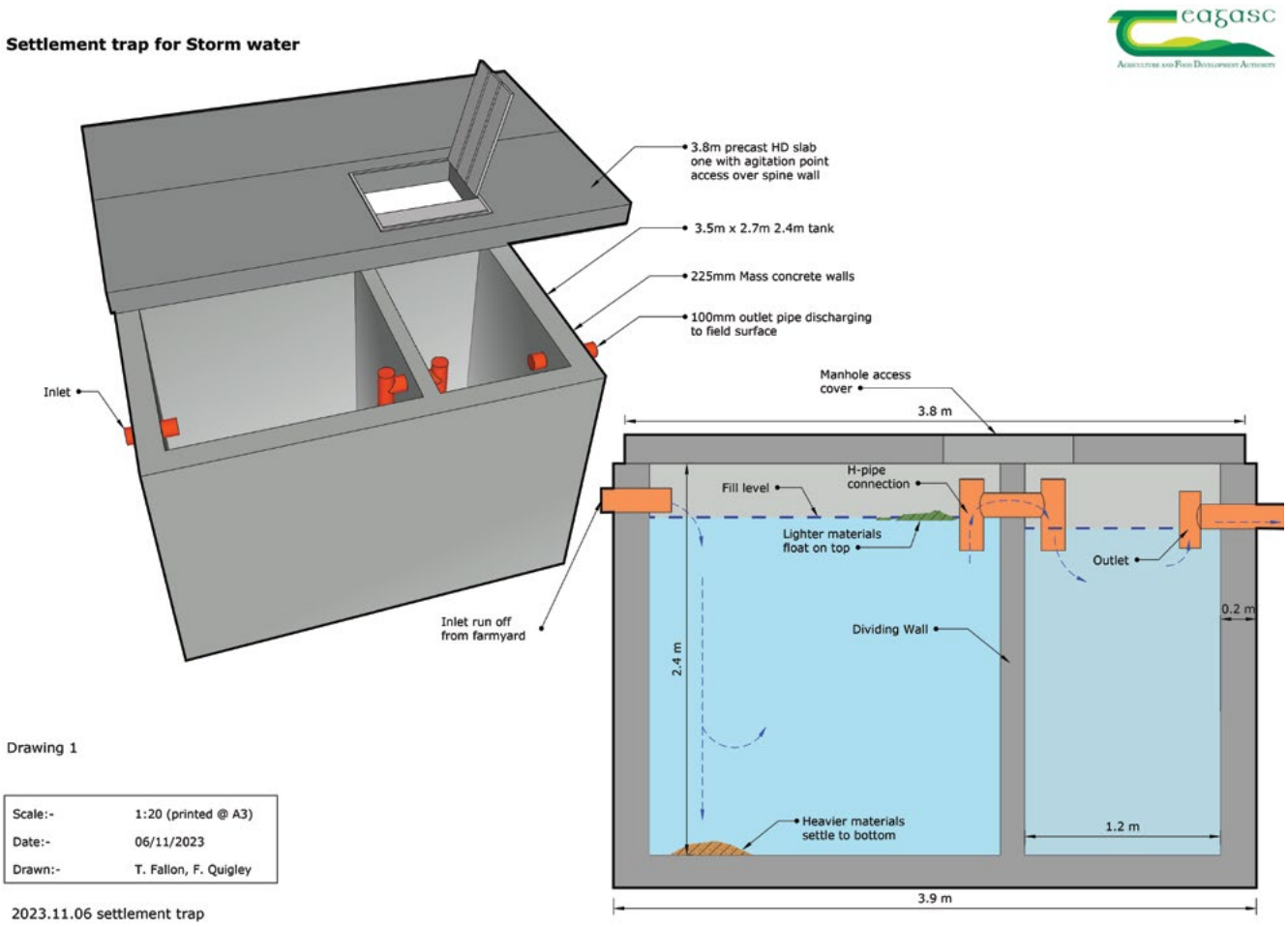


FIGURE 11: USING A TWO CHAMBER SETTLEMENT TANK TO POLISH THE WATER CAPTURED IS A VITAL COMPONENT IN ENSURING BETTER WATER QUALITY.

RECEPTOR MEASURES

FARMING for WATER
Water European Innovation Partnership - AGRI

RECEPTOR MEASURES:

30. 31. 32: BOVINE, OVINE EXCLUSION FROM WATERBODIES

Fence off water bodies (such as rivers, streams, drains, ponds, and lakes) to prevent access by bovine and ovine livestock. This will help reduce the impacts of nutrient and sediment enrichment, as well as prevent bank destabilisation. This measure should only be recommended when it is expected to provide a significant benefit to water quality.

REQUIREMENTS

1. Erect a permanent fence 1.5m from the top of the bank of any surface water (rivers, streams, drains, ponds, lakes, etc.). Measure from the top of the riverbank, even if the bank is sloped, and not from the highest waterline.

