



Portsmouth Water  
**Capital Grants Scheme**



Downs & Harbours  
Clean Water  
Partnership



# Contents

SECTION 1	<b>Introduction and Contact Information</b>	<b>3</b>
SECTION 2	<b>Capital Grant Options and Payment Rates</b>	<b>5</b>
SECTION 3	<b>Option Prescriptions</b>	<b>7</b>
SECTION 4	<b>How to Apply</b>	<b>32</b>
SECTION 5	<b>How to Claim</b>	<b>32</b>



## Acknowledgements

Portsmouth Water's Catchment Management team, within which the Downs & Harbours Clean Water Partnership sits, is indebted to Natural England's Catchment Sensitive Farming (CSF) programme and South East Water for providing permission to adopt text, photos, general content and layout of their respective Grant Schemes, with CSF being the original source.

CSF's Water Grant Scheme is available nationally through Countryside Stewardship for farms in priority areas within Catchment Sensitive Farming areas.

Link: <https://www.gov.uk/government/publications/countryside-stewardship-mid-tier-including-water-quality-capital-items-manual-for-1-january-2017-agreements>

South East Water's Water and Farming Partnership Capital Grant Scheme is a derivation of CSF's Water Grant Scheme and is available in areas supplied by South East Water but which do not receive CSF support.

Link: <http://www.southeastwater.co.uk/our-environment/water-and-farming-partnership>

This document has been specifically adapted to Portsmouth Water/Downs & Harbours' operation areas and therefore will differ in both content and approach to the aforementioned schemes.

- This booklet is intended as a guide for applicants and does not constitute a legal agreement.
- Should a formal offer of grant be made, terms and conditions will be set out in your agreement offer letter.
- Agreed items must be completed to the specifications set out in this handbook. Any deviations from specifications must be agreed in writing with the Portsmouth Water (PW) Catchment Officer prior to work being undertaken.
- Agreements last for five years. The date of expiry of your agreement will be confirmed in your offer letter.
- Photographs taken before and after, receipts, invoices and timesheets for work must be submitted when claiming for agreed items and should be kept for the duration of the agreement with Portsmouth Water.
- Before you make an application you must discuss it with your landlord, licensor or landowner to ensure you do not breach the conditions of your tenancy, licence or farming agreement. If you do not have management control of the land in question for the full five year period, your agreement must be countersigned by your landlord or landowner.
- Applications for grant items must be made in consultation with the PW Catchment Officer.

SECTION 1

# Introduction and Contact Information

Portsmouth Water is undertaking catchment management in response to a need to tackle rising nitrate levels and other diffuse pollution issues (e.g. oils and pesticides) affecting groundwater abstracted for public water supply. Via cost-effective measures that promote greater farming efficiency – reducing losses, therefore increasing sustainability and profitability – threats to drinking water and water environments should be reduced.

The Capital Grant Scheme will directly assist farmers (and other land managers) in sensitive areas, namely Source Protection Zones (SPZ), by part-funding capital items that should help reduce the risk of nitrate (and other) losses to groundwater. The Portsmouth Water Capital Grant Scheme is fully funded by the company but it is designed to run in parallel with Catchment Sensitive Farming's (CSF) Water Grant Scheme, not to replace it, for example where access to CSF's scheme is not possible or where it does not support funding for certain types of capital items or works.

The Portsmouth Water Capital Grant Scheme is being delivered through the existing Downs & Harbours Clean Water Partnership (D&HCWP). This is a partnership between Portsmouth Water, Catchment Sensitive Farming and the Environment Agency. It offers free advice and services on a voluntary basis, predominantly – but not exclusively – to farmers.

## The advice and services offered by the D&HCWP include:

- Free one to one confidential on-farm advice
- Free specialist reports with recommendations tailored towards farm businesses
- Free workshops and events providing up to date guidance and advice
- Soil husbandry and nutrient planning advice (including free soil sampling)
- Calibration of fertiliser applicators, slug pelleters and sprayers
- Subsidised advice for Mid-tier Countryside Stewardship applications
- Access to CSF's Water Capital Grants scheme of up to £10,000 per holding per year
- Portsmouth Water's Capital Grant Scheme

This booklet details the standard capital grant items that may be available. Farmers and land managers who wish to check their eligibility for any of the items in this handbook should contact the PW Catchment Officer in the first instance.

As Portsmouth Water's Catchment Management programme develops, in line with other water companies, it wishes to directly assist farmers – principally – in sensitive areas (Source Protection Zones, SPZs) with part-funding capital items that should help reduce the risk of nitrate losses to groundwater.

**Differences between the Portsmouth Water and CSF schemes include:**

- The total number of items being offered
- The types of some items being offered
- The funding level available for some items
- Application periods and completion periods
- No link to Countryside Stewardship, other than D&HCW being a Partnership to NE/CSF
- No link to the Rural Payments Agency

**Contact details for Portsmouth Water**

Portsmouth Water's Catchment Management  
Department email address:  
catchment.management@portsmouthwater.co.uk

**Portsmouth Water Capital Grant Scheme  
Catchment Management Department  
Portsmouth Water  
PO Box 8, West Street  
Havant  
Hampshire  
PO9 1LG**

Portsmouth Water Ltd  
Registered in England  
Company No. 2536455  
VAT number: 615 3758 35  
Registered office:  
PO Box 8, West Street, Havant, Hampshire, PO9 1LG

SECTION 2

# Capital Grant Options and Payment Rates

All items are paid at standard rates unless otherwise stated. Rates are based on a national average, designed to cover 50% of costs. Farm labour may be claimed provided specifications are met.