2. Ensure that there is no risk of double funding with TAMS.

3. The fence must be fit for purpose. It is required to follow the DAFM Minimum specification for Farm Fencing S148 & Accepted Fencing Post Suppliers Specification S148A (equivalent to TAMS requirement).

4. Cutting of hedgerow vegetation inside the fence line is permitted but cannot take place between the 1st of March and the 31st of August each year. Consider leaving a gap to allow access for maintenance. Strimming of grass beneath wires is permitted as needed throughout the year.

5. Extensive removal of existing vegetation to facilitate fencing is contrary to the objective of this measure and therefore cannot be allowed within the EIP

6. Livestock are not permitted inside the fence line. The battery can also power secondary devices, such as an electric fence, meaning you do not need to apply for a separate solar-powered electric fencer with this measure.

7. All fencing must be carried out in compliance with all relevant legal obligations. Fencing of commonage land or previously unclosed areas is not permitted.

8. **PAYMENT**
   - M30: Bovine exclusion from waterbodies – fencing, single strand electric fencing: €2.77/m.
   - M31: Ovine exclusion from waterbodies – fencing, sheep mesh and 1 strand of wire: €6.75/m. The lowest line of the sheep wire mesh must be 100mm above ground level to allow adequate clearance for wildlife.
   - M32: Ovine exclusion from waterbodies (mountain rate) – fencing, sheep mesh and 1 strand of wire: €8.81/m. The lowest line of the sheep wire mesh must be 100mm above ground level to allow adequate clearance for wildlife.
   - Cumulative meters of fencing paid is 1000m and can be made up of any combination of M30, M31 & M32 e.g.: 500m of M30 plus 500m of M31. Min of 5m required. Max of 1000m.
   - Applicants cannot apply for Measures 30, 31 & 32 and Linear Riparian Buffer Zones Measures 15 & 16 on the same section i.e. fencing cost is already included in the Linear Riparian Buffer Zone costing.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs. No proof of costs are required under 10m.

33. SOLAR POWERED ELECTRIC FENCER

If a mains-powered electric fence supply is unavailable, farmers may apply to the Water EIP for a solar-powered electric fencer. These provide a flexible and cost-effective solution for powering long sections of electric fencing. To be eligible for payment, applications must be made in conjunction with Measure 30 (Bovine Exclusion from Waterbodies), Measure 31 (Ovine Exclusion from Waterbodies), Measure 14 (Spatially Targeted Riparian Buffer Zone), or Measure 15 (Linear Riparian Buffer Zone Grassland).

REQUIREMENTS

1. The size of the solar powered electric fencer should be based on the length of fence to be electrified.
2. Ensure that there is no risk of double funding with TAMS.
3. To ensure adequate operation they should not be placed in the shade.
4. They can be put into storage when not in use.
5. Funding for two solar electric fencers will only be provided where there is a clear need for a second unit, such as when it is not possible to connect the electrified fence to the second location.

PAYMENT

- Applicant will receive up to €634 for a solar powered electric fencer. Min. 1, Max 2.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs.

34. 35. 36. 37: ALTERNATIVE WATER SUPPLY (M34 & M35), WATER TROUGHS (M36), PIPING AND FITTINGS (M37)

Pasture pumps and solar powered pumps with water troughs are a sustainable way to provide drinking water to livestock. Implementing this measure on farms will prevent livestock access to river channels thereby preventing damage to channel banks, reduce hydromorphological impacts and help to improve water quality. This measure is only applicable to those with a Grassland Stocking Rate <170kgs/ha.

REQUIREMENTS

1. To be eligible to apply for this measure there must be a clear requirement to provide an alternative drinking water supply source to livestock.

2. Ensure that there is no risk of double funding with TAMS.

3. Measures 34, 35, 36 & 37 can only be applied for in conjunction with measures M15, M30, M31, M32 or where a drinking point has been closed to exclude livestock for drinking purposes.

4. All pasture pumps & water troughs must be located at least 20m from surface waters (includes open drains).

5. Pasture pumps, solar powered pumps & water troughs cannot be located within 40m of archaeological structures.

6. Troughs should be located away from wet or waterlogged ground which is easily poached or eroded.

7. Drinking troughs are not to be located within sensitive habitats.

8. Water troughs, solar pumps and pasture pumps must be fixed in situ where applicable, fully functional, and connected to a piped supply or an adequate rainwater harvesting system prior to payment being issued by the project team. If the equipment is at risk from flooding, the farmer must take appropriate measures to prevent damage.

9. Solar pumps cannot be used if they result in an increased rate of water extraction from a water supply e.g. stream / river beyond the current extraction rate.

10. If more than one pasture pump, solar pump, or water trough is being applied for, funding will only be provided where there is a clear need for the additional equipment. This may include situations where it is not possible to provide sufficient water to livestock or where connecting a supply to a second location is not feasible.

11. Where multiple solar pumps are required across different holdings in close proximity, the advisor should work to facilitate farmers in coming together to install the minimum number of pumps needed to service the area effectively. This approach aims to optimise resources and reduce unnecessary duplication of equipment.

12. The intake pipe from the stream should have a protective filter/gauze to prevent blockage of pasture pumps.

13. Measure 37 is to help cover the cost of piping and fittings to farmers and should match what has been applied for in Measures 34 and 35..

PAYMENT

- M34: Alternative water supply – Pasture pump: up to €400/unit; min. 1, max. 4
- M35: Alternative water supply – Solar pump: €2,500/unit; min. 1, max. 2
- M36: Alternative water supply – water trough: up to €300/unit; min. 1, max. 5
- M37: Alternative water supply – piping and fittings: €150/unit: min 1 max: correspond with what is applied for in M34 & M35 only.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs.

Relevant geotagged photos of the closed off drinking points/ animal access points must be submitted.

38. VEGETATED BUNDED DRAIN

Ditches and drains serve as significant pathways for the transport of water and associated nutrients and sediments from fields to receiving watercourses. There are opportunities to attenuate nutrients and sediment along this pathway by slowing the flow, enhancing sediment deposition and promoting plant uptake of nutrients within the ditch or drain. Vegetated Bunded Drains help maximise the retention of sediments and nutrients, while also creating opportunities for water infiltration into the soil.

REQUIREMENTS

1. Vegetated bunded drains are not suitable for streams, permanent watercourses, or drains with a gravel bed, as these are considered by to have potential for supporting macroinvertebrates and fish life.

2. IFI should be contacted regarding design & works methodology would need to be agreed between the relevant contractor and the relevant Fisheries Environmental Officer. https://www.fisheriesireland.ie/sites/default/files/migrated/docman/2016/Guidelines%20Report%202016.pdf

3. This measure is not suitable in hilly areas where there is a high risk of flash flooding or for drains with high flow volumes.

4. A suitable ditch or drain, dry or wet must have a slope of less than 5%.

5. This measure is not suitable in free-draining areas unless the floor is sealed with impermeable clay.

6. The ideal time to carry out work on farm drains is between July and September. This timing helps minimise soil damage, sediment loss, and disturbance to wildlife. Additionally, it is important to consider bird nesting season restrictions during this period to ensure compliance with environmental guidelines.

7. A sediment plug, such as a bale of straw or rushes, should be placed downstream of the works during the construction phase. This helps capture any sediment that becomes mobilised during the work, preventing it from entering nearby water sources and minimising sediment pollution.

8. Where suitable excavate material from the base of the drain to create a sump within the drain approx. 60cm (2ft) deep. Use this material to create a bund downslope from the sump. Where no sump is created the earth used to create the bund must be sourced from within the farm gate. If possible, the bund should be at least 90cm (3ft) wide. Ideally, widen the channel just up-slope from the bund to at least twice the original width. The slope of the bank should be re-profiled if the bank is steep.

9. The bunds cannot be used as a crossing point for livestock or machinery.

10. The number of bunds required will be site specific. The distance between bunds is dependent on the slope of the drain.

11. Introduce native wetland plants (Appendix 8) from elsewhere on the farm or from a specialist supplier. Plant these at the waterline.

12. Removal of sediment & associated P should take place as necessary. Ongoing management is required to avoid these areas becoming sources of nutrients rather than sinks.

13. Permissions may be required prior to any work if within or close to any protected area, Natura 2000 site or archaeological site.

PAYMENT

- €1000 per vegetated bunded drain. Min 1. Max of 3 per farm.
- Min length: 20m. Max length: 50m.

VALIDATION

Relevant geotagged photo showing clearly the measure that has been applied for & proof of costs.