Option Code	Option Title	Payment Rate	Page
<b>A OPTIONS TO MANAGE CLEAN AND DIRTY WATER IN THE YARD</b>			
1	Yard - Underground drainage pipework	£5.50/m	7
2	Yard - Inspection pit	£200/unit	7
3	Concrete yard renewal (to separate clean and dirty water)	£27.14/m <sup>2</sup>	7
4	Rainwater goods	£11.40/m <sup>2</sup>	8
5	Rainwater harvesting - underground tanks	£350/m <sup>3</sup>	9
6	Rainwater harvesting - above ground tanks	£100/m <sup>3</sup>	9
7	First flush diverters/ downpipe filters	£125/unit	9
8	Roofing of yard areas (sprayer washdown/ manure storage/ livestock gathering/ slurry stores/ silage stores)	up to 50% of costs as agreed with Catchment Officer	9
9	Floating covers for slurry stores/ lagoons	£5.60/m <sup>2</sup>	12
<b>B OPTIONS FOR PESTICIDE HANDLING</b>			
10	Lined bio-bed plus pesticide filling and washdown area	£5,250	13
11	Lined bio-bed with existing filling and washdown area	£3,375	13
12	Biofilters	£1,485/unit	15
13	Pesticide filling area	£1,875/unit	15
<b>C OPTIONS FOR MANAGEMENT OF TRACKS AND TO MINIMISE POACHING</b>			
14	Livestock and machinery hardcore tracks	£40/m	17
15	Cross drains in or on farm tracks	£294/unit	18
16	Resurfacing of gateways to prevent poaching	£110/unit	19

Option Code	Option Title	Payment Rate	Page
<b>D OPTIONS FOR IN-FIELD WATER MANAGEMENT</b>			
17	<b>Piped culverts in ditches</b>	£340/unit	21
18	<b>Sediment ponds and traps</b>	£10/m <sup>2</sup>	22
19	<b>Constructed wetlands for treatment of pollution</b>	As agreed with Catchment Officer	23
20	<b>Swales</b>	£7.14/m	23
21	<b>Check dams/ seepage barriers</b>	£90/unit	23
22	<b>Equipment to disrupt tramlines to prevent run-off</b>	£1500/unit	24
<b>E OPTIONS FOR BOUNDARIES, FENCING AND GATEWAYS</b>			
23	<b>Hedgerow gapping up to intercept water</b>	£9.50/m	25
24	<b>Hedgerow planting to intercept water</b>	£11.50/m	25
25	<b>Fencing of watercourses, new hedgerows, buffer strips, field corners, wet field areas and tracks: sheep fencing</b>	£4.00/m	25
26	<b>Fencing: post and wire</b>	£2.50/m	26
27	<b>Electric fencing for seasonal exclusion of watercourses</b>	As agreed with Catchment Officer	27
28	<b>Gateway relocation</b>	£340/unit	27
<b>F OPTIONS FOR WATER PROVISION TO PREVENT DIRECT ACCESS TO WATERCOURSES</b>			
29	<b>Livestock drinking bays</b>	£254/unit	28
30	<b>Livestock troughs</b>	£110/unit	28
31	<b>Pipework for livestock troughs</b>	£2.65/m	28
32	<b>Watercourse crossings</b>	£300/unit	29
<b>G OTHER ITEMS</b>			
33	<b>Special projects and non-standard items, e.g. precision farming equipment</b>	As agreed with Catchment Officer	31

SECTION 3

# Option Prescriptions

Please note: Agreed prescriptions will be made available with formal offers of grant.

## A OPTIONS TO MANAGE CLEAN AND DIRTY WATER IN THE YARD

Dirty water around farm buildings can contain nutrients and harmful bacteria from livestock manure and slurry, giving it a high polluting potential. Cattle crossing yards can deposit a significant amount of manure and slurry on yard surfaces and rainfall will wash some of these materials into drains and ditches around the farm. Rainfall running through middens, silage clamps, feeding areas and on to dirty yards collects nutrients and bacteria, adding to the problem of slurry and dirty water storage. Dealing with dirty water is often an area where considerable savings can be made and it also substantially reduces the risks of water pollution.

### 1 Yard – underground drainage pipework

£5.50/m

### 2 Yard – inspection pit

£200/unit

#### General specifications

- The work may include re-organisation of clean and dirty drains, addition of cross drains, catchpits, gulleys, kerbs, 'sleeping policemen', and associated yard areas to reduce the amount of foul or sediment-rich drainage collected; and improvements to dirty drainage to avoid run-off to surrounding areas (this option does not include payment for dirty-water storage tanks). Clean water must not be contaminated by foul/dirty water.
- Any foul/dirty-water (which includes slurry or manure residues) and any channels and pipes used in connection with such storage must conform to the Water Resources (control of pollution) (silage, slurry and agricultural fuel oil) (England) regulations 2010 and as amended 2013 (SSAFO) and have a minimum design life of 20 years (with maintenance). If silage effluent is involved, below ground storage systems must be 'maintenance free' for the 20 year design life. The use of materials such as upvc or glass-reinforced plastic (GRP) will normally meet this requirement.

### 3 Concrete yard renewal (to separate clean and dirty water)

£27.14/m<sup>2</sup>

The aim is to improve or upgrade existing outdoor (uncovered) concrete, hardcore, Tarmac or bare earth yard drainage to reduce foul drainage volumes and to avoid run-off causing pollution.

Indoor yards or any form of covered yard work are not eligible for grant funding.

You can use this option to renew concrete in the base of existing outdoor areas or yards which are used for stacking or storing plastic wrapped silage bales. You must discuss your proposals with the Environment Agency before commencing any work as silage storage areas must comply with the Water resources(control of pollution) (silage, slurry, and agricultural fuel oil) (England) regulations 2010 as amended 2013 (SSAFO). You will also need to ensure that the Environment Agency is given notice of the place where the silage is to be stored at least 14 days before the place is first used for that purpose.

#### General specifications

- The construction of the upgraded concrete base must not allow silage effluent to escape.

- You will also need to consider how you are going to mix the concrete; it can be difficult to have any guarantee of the precise mix specification with volumetric cement mixers and these may not be suitable for larger areas.
- Your local supplier of concrete may be able to advise further. You also need to make sure that you receive a receipted invoice from your supplier; the delivery note from the driver is not acceptable to support your claim.
- If you are doing your own concrete works, you can select your own supplier of concrete; some may offer you a visit prior to delivery to agree volume, mix and suitability. Most commonly used mixes are RC45 and RC50, these and their associated specifications are shown below as a guideline. They are universal so will be common to all suppliers:

*Farmyards – PAV 2 20 mm Aggregate CEM 1 or C111A Cement + WRA + AEA + FIBRES 90mm SLUMP*

*Farmyards – RC50 XF 20 mm Aggregate C111A or CEM 1 Cement + WRA 120mm SLUMP (Heavy articulated vehicles)*

- Any renewed yards associated with clean and dirty water separation should be constructed using a minimum of 150mm thick concrete on at least 150mm thickness of compacted and blinded hardcore.
- The use of a polythene membrane on the surface of newly laid concrete will assist in curing the concrete and prevent premature drying-out.
- It is recommended that the slab is reinforced to minimise cracking and distribute the loads exerted by livestock and/or farm vehicles.
- The concrete should be laid in bays and all joints treated with an appropriate sealant that is resistant to effluent corrosion.
- The work must satisfy the relevant British Standards or other relevant or equivalent standards including BS 8000, BS 8500, BS EN 206-1, BS EN 1992 and BS 6213, all of which deal with concrete works and sealants.
- Do not fully load concrete until it achieves its design strength (equivalent to 28 day strength).