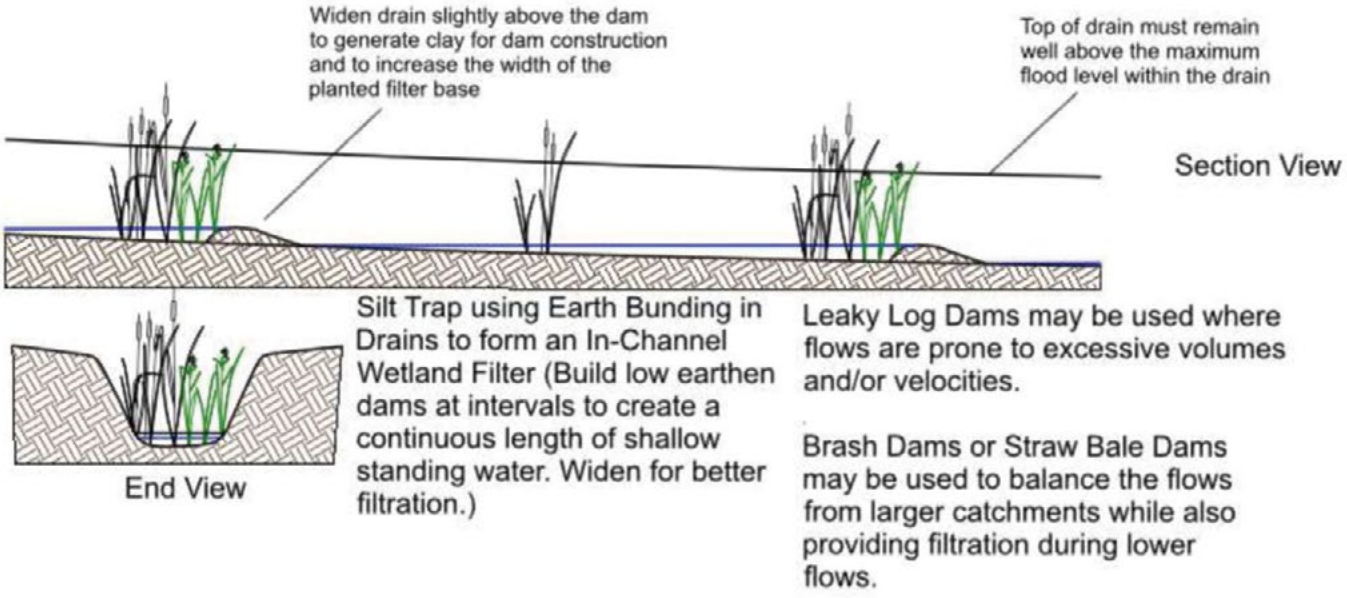


FIGURE 12: IN-CHANNEL FILTER BUFFERS FOR SILT SETTLEMENT IN FARM DRAINS.

OTHER MEASURES

FARMING for WATER
Water European Innovation Partnership - AGRI

OTHER MEASURES:

39. HOST FARMER PAYMENT

To facilitate outdoor farmer training courses, advisors will need to identify suitable farms to host the events. These farms will be approved by the EIP Project team, and a host farmer application form must be submitted. The selected farms will serve as demonstration sites for various mitigation measures, helping to disseminate knowledge to other FFW EIP participants.

PAYMENT

A farmer that hosts a FFW EIP course or event will be paid €180 for the use of his/her premises for the course or the event. Host farmers can receive this payment up to a max of 5 times during the lifetime of the EIP. If the opportunity arises to collaborate with a local Signpost Farmer, it should be taken advantage of.

VALIDATION

Submission of FFW EIP Course/Event Host Farm form signed by the organising ASSAP advisor and farmer.

40. CONTRACTOR MOBILISATION FEE - EXCAVATOR

This is a fee payable to facilitate the use of an excavator on a farm for putting in place the following measures:

1. M13 (Hedgerow Establishment
2. M18 (Small Scale Wetland Pond)
3. M19 (Earthen Bund)
4. M20 (Swale)
5. M23 (Water Bars)
6. M24 (Sediment Traps)
7. M25 (Culverts)
8. M26 (Watercourse Crossing/Bridges)
9. M27 (Gateway Measures)
10. M28 (Willow Filter Beds)
11. M29 (Farmyard Settlement Tank)
12. M38 (Vegetated Bunded Drain)

The fee, a one-time payment of €200, covers the cost of transporting the excavator to the farm.

41. BESPOKE MEASURES

Bespoke Measures must be identified as part of the Rainwater Management Plan to be considered for funding by the Project Team. Any measures identified that do not form part of the core measures must provide a water quality benefit to the catchment. Farmers can apply for funding for Bespoke Measures on a case-by-case basis. To receive funding the measure must demonstrate that:

- It will provide a water quality benefit within the particular catchment area.
- Have detailed costings of the proposed measure.
- Provide guideline specifications as to how the measure will be installed & implemented.
- Proof of compliance with legal obligations.
- To be agreed where necessary, by the farmers own advisor /consultant.

Examples of Bespoke Measures include:

1. The FFW EIP project will consider other measures that the farmer and advisor deem suitable.

2. Batch footbaths. These are roofed footbaths that retain mineral solutions for foot-bathing sheep to prevent foot rot. They will reduce run-off of foot-bathing solution.

3. In certain cases, payment of a contractor can be reviewed to carry out weed wiping in a drinking water protected area, s to ensure no contamination of the water supply.

42. FARMYARD BUCKET AND BRUSH

Using a farmyard bucket and brush is a labour-efficient method for keeping clean yards within the farmyard complex tidy. This helps reduce the potential for contamination of clean water exiting through the clean water outlet.

REQUIREMENTS

1. Applicants can apply to the EIP for 1 farmyard bucket & brush.
2. The bucket and brush measure must be purchased new and cannot be second-hand.
3. For this mitigation measure to be successful, the bucket and brush must be used on a regular basis to maintain the farmyard clean and tidy.
4. There must be clear justification for the applicant to be successful to secure this funding.
5. Yards that are poorly managed and require more fundamental work will not be considered.
6. EIP team will require evidence to support the claim.