All drainage works must comply with the provisions of BS 8000, BS EN 752 and BS EN 1610 and great care should be taken to ensure that open excavations are not left unguarded during the works.

#### 4 **Rainwater goods**

**£11.40/m<sup>2</sup>**

##### **General specifications**

- This option is for existing buildings within the farmyard that currently do not have rainwater goods or which have existing rainwater goods but they are beyond their serviceable life and need replacement. Clean water from new rainwater goods must be directed into a clean water drain or rainwater harvesting systems in order to prevent rainwater from hitting yard surfaces and picking up potential contaminants. This may also help to assist in minimising the creation of dirty water in livestock yards. Rainwater goods on proposed new buildings are not eligible for a grant as they should already have rainwater goods built into the design.
- The rainwater goods must be of a sufficient specification to cope with the quantity of water generated from the roof of the building (e.g. 'storm' or high capacity gutter). Retro-fitting of gutter liners (e.g. 'plygene') where gutters are built in to structures (e.g. concrete farm buildings) may be fundable in agreement with the PW Catchment Officer.



**5 Rainwater harvesting – underground tanks**

**£350/m<sup>3</sup>**

**6 Rainwater harvesting – above ground tanks**

**£100/m<sup>3</sup>**

**General specifications**

*Underground tanks*

- Typical underground storage tanks are made from glass-reinforced plastic (GRP) and pre-cast concrete. They may also be built in situ (poured concrete using shuttering/ steel reinforcement) or potentially, for small tanks, using bricks or blocks and rendered to make waterproof. However, in situ concrete tanks and masonry tanks can be very expensive and they must be designed and constructed by competent persons. GRP tanks should conform to BS EN 13923 or other relevant or equivalent British Standards.
- The work includes the tank, pump, site excavation, a lean-mix concrete bed, backfilling with concrete to cover the tank and then, optionally, a free-flowing material to ground level and installation of connecting pipework and pump. These tanks will not be suitable in ground with a high water table unless further structural work is undertaken to avoid such tanks from floating. In such cases you must seek advice from the manufacturer. Pre-cast concrete tanks should conform to BS 8000, BS EN 1917, BS EN 1992-3:2006 or other relevant or equivalent standards. Installation should follow the manufacturer's instructions.

*Above ground tanks*

- Above-ground storage tanks should be suitably located on hardstanding or concrete according to the manufacturer's instructions. There are no generic specifications for above-ground storage tanks as they are pre-made tanks supplied as fit for purpose. This option does not include a lined, soil-bunded pond for rainwater collection.
- Reconditioned tanks are fundable in consultation with the PW Catchment Officer provided they have a guarantee from your supplier and will remain corrosion free for a minimum of five years.

**7 First flush diverters/downpipe filters**

**£125/unit**

- First flush rainwater diverters can be used for potentially contaminated roof water on individual rainwater downpipes, or as wall-mounted diverters or as larger stand-alone diverters depending on the volumes to be treated.
- The work includes the supply and installation of diverters. Such diverters can be used in conjunction with water storage tanks. Diverted contaminated water must not enter a clean water drain or discharge to ditches or watercourses. Downpipe filters can be used to keep leaves, debris and other contaminants out of diverters, clean water drains and water storage tanks. The work includes the supply and installation of downpipe filters.

**8 Roofing of yard areas (sprayer washdown/manure storage/livestock gathering/slurry stores/silage store). This is paid at up to 50 per cent of the cost of the item, as agreed with the PW Catchment Officer.**

An uncovered yard is vulnerable to polluted runoff during heavy rain. Roofing manure storage reduces runoff and saves storage and spreading costs. Roofing collecting yards and loafing areas can help save time, aid animal handling and welfare. Eligible open manure stores are those lying within the curtilage of the existing yard area or immediately adjacent to existing infrastructure where buildings are normally present. Temporary field manure heaps remote from main yard areas are not eligible for roofing.

Please note that grant funding cannot contribute towards the cost of building a multi-purpose structure even if you pay for the additional roof infrastructure yourself.

This option could be detrimental if used in close proximity to an historic farmstead or listed building. The impact on the fabric and setting of the historic buildings should be considered. Listed building consent may be required. You must submit photos with your application and photos taken after with your claim for this option and copies retained for future inspection if required.

#### *Roofing of manure stores*

The option is to be used for constructing a roof over existing 'solid' manure stores (where the manure has been removed from cattle, pig or poultry housing). Horse manure can cause the same problems as cattle, sheep, etc. However, we need to make sure that the number or intensity of horses justifies the investment and you will need to provide details of the diffuse pollution problem and how the capital item(s) being applied for would mitigate this. This option cannot be used for a dual purpose such as holding feed or storing machinery during the winter and as a manure store at other times of the year. If at inspection the manure store is found to be used for another purpose, you will be in breach of your agreement and Portsmouth Water may recover money with interest and penalties or withhold grant aid if the claim has not been paid.

#### *Roofing of livestock gathering/handling areas*



Eligible yards are those currently in use by livestock within the curtilage of existing yard area or immediately adjacent to existing infrastructure where buildings are normally present. Over wintering feed sites in fields remote from existing infrastructure are not eligible for this item. In addition, livestock must use the yard for significant periods of the day, for example, a dairy collecting yard in regular use or a feed/loafing yard used for the duration of the winter. This item cannot be used to build a livestock housing unit and the covered gathering area must not contain cubicles, kennels or bedding areas so that livestock can lie down and be kept overnight. Feed passages and drinking troughs sited within the covered area are allowed. Outside yard areas used for infrequent livestock movements or solely used for scraping are not eligible. If at inspection the livestock gathering area is found to be used as an animal housing unit, you will be in breach of your agreement and Portsmouth Water may recover money with interest and penalties or withhold grant aid if the claim has not been paid. The covering of the store may require planning permission. You should check with your local planning authority.

### General specifications

- The roof, structural supports and foundations must comply with the relevant part of BS 5502, or other relevant or equivalent standards.
- Roof water must be directed away from the manure store or livestock gathering area into a clean water drain or rainwater harvesting system.
- The work may include foundations (including excavation), supporting structure, the roof sheeting cladding above eaves level (gable ends), rainwater goods, and installation of clean water drains.
- We will not fund Yorkshire boarding, or other cladding. These have to be funded at your own expense.
- Drainage works must comply with BS 8000; BS EN 752 and BS EN 1610.

#### *Roofing of existing silage and slurry stores*

Field clamps are temporary structures without a concrete base and are not eligible for funding. If any part of the roof supporting structure forms part of the silo or slurry store, you must discuss proposals with the Environment Agency since significantly altered silos must comply with the Water Resources (control of pollution) (silage, slurry, and agricultural fuel oil) (England) regulations 2010 as amended 2013 (SSAFO).

The covering of the store may require planning permission. You should check with your local planning authority.

This option could be detrimental if used in close proximity to an historic farmstead or listed building.

The impact on the fabric and setting of the historic buildings should be considered. Listed building consent should be sought if applicable.

### General specifications

- The construction of the foundations and structural supports (CSF026A) must not allow silage effluent or slurry to escape.
- The foundations, support structure and roof must comply with the relevant parts of BS 5502.
- Roof water must be directed away from the silo or slurry store into a clean water drain.
- The work may include foundations (including excavation), supporting structure, the roof sheeting, cladding above eaves level (gable ends), rainwater goods, and installation of clean water drains.
- Drainage works must comply with BS 8000; BS EN 752 and BS EN 1610.

#### *Roofing of sprayer filling/washdown areas*

You can prevent rainfall increasing the volumes of water and pesticide washing that need to be handled by roofing an existing or new pesticide sprayer loading/wash down area or using a cover when the wash down areas are not in use. Please note the Portsmouth Water grant funding cannot contribute towards the cost of building a multi-purpose structure even if you pay for the additional roof infrastructure yourself.

This option is only available for roofing over a bunded concrete pad used as a pesticide handling area with all pesticide washings draining to a holding tank, bio-bed or bio-filter.

The roof should cover the concrete bunded area where sprayer/applicator filling and washing is carried out, to prevent rainfall increasing volumes of pesticide washings and drainage water to be safely disposed

of. It is your responsibility to seek advice from the local planning authority as to whether planning consent is needed and from the Environment Agency on relevant permits. You can refer to schedule two, part six of The Town and Country Planning (General Permitted Development) Order 1995.

Separate arrangements are required for safe disposal of the washings and drainage water from the wash down areas and holding tank. If you intend to dispose of the pesticide washings/drainage water to land, before submitting an application for a grant under the scheme, you must contact the Environment Agency for advice on the requirements for an Environmental Permit, under the Environmental Permitting (England and Wales) Regulations 2010. Guidance on Environmental Permit for Water Discharge and Groundwater Activity Permits can be viewed on the Environment Agency website at [www.gov.uk/guidance/discharges-to-surfacewater-and-groundwater-environmental-permits](http://www.gov.uk/guidance/discharges-to-surfacewater-and-groundwater-environmental-permits). The Environment Agency may charge for the relevant permit.

The construction of the foundations, support structure and roof must conform to the following conditions:

### **General specifications**

- The roof area must cover the concrete-bunded wash down area draining to the holding tank plus 1m overhang on each side. The bunded area should be the sprayer transport width (with booms folded) plus 2m and sprayer length plus 1.5m. We will pay your claim on this basis. Additional roof area would be at the applicant's own cost.
- The roof structure must be impermeable to rainwater and include guttering and drains to direct all roof water away from the wash down area into a clean water drain.
- The construction of the foundations and structural supports must not allow pesticide washings to escape.
- The foundations, support structure and roof must comply with the relevant parts of BS 5502.
- The work may include foundations (including excavation), supporting structure, the roof sheeting cladding above eaves level (gable ends), rainwater goods, and installation of clean water drains.
- Drainage works must comply with BS 8000; BS8500; BS EN 752; BS EN 206-1:2000; BS6213:2000+A1:2010 and BS EN 1610.

## **9 Floating covers for existing slurry stores and lagoons**

**£5.60/m<sup>2</sup>**

### **General specifications**

- These options require specialist supply and fitting in consultation with the PW Catchment Officer.
- They must be impermeable to prevent rainfall from entering the store and consequently may require a small pump to remove surplus rainwater collected on the surface of the cover.
- The cover should be secured to avoid wind damage and may be placed on floats, depending on the surface area of the slurry.
- Installation should be carried out when the store is empty.
- Display appropriate signs to warn of the dangers of confined spaces and fragile covers.
- Applicants are reminded scheme rules dictate any item grant funded must be in use for at least five years after the grant has been paid. Failure to meet this may require repayment of grant. Applicants are therefore advised to carefully consider the type of cover chosen and its life expectancy.

## **B OPTIONS FOR PESTICIDE HANDLING**

### **10 Lined bio-bed plus pesticide filling and washdown area**

**£5,250/unit**

### **11 Lined bio-bed with existing filling and washdown area**

**£3,375/unit**

Bio-beds are intended to collect, retain and degrade pesticide residues arising from agricultural pesticide handling activities, including filling or washing sprayers/applicators. They have the potential to reduce pollution of ground and surface waters. Bio-filters are container-based bio-beds that also serve this purpose.

Experiments have shown that they can effectively degrade high concentrations of relatively complex mixtures of pesticides.

You must seek guidance from the Environment Agency on the location of your proposed bio-bed, whether you will need to register a waste exemption and/or obtain an Environmental Permitting Regulations (EPR) Exemption.

The treatment of pesticide washings in a lined bio-bed is covered by the Environmental Permitting (England and Wales) Regulations 2010. They can usually be installed and used under an exemption T32.

This exemption allows you to treat non-hazardous pesticide washings prior to their disposal to land. There are fewer environmental impacts from this compared with discharging untreated pesticide washings directly to land.

The construction of a bio-bed may well be considered by local planning authorities to be an 'engineering operation' and as such may also require planning consent; you should contact your local planning authority for guidance before you start any work. Bio-beds may not be appropriate for all situations and there will be some locations which are not suitable.

Before installing a bio-bed you must consider whether the proposed site presents an unacceptable risk to surface water, groundwater and the nearby environment. A similar risk assessment should be done for a biofilter. The place where you store and handle your pesticides and where you wash-down spraying equipment is usually the best place to site your bio-bed or bio-filter. However, you must not construct the bio-bed within 10m of a watercourse or 50m from a spring, well or borehole. It also has to be away from access routes to prevent the trafficking of potentially contaminated material.