PAYMENT

- 50% of the cost up to a max funding of €2000 (ex VAT).

VALIDATION

Proof of costs.

43. SLURRY TESTING

Knowing the nutrient content of the slurry and soiled water in the various tanks on the farm is crucial for both the economic and environmental sustainability of the farm. This information enables more targeted nutrient application, in line with a tailored Nutrient Management Plan, and may help reduce the need for inorganic fertilisers.

REQUIREMENTS

1. Applicants can apply for a max of 4 slurry samples @ €70/sample.
2. Sample each tank separately to get individualised results.
3. Incorporate the results of the slurry testing into the NMP for the farm which will allow for more accurate application of nutrients based on the nutrient content of the relevant slurry tank.
4. Collecting yard tanks and soiled water tanks can be tested as part of this measure.
5. This measure is open to all farmers (not just dairy farmers).

PAYMENT

- Applicants can apply for a max of 4 samples @ €70/sample.

VALIDATION

Submission of slurry testing report.

More information available at: https://www.teagasc.ie/news--events/daily/environment/get-your-slurry-analysed-for-nutrient-content.php

APPENDICES

APPENDIX 1:

ANNUAL CATCH CROP DECLARATION FORM

Applicant Name: _____

Applicant Herd Number: _____

I am applying to the Farming for FFW EIP for:
Measure 6A Catch Crop (Other Cropping Systems) ha____
Insert relevant reference coordinates & LPIS details below:

_____

_____

_____

Measure 6B Catch Crop (Winter Cropping Systems) _____ha
Insert relevant reference coordinates & LPIS details below:

_____

_____

_____

Please tick the relevant year that this form applies to below.

2024 ☐

2025 ☐

2026 ☐

2027 ☐

I will establish and grow the Catch Crop in line with the Farming for FFW EIP Booklet of Measures. I have included a map outlining the areas sown as detailed above. Please note that funding under the Farming for FFW EIP cannot overlap with any other relevant DAFM funded scheme.

Signature: _____

Date: _____

APPENDIX 2:

LIST OF PRESCRIBED CATCH CROP SPECIES

Catch Crop Species	Monoculture Seed Rate (Kg/Ha)
Buckwheat	50kgs
Crimson Clover	15kgs
Berseem Clover	15kgs
Balansa Clover	15kgs
Squarrosa Clover	15kgs
Forage/Fodder Rape	8kgs
Mustard (White)	15kgs
Mustard (Brown)	7kgs
Oats	100kgs
Black Oats	60kgs
Phacelia	8kgs
Sunflower	20kgs
Rye	150kgs
Tillage Radish	10kgs
Vetch	30kgs
Leafy Turnip	8kgs
Peas	80kgs
Beans	140kgs
Linseed	30kgs
Red Clover	20kgs
Fodder Radish	10kgs
Kale/Rape Hybrid	8kgs

APPENDIX 3:

LIST OF APPROVED NATIVE TREE SPECIES FOR RIPARIAN BUFFER PLANTING:

Alder (Alnus glutinosa)
Goats Willow (Salix caprea)
Grey Willow (Salix cinerea)
Bay Willow (Salix pentandr)
Downy Birch (Betula pubescens)
Pedunculate Oak (Quercus robur)
Hazel (Corylus avellana)
Holly (Ilex aquifolium)
Aspen (Populus tremula)

APPENDIX 4:

TREE PLANTING & CLEARANCE DISTANCE FROM OVERHEAD WIRES.

Power line type	Clearance distance (from centre of line)
Low voltage (230/400V)	5 m
10 kV and 38 kV	10 m
110 kV	31 m
220 Kv	34 m
400 Kv	37 m

Note: All trees must be outside their falling distance from line support structures.

APPENDIX 5:

TREE SELECTION DEPENDING ON SOIL TYPE FROM THE FORESTRY STANDARDS MANUAL NOV 2023

- Scenario 1: Podzols (Oak-Birch-Holly Woodland)
- Scenario 2: Brown Podzolics (Oak-Birch-Holly with Hazel Woodland)
- Scenario 3: Brown Earths (Oak-Ash-Hazel Woodland)
- Scenario 4: Gleys (Alder-Oak-Ash Woodland)
- Scenario 5: Highly Modified Peat & Peaty Podzols (Pioneer Birch Woodland)
- Scenario 6: Alluvial Floodplains (Alluvial Woodland)

APPENDIX 6:

LIST OF APPROVED NATIVE HEDGEROW SPECIES:

Hawthorn/Whitethorn (Crataegus monogyna)
Blackthorn (Prunus spinosa)
Dog Rose (Rosa canina)
Guelder Rose (Viburnum opulus)
Holly (Ilex aquifolium)
Hazel (Corylus avellana)
Alder Buckthorn (Frangula alnus)
Spindle (Euonymous europaeus)
Elder (Sambucus nigra)