The Environment Agency has defined Source Protection Zones (SPZs) for all groundwater sources like wells, boreholes and springs that provide water for human consumption. These zones, which are mapped for all the largest sources, show the risk of contamination from any activities that might cause pollution in the area. The closer the activity, the greater the risk. To assess the suitability of the proposed bio-bed site in terms of risk to ground water, you should follow this process to find the SPZs that have been mapped in your area:

- i) Use this link to go to Defra Magic Map: <https://magic.defra.gov.uk/MagicMap.aspx>
- ii) Select 'Designations' on the drop down Table of Contents
- iii) Click the '+' icon next to 'Land-Based Designations'
- iv) Click the '+' icon next to 'Non-statutory'
- v) Click on 'Source Protection Zones merged (England)'
- vi) Then enter your postcode/ the location into the search bar at the top of the page

The map will show whether your proposed location falls within one of the Source Protection Zones. If the proposed location of the bio-bed falls within a SPZ 1 or 2 you would need to contact the Environment Agency's National Helpline 03708 506 506 or email [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk) to determine the suitability of the proposed site. It is also important to take into account the location of wells, springs and boreholes that have not had SPZs mapped, including those not producing water for human consumption. For this, you will need to make local enquiries if works are proposed within 50 metres of the proposed site. New excavations must avoid areas of archaeological or historic interest. Further information and guidance on installing bio-beds or a bio-filter and pesticide handling and disposal facilities can be found on the Environment Agency's website at [www.gov.uk/government/organisations/environment-agency](http://www.gov.uk/government/organisations/environment-agency) or from the Environment Agency's helpline (03708 506 506) or the following website: [www.voluntaryinitiative.org.uk](http://www.voluntaryinitiative.org.uk)

Further information will also be available from the PW Catchment Officer.

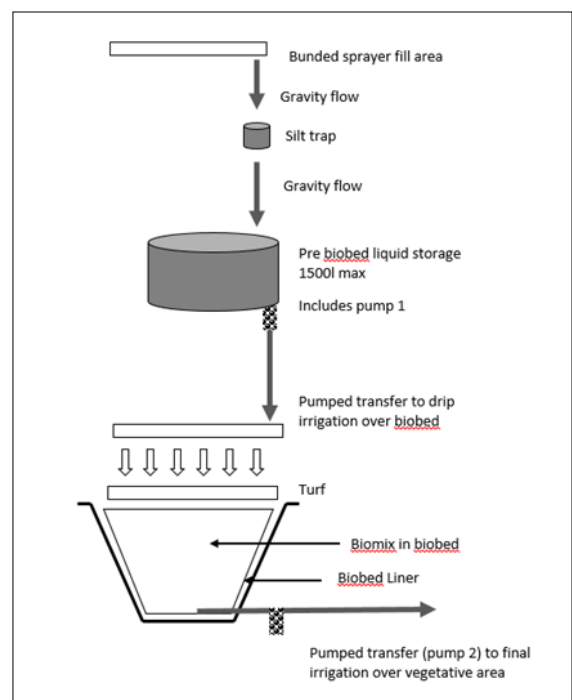
- Follow the guidance set out in VI's Bio-bed manual Version 4 (2013). Copies can be obtained from the PW Catchment Officer.
- The work may include the installation of a bunded loading/washdown area, holding tanks, the bio-bed structure (but not the bio-bed material), liquid distribution system (for off-set bio-beds), necessary pumps and pipes and all site preparation and excavation work.
- Remove topsoil and excavate an area for the bio-bed.
- Remove and block off any field drains.
- Earth banks should have slopes of around 30 – 35 degrees (about 1 in 1.5) that are stable and well compacted.
- The bio-bed must have a synthetic liner at least 1.5mm thick with no unsealed seams laid on top of a geotextile membrane (190g/m<sup>2</sup>) and 25mm of sand blinding. Follow the liner manufacturer's installation instructions.
- The bio-bed must have an effective depth of at least 1m and at least one cubic metre of bio-bed material must be used per 1000 litres of liquid treated in any 12 month period.

#### **General specification for pesticide filling and washdown area:**

- The structure must be impermeable and not within 10m of any field drain, ditch, pond or watercourse or within 50m of any spring, well or borehole.
- Choose a site that is not affected by a high water table or liable to flooding.
- Remove topsoil and excavate as necessary to allow the construction below. Remove and divert any field drains that may cross the site.
- The excavated site should be covered with approximately 150mm of compacted hardcore over which a sand blinded layer (approximately 25mm) should be placed to protect a damp proof membrane (dpm) of 1200g weight. A 150mm thick reinforced concrete slab should then be laid to falls of not less than 1:100.
- A concrete bund, at least 100mm high and 300mm wide, should be constructed around the perimeter of the slab.

### Indirect (Offset) Lined Bio-bed

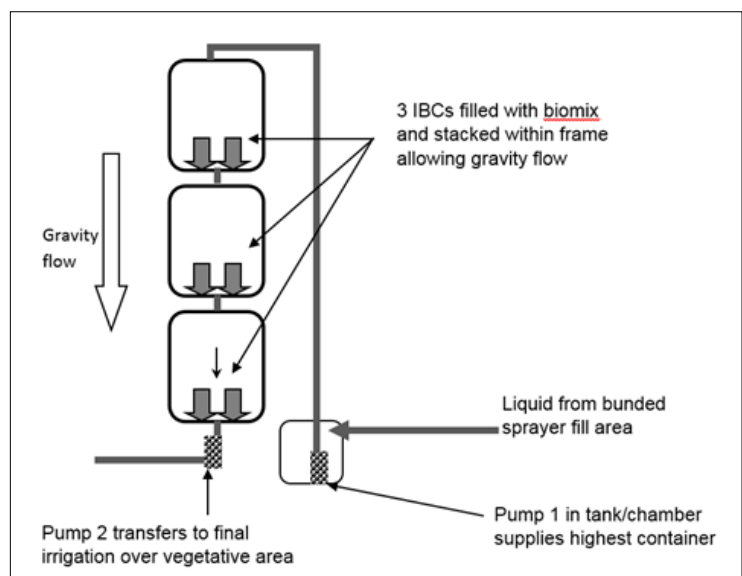
- The bunded concrete slab should have a slotted cover type drain (100mm x 100mm) installed, which is connected to a silt trap with removable cover with a nominal capacity of 250mm below inlet. If preferred, concrete can be laid sloping four ways to the centre of the slab where a drain is situated, with a silt trap within this drain.
- All concrete joints should be sealed with a proprietary sealant.
- The size must be adequate to contain all liquids that drop from the sprayer or applicator, and to allow the operator to work freely in all pesticide mixing, loading, wash down and water-filling operations.
- The width and length of the concrete bunded area for sprayers should be the sprayer transport width plus two metres and sprayer length plus 1.5 metres.



## 12 Bio-filters

£1,485/unit

A bio-bed may not be suitable for all sites, particularly where space is limited or volumes of pesticide washings are smaller. In these situations a bio-filter may be more appropriate. It is a simpler construction than a bio-bed but has the same function using organic material to break down the pesticide washings. The pesticide washings are applied to the top container, then trickle down through the lower two, before being collected for disposal, as with a bio-bed. It is constructed by using 3 integrated bunded containers (IBCs) stacked vertically. A fourth IBC is needed as an initial storage tank adjacent to the 3 IBCs in a stack.



### General specifications

- Follow the guidance provided in the Catchment Sensitive Farming publication 'How to build a bio-filter' (2014). Copies can be obtained from the PW Catchment Officer.
- Consideration should be given to the site and safety in operating the bio-filter e.g. away from thoroughfares.

## 13 Pesticide filling area (to link to Biofilter, or approved containment)

£1,875/unit

### General specifications

- The structure must be impermeable and not within 10 metres of any field drain, ditch, pond or watercourse or within 50 metres of any spring, well or borehole.

- Choose a site that is not affected by a high water table or liable to flooding.
- Remove topsoil and excavate as necessary to allow the construction below. Remove and divert any field drains that may cross the site.
- The excavated site should be covered with approximately 150mm of well compacted hardcore over which a sand blinded layer (approximately 25mm) should be placed to protect a damp proof membrane (dpm) of 1,200g weight. A 150mm thick reinforced concrete slab should then be laid to falls of not less than 1:100.
- A concrete bund, at least 100mm high and 300mm wide, should be constructed around the perimeter of the slab.
- The bunded concrete slab should have a slotted cover type drain (100mm x 100mm) installed, which is connected to a silt trap with removable cover with a nominal capacity of 250mm below inlet. If preferred, concrete can be laid sloping four ways to the centre of the slab where a drain is situated, with a silt trap within this drain.
- The drain with silt trap should be directed to a tank or chamber (maximum size 1,500 litres), from which the pesticide washings will be pumped and directed to a bio-bed or bio-filter or disposed to a permitted area on the farm approved by the Environment Agency or via a registered waste carrier to a suitable disposal site.
- A typical storage/holding tank should be sized according to the local rainfall and the area of concrete (if there is no roof or cover over the structure). It may be made from seamless polyethylene, glass-reinforced plastic (GRP) or pre-cast concrete. GRP tanks should conform to BS EN 13923:2005 and pre-cast concrete tanks should conform to BS EN 1992-3:2006 or other relevant or equivalent standards. A pump should be installed to allow emptying of the holding tank, with pump switch levels set to ensure no more than 1500 litres of waste is stored.
- The work must satisfy the relevant British Standards including BS 8000-11:2011, BS 8500, BS EN 206-1:2006, BS EN 1992-1-1:2004; BS 6213:2000 + a1:2010, BS 5502 and BS EN 752.
- All concrete joints should be sealed with a proprietary sealant.
- The size must be adequate to contain all liquids that drop from the sprayer or applicator, and to allow the operator to work freely in all pesticide mixing, loading, wash down and water-filling operations.
- The width and length of the concrete bunded area for sprayers should be the sprayer transport width plus two metres and sprayer length plus one metre.



## C OPTIONS FOR MANAGEMENT OF TRACKS AND TO MINIMISE POACHING

### 14 Livestock and machinery hardcore tracks

£40/m

Effective positioning, construction and maintenance of new livestock/farm machinery tracks can help to reduce the amount of poaching and soil erosion, run-off and watercourse pollution associated with this movement.

New tracks should avoid areas of existing wildlife interest. This item should also avoid sites of archaeological or historic importance. You should ensure you have any relevant consents before carrying out the work.

Where possible, tracks should be sited alongside field boundaries rather than directly across the middle of a field. EA or IDB consent may be required for any track sited adjacent to a watercourse. A suitable buffer should be maintained between the track and any watercourse.



Please contact the Environment Agency before starting to build your tracks to apply for the relevant waste exemption licence, for most cases it will be U1 – Use of waste in construction. Example activities for a U1 waste exemption licence include:

- (i) Using crushed bricks, concrete, rocks and aggregate.
- (ii) Using road planings and rubble to build a track, road or car park.

The installation of cross drains or sleeping policeman (capital grant item 15) is essential on sloping tracks where run-off is an issue or where a track leads onto a highway. Such drains could be linked up with a sediment trap to prevent excess runoff from contributing to localised flooding.

#### General specifications

- Excavate a trench 2.4 metres wide and to a minimum depth of 150mm, or down to a depth where a firm base is reached.
- Use the soil to profile the edge of the track so that it acts as a bund and prevents the movement of track materials.
- Overlay the excavation with a geotextile membrane (see notes below) and backfill with local stone or coarse scalplings to a depth of 150mm or more and compact. The exact depth of local stone/ hardcore will depend upon the frequency of livestock movements.

#### Please note:

- Not all soil types require a geotextile membrane; its main function is to separate underlying soil from the overlying hardcore. In the absence of a geotextile there is always a risk of the finer soil particles mixing, particularly under wet conditions with the hardcore, compromising the track. If track specifications are met geotextiles have a long life even under tracks with high load pressures. The need for a geotextile is based on the soils inherent load bearing capacity.