APPENDIX 7:

LIST OF APPROVED TREE SPECIES WITHIN A NEW HEDGEROW:

Bird Cherry (Prunus padus)
Crab Apple (Malus sylvestris)
Goat Willow (Salix caprea)
Grey Willow (Salix cinerea)
Rowan (Sorbus aucuparia)
Wild Cherry (Prunus avium)
Hawthorn/Whitethorn (Crataegus monogyna)
Irish Whitebeam (Sorbis Hibernia)
Sessile oak (Quercus petraea)
Pedunculate oak (Quercus robur)
Holly (Ilex aquifolium)

APPENDIX 8:

LIST OF WETLAND PLANTS FOR MEASURE 18 (SMALL SCALE WETLAND POND) & MEASURE 38 (VEGETATED BUNDED DRAINS).

Taller Wetland Plants
Bulrush (typha latifolia)
Yellow Flag (Iris pseudacorus)
Blanched Burr Reed (Sparganium erectum)
Red Sweet Grass (GItceria maxima)
Reed Canary Grass (Phalaris grundinacea)
Greater Pond Sedge (Carex riparia)

Lower Growing Species
Fools Cress (Apium nodiflorum)
Water cress (Nasturtium officinale)
Water mint (Mentha aquatica)
Water mint (Mentha aquatica)
Brooklime (Veronica beccabunga)
Brooklime (Veronica beccabunga)

For any location where these are required, have one tall species as a minimum, and ideally several tall species and also a selection of the lower growing species. Ideally harvest from within the farm or within a closer radius from existing farm drains or wetland areas (but outside of an SAC or SPA). Alternatively obtain from a specialist supplier of native Irish wetland plants.

APPENDIX 9:

ANNUAL NITROGEN SURPLUS CONSULTATION DECLARATION FORM

Applicant Name: _____

Applicant Herd Number: _____

I confirm that I have completed a Nitrogen Surplus calculation for (please tick the relevant year that this form applies to below). The nitrogen surplus number for this year is _____ (See Ag Nav print out attached).

2024 ☐ 2025 ☐ 2026 ☐ 2027 ☐

I confirm that I have discussed with my advisor measure(s) that can be undertaken to reduce the nitrogen surplus per hectare figure and agree to apply the measure(s) for the coming year.

Brief summary of discussion:

Farmer Signature: _____

Date: _____

Advisor Signature: _____

Date: _____

APPENDIX 10:

WILLOW FILTER BED

Willow Filter Beds for clean yard runoff, roof surfaces & farm roads.

DESIGN SIZING AND LAYOUT

1. Size at ≥10% of the total contributory catchment area.
2. Select an area down-gradient of the farmyard/road for gravity flow.
3. Ideally keep the system width to between 4 and 8m wide; but this may be flexible if there is an awkward corner that lends itself to use as a filter bed.
4. Place a wetland planted silt trap before the willow bed for suspended solids retention, sized at approximately 10-20% of the willow bed size.
5. Keep the ground level within each basin level, left to right and inlet to outlet.
6. Plan to build and plant the system between February and April, so that willow planting can commence immediately upon completion.

CONSTRUCTION NOTES

1. Remove topsoil scraw (plants and roots) and set to one side for reuse in the base of the willow filter. Remove remaining topsoil and set to one side for reuse in the basin.
2. Mould the subsoil to the required layout. Allow for a maximum drop of 1m between basins; and use internal bund walls to divide the area available into separate basins where gradients require it.
3. Track back and forth over moist clay for all made ground. This is more effective than simply compacting with the bucket of the digger. It is important that all water remains in the willow basin until it reaches the final outlet point and does not spill out over the field or other area.
4. Dig out the willow filter basin to a depth of 50cm (or up to 1.5m where deep clays or peats are present to protect ground water).
5. Replace top scraw (upper area of topsoil) into the base of the willow filter. Replace loose subsoil over this. Finally replace the weed-free topsoil across the upper level of the willow basin.
6. Let outlet pipes horizontal to allow free flow of water through the basins. This may be raised only after the willows have become well established - either in April of year 2, or earlier if needed to hold a bit more moisture during a dry summer in year 1.
7. Keep the willows weed-free in years 1 and 2. Thereafter the willow growth will keep weeds down. Do not use herbicides, which can be readily absorbed by the willow stems even in winter, killing your willows.

PLANTING AND COPPICING NOTES FOR WILLOW FILTER

1. Lower any hedge lines within 5m of the willow filter to maximise the exposure to light and wind to maximise evapotranspiration and effluent uptake. Keep maintained on an ongoing basis.

2. Willow trees are to be coppiced on a 3-yr rotation basis as set out below:

3. 1st February after planting: cut back all trees to 150mm above bed level to encourage stem development.

4. 2nd February after planting: leave all willows uncut.

5. 3rd February after planting: cut back all three rows on one side of the filter area to 100mm above the previous cut.