- Tracks on possibly some limestone/chalk soils are self-metalling and as such will need very little extra stone and by definition would not require a geotextile. However, significant track wash can occur on slopes with steep gradients on these soils so track drainage may need to be addressed so as to avoid track erosion.
- Typical brown earths that are well drained may need a geotextile in some situations, although these are difficult to define. If the excavated track profile contains soft pockets, hollows etc. then these should be dug out, drained, and filled with hardcore and compacted as outlined in the existing hardcore track specification. It is recommended that these areas should have a geotextile laid. The presence of existing deep tractor ruts could also be indicative of the need for a geotextile.
- Load bearing strength of clay soils, particularly thick clay is low as they can remain wet for significant periods of the year. In general they need a greater depth of stone to make up the track layers compared to other soils other than peats. On this soil type a geotextile is considered a must.
- Top off with a finer material (wearing course, 18mm to dust) to a depth of 25-50mm and compact it into a camber with a vibrating roller so as to ensure track drainage.
- Any track run-off should be directed to a ditch or other stable drainage outlet or diverted onto grassland.
- Road planings or crushed recycled aggregate may also be used to form the basal layer subject to the necessary permits from the Environment Agency. Crushed recycled material up to a maximum aggregate diameter of 50mm should be used to prevent damage to the membrane. The use of general ungraded building rubble is not permitted. You should take expert advice on the use of road planings and on measures needed to ensure that any oil seepage does not cause water pollution. You must comply with waste regulations. The Environment Agency has developed a specific position on the use of road planings which allows farmers to use small volumes (less than 150 tonnes per site) without having to pay the normal registration fee. Contact the Environment Agency for further information.
- Road planings are not recommended for livestock tracks.
- Concrete railway sleepers are classed as hardcore. Where practical, they should be sorted into sizes of equal length prior to laying. Concrete sleepers should be countersunk so that they are slightly proud of the field surface and laid directly onto a level firm surface. This means that the immediate grass layer will need to be removed in most cases. The sleepers should be butted up against each other and formed into the track.
- For welfare reasons, gaps between the sleepers should be grouted with soil or fine scalplings. The back of the machine bucket can be used to press and therefore secure the sleeper in the ground.

### 15 **Cross drains in or on farm track**

**£294/unit**

Cross drains should be designed to intercept and conduct surface run-off so as to reduce flow rates at down slope locations and therefore help to prevent erosion on farm track surfaces. By taking action to control run-off you can reduce dirty water disposal costs, reduce water damage to tracks, minimise soil erosion and reduce the risk of water pollution.



An open channel is the most effective way of intercepting run-off water from tracks as it can easily be cleared of accumulated silt and debris. Run-off should not be directed to areas of existing wildlife interest such as ponds. Field margins alongside farm tracks may also be used to intercept low flows. This option could be detrimental if used in close proximity to an historic farmstead or listed building, particularly where cobbled surfaces are present. The nature and historic value of the existing surfaces should be considered and listed building consent should be sought if applicable.

### General specifications

- Excavate a channel across the width of the track to a minimum depth of 100mm and widths of 100-250mm.
- The depth and spacing of these cross channels will depend on the volume of water that they have to intercept, which will also be affected by the slope of the track, the track construction and the amount of rainfall.
- It may be appropriate to construct the channel in concrete with a gridded top which must be at least 150mm wide.
- The water from the cross drains should be directed to a stable drainage outlet such as a ditch, culvert or other drainage outfall.
- Alternatively, the use of cross humps (sleeping policemen) across the track may be more appropriate to direct water off the track. They must be sufficiently robust to stand up to farm vehicle movements and not undermine the track in any way. The spacing of the cross humps is critical and you should discuss your proposals with the PW Catchment Officer. For tracks, work should include:
  - The excavation of a trench across the track to a minimum depth of 300mm.
  - Fill with concrete and key in kerb stones protruding from the track.
  - Taper the concrete on the lower side of the track to the edge of kerb stone.
  - Leave concrete on the upside of track flat below the level of kerb stone.
  - The water from the sleeping policemen should be directed to a stable drainage outlet such as a ditch, culvert or other drainage outfall.
  - Concrete work should be carried out in accordance with the relevant British Standards BS 8000 and BS 8500.

### 16 Resurfacing of gateways to prevent poaching

£110/unit

This item aims to help reduce flooding either side of a gateway caused by soil compaction from vehicles and machinery. This option can help reduce soil erosion and runoff and improve the quality of watercourses.

The minimum area resurfaced should be the full width of the gateway multiplied by the length of the gate into the field (opened at 90 degrees) so for a three metre gate this would cover an area 9m<sup>2</sup>. In many cases this area may need to be extended to accommodate specific gateway circumstances and will relate to the type and frequency of vehicular and livestock movements.



### General specifications

- Excavate the extent of the hard standing to a minimum depth of 150mm or down to a naturally occurring sub-base, the depth of which will vary according to the type of ground.
- Remove the excavated soil from the immediate gateway area, spread it on the verges of the field track and profile as necessary to permit drainage.

- Overlay the excavation with a geotextile membrane and apply aggregate/hardcore to a minimum consolidated depth of 150mm. The required depth of hardcore depends upon soil type; the depth of existing ruts can be used as a guide. A greater depth of stone will be required on peaty soils. In such circumstances a coarser aggregate will be needed to form a base/sub-base layer before placing hardcore on the surface. In most situations, the minimum depth should be at least 150mm.
- The whole of the hardcore area should be well compacted. If there is a requirement for a thicker depth of hardcore, successive layers (each 150mm thick) should be applied and be well compacted.
- You can use road planings, but you should take expert advice on their use and on measures needed to ensure that any oil seepage does not cause water pollution and you must comply with waste regulations.
- The Environment Agency has developed a specific position on the use of road planings that meet a quality control standard, which allows farmers to use small volumes (less than 150 tonnes per site) without having to pay the normal registration fee. Contact the Environment Agency for further information.
- Road planings are not recommended where livestock will use the gateways.

## D OPTIONS FOR IN-FIELD WATER MANAGEMENT

### 17 Piped culverts in ditches

£340/unit

Culverts are short sections of piped ditch and are designed to take water under a track that provides safe carriage for farm machinery or livestock. The culvert must not be used for agricultural drainage unless this is connected with management under an agri-environment scheme or the drying out of archaeological features.

You should consult the Environment Agency before commencing any work. You may require 'land drainage consent' to work in the watercourse; this will be required even for ditches on farms and is to ensure that culvert is designed and installed in such a way that the impacts on the stream are minimised.

The Environment Agency may make a charge for the consent.

#### General specifications

- Pipes must be capable of accommodating anticipated design flows and must always be at least 450mm in diameter.
- The length of the pipes must provide an adequate, useable width at ground level for normal traffic using the crossing. The minimum useable width for a culvert used by wheeled traffic is 4m.
- The culverts should be constructed using concrete pipes that comply with BS 5911 and BS EN 1916. Pipes should have a positive joint to preserve alignment.
- Twinwall pipes are an alternative to conventional single walled pipes/concrete pipes. They should be manufactured and certified to the British Board of Agreement (BBA) Culvert construction.
- Concrete work should be carried out in accordance with the relevant British Standards and all pipework should be laid in accordance with BS 8000.
- Pipes should be set on a firm bed and be in true alignment.
- The trench bottom (usually the ditch bed) should be recessed where necessary to accommodate pipe joints (normally some form of spigot and socket).
- The pipe invert (water entry level) at the upstream end should be fractionally below the bottom of the true ditch bed.
- Where the total depth of cover over the pipes is less than their diameter plus 300mm, a concrete pad at least 150mm thick should be used.
- in all cases, the pipe manufacturer's specifications and warnings should be sought and observed.
- The pipe gradient should be approximate to that of the ditch bed.
- The ditch bed should be graded downstream to allow for any deepening required to accommodate the culvert.
- Measures to prevent erosion (such as stone pitching or slabs) may be needed at the downstream end of the culvert and, if appropriate, on the sides of the ditch.
- Backfilling stone-free filling should be packed and rammed tight at the sides of the pipe and to a level 300mm above the crown (top) of the pipe.