6. 4th February after planting: cut back all three rows on the other side of the filter area to 100mm above the previous cut.

7. 5th February after planting: leave all willows uncut.

8. 6th February after planning: Repeat cycle from 3rd year.

9. Coppicing may be carried out with a loppers or brush cutter or tractor mounted hedge cutter.
   Remove cut trees from the area and store away from drains to prevent re-entry of nutrients into watercourses.
   Timber may be chipped or logged for fuel, used as a wildlife habitat log-pile, or for landscaping.

10. Note that if firewood is desired, leave cuttings to grow for 5 years rather than 3,
    and allow cut lengths to dry for 2 years prior to logging for firewood.

PLANTING NOTES FOR WETLAND PLANTED SILT TRAP

1. Planting should be carried out in the spring, prior to or approaching the growing season; and usual plant care adhered to.

2. The wetland area(s) should be planted with large groups of single species of tall emergent species to prevent the dominant species covering the whole area. Plant species listed are indicative and may be amended within certain limits.

3. The main tall plants should be planted at c.0.7m spacing (2 plants/m2). Seeding may also be used but will take longer to become established.

4. Ensure that trees (other than willows in the willow filter or smaller hedgerow trees) are not less than 4m from the silt trap to protect the integrity of the clay lined base. Weed out tree seedlings if found.

5. Water should be kept just below marsh soil level until plants are firmly rooted and growing well, to prevent them floating away. A few weeks of growing season growth should be sufficient for rooted plants. Longer will be needed for seeded areas.

6. The water levels should be sufficient to keep the marsh soil moist. If the system is showing signs of drying out, water well, with the outlet flow control pipe raised up to enough hold water at base level.

7. For the first full year, keep water level at ≤10cm depth. In May of year 2, levels may be raised to 20cm operating depth.

RECOMMENDED PLANTS FOR WETLAND PLANTED SILT TRAP:

Iris pseudacorus - yellow flag

Mentha aquatica - water mint

Nasturtium officinale – watercress

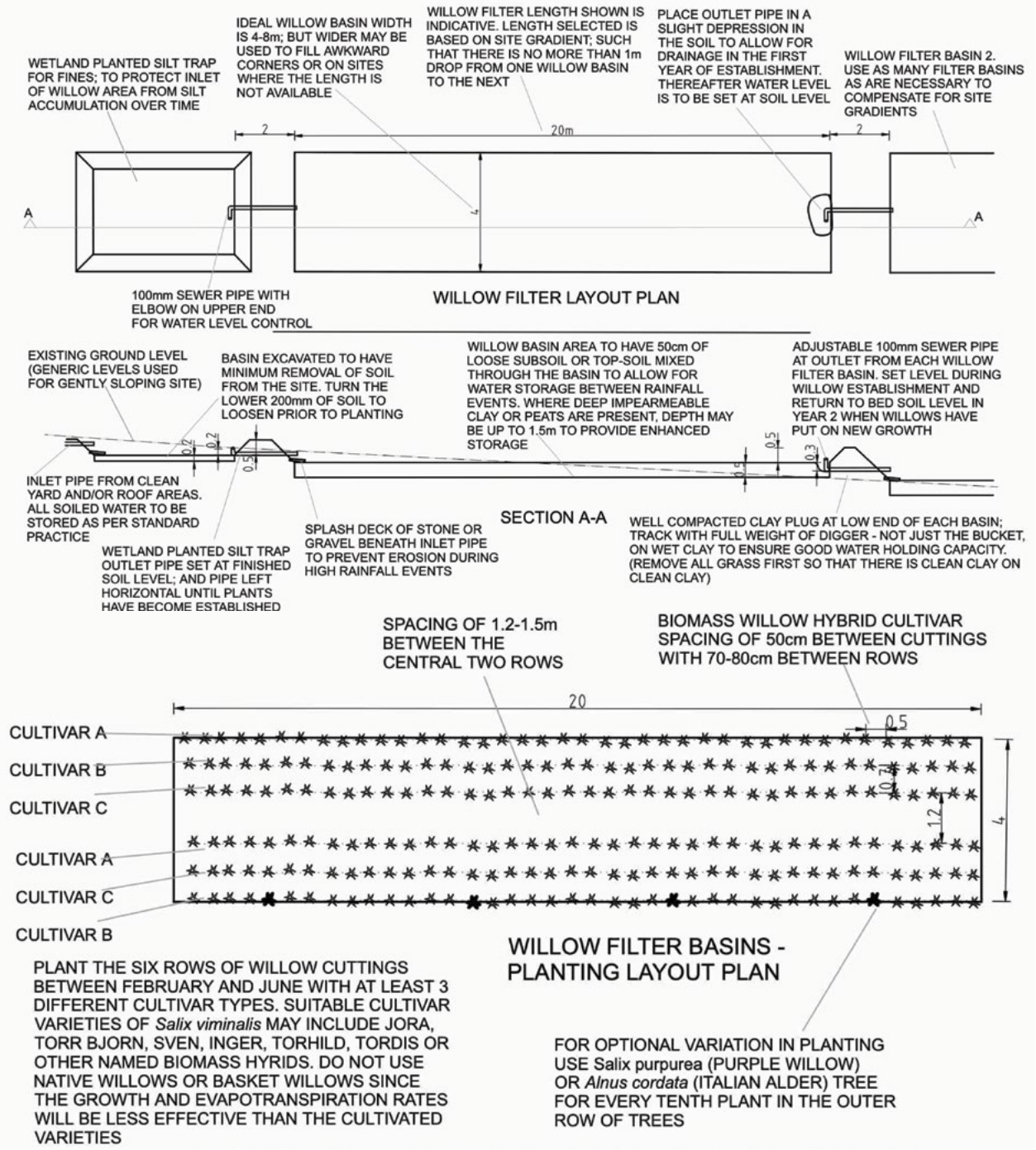
Typha latifolia - bulrush

Sparganium erectum - branched burr reed

Essentially any tall, flat-leaved, emergent wetland plants are typically suitable for use in wetland planted silt traps or buffer zones. If these are present on the farm, harvest by hand and use in preference to buying in stock.
Plants available from FH Wetland Systems if needed.

FH Wetland Systems Ltd.

Knocknaskeagh, Lahinch, Co. Clare
www.wetlandsystems.ie
Tel. 065-7075631
e-mail: reeds@wetlandsystems.ie

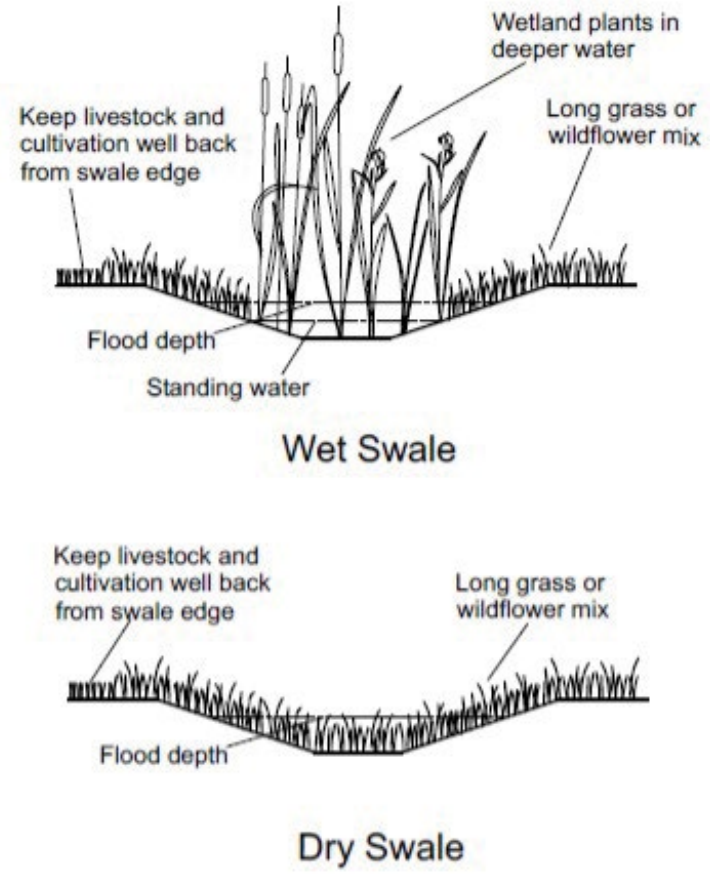


Example above of a willow bed layout for filtering farm clean yard runoff.
For further information: Planted Farm Scale Buffer Zones October 2023 by FH Wetland Systems.
Short Rotation Coppice Willow Best Practice Guidelines by Teagasc & AFBI.

FIGURE 13: FARM-SCALE-BUFFER-ZONES

APPENDIX 11:

POTENTIAL SWALE DESIGN



FH Wetland Systems Ltd.

Knocknaskeagh, Lahinch, Co. Clare
www.wetlandsystems.ie
Tel. 065-7075631
e-mail: reeds@wetlandsystems.ie

FIGURE 14: POTENTIAL SWALE DESIGN.

REFERENCES & SOURCES OF INFORMATION:

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Assessment of the catchments that need reductions in nitrogen concentrations to achieve water quality objectives.

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Design Guidance for Fish Passage on Small Barries OPW 2022.

New Zealand Fish Passage Guidelines for Structures up to 4m April 2018

DAFM: Native Tree Area Scheme Specification and Terms & Conditions October 2023

NOTES:

FOR MORE INFORMATION

Email the EIP office: info@watereip.ie
Contact your local Teagasc / Co-Op Adviser
Scan the QR code or visit **www.farmingforwater.ie**

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