- All filling should be put back in layers not more than 150mm thick and thoroughly consolidated. The finished backfill surface should be left 'crowned' above surrounding levels, to allow for some settlement and to prevent surface water collecting on the crossing.
- For twin wall pipes side fill material should be placed evenly on both sides of the pipe and compacted as above. It is important that any compacting machinery does not come into contact with the pipe at any stage of compaction. The side fill material should extend to a minimum of 100mm above the pipe crown.
- Backfill material that lies within 300mm of the pipe crown should be free from stones greater than 40mm. No heavy compaction should be applied until the cover to the pipe is a minimum of 300mm. However, the exact thickness of cover must be in compliance with manufacturer specifications.
- For farm tracks used by heavy vehicles, the minimum strength of the pipe should be checked with the manufacturer and if necessary the depth of backfill cover increased. In circumstances where the depth of cover cannot be achieved to meet manufacturer compliance a protective concrete slab as outlined above will be required.
- Adequate provision should be made to retain the backfill material against the pressure of traffic using the crossing. Sloping earth ends can be used as headwalls; these should have slopes not steeper than 1 in 1.5, and the length of the culvert should be extended by 1m at each end to give stability to the walls.
- A specialist design is required if the culvert will be used by heavy vehicles. Pipes of specified strength and appropriate bedding and backfilling should be used.

## 18 **Sediment ponds and traps**

£10/m<sup>2</sup>

Sediment ponds and traps are used to provide an area where muddy run-off is allowed to pond, so sediment will settle out. New silt traps within watercourses should only be used when other erosion control measures to prevent erosion and sedimentation cannot be used due to site conditions or other restrictions.

These options are best used as part of a wider network of erosion and sediment control measures. It is preferable to have a number of small ponds and traps around the farm than a single larger feature.

Excavations must avoid areas of existing wildlife value.

This item should avoid sites of archaeological or historic importance. You should ensure you have any relevant consents before carrying out the work.

You should discuss your proposals with the Environment Agency as a permit may be required in some situations. In addition, such work could be considered to be an 'engineering operation' and may require planning permission. You should consult with your Local planning authority before starting any work.

### **General specifications**

- The sediment pond should include the area covered by the embankments as well as the open water area.
- For relatively small scale operations where most of the soil is excavated and above-ground embankments are not needed, the work must include the following:
  - Excavation to an appropriate depth creating gently sloping banks.
  - Spread excess soil thinly across land away from the excavated pond area.

### 19 **Constructed wetlands as agreed with the PW Catchment Officer**

Constructed wetlands can be used to slow and intercept water prior to reaching watercourses, allowing soil particles, nutrients and potential pollutants to settle. They can act as flood storage to help increase resilience to flooding and may also be of high wildlife value.

Designs and specifications should be discussed with the PW Catchment Officer.

### 20 **Swales**

**£7.14/m**

Swales are linear depressions formed in the ground to receive run-off and slowly move water to a discharge point. They normally run at a gentle angle across slopes so that water can infiltrate into the soil within the swale and they are normally grassed over. Swales should not be built on areas with known or potential solution features, these features can act as preferential pathways for rapid drainage of surface water and associated contaminants. Please discuss with the PW Catchment Officer to see if the planned area has such features present.

### 21 **Check dams/seepage barriers**

**£90/unit**

Check dams are small dams constructed across a swale to slow flows to encourage infiltration. They can be made from graded broken stone or timber which slow the flow of water, allowing run-off to pond behind the dam and sediment to settle out. Swales are often used alongside roads where the road surface can drain directly to the swale. You can use them to treat lightly contaminated run-off from hard standing around farmyards and farm roads where it pools before soaking away. This item should avoid sites of archaeological or historic importance. You should ensure you have any relevant consents before carrying out the work.

The work should consist of site preparation, excavation of the swale and, if required, the installation of check dams. Formation of a swale could be considered to be an 'engineering operation' and may require planning permission. You should consult with your Local planning authority before starting any work.



#### **General specifications**

- When calculating the area of the swale, the measurement should start at the inside edge of the created bank.
- Construct the swale on the contour or at a longitudinal slope of normally no greater than 2 degrees.
- Mark the layout of the swale on the ground and excavate the swale to a depth of 750mm. Topsoil should be stockpiled separately and used in the bottom of the swale and on the graded slopes.
- Side slopes should be graded to no more than 1 in 3. For greater slopes you will need to install more check dams.
- Excavate the floor of the swale for a further 150 – 250mm and replace the excavated material with topsoil.

- Establish a dense grass sward on the sides and floor of the swale. A seed mixture should be sown at a seed rate of 25 g/m<sup>2</sup> and consist of a multi species grass mix such as creeping red fescue (70 per cent), smooth meadow-grass (20 per cent) and creeping bent (10 per cent).
- Check dams should be located at regular intervals along the swale, though the steeper the gradient of the swale the shorter the distance between them should be. Excavations should avoid any areas of archaeological or historic importance or of existing wildlife interest.
- Excavate a trench across the width of the swale.
- Make the trench 200mm deep and 3.3m long. Build up the check dam to 75 – 150mm and grade broken stone to a height of 500mm above the floor of the swale.
- The side slopes of the check dam should be at a maximum gradient of about 1 in 2.

## 22 **Equipment to disrupt tramlines to prevent run-off**

**£1,500/ unit**

This option aims to support the purchase of tramline disruption equipment to reduce the risk of soil erosion, runoff and associated impacts to nearby water courses.

### **General specification**

- In consultation with the PW Catchment Officer: purchase a spiked/rotary harrow or tine device that will have a direct loosening effect on compacted soil within the wheeled tramline area in a cereal rotation.
- The device must be built to either attach directly to a tractor, or to a sprayer being towed behind a tractor, or a self-propelled sprayer.
- You must keep a record of when tramlines are established within the cereal crop and date tramline disruption equipment deployed.
- Funding is for the purchase of one piece of equipment per holding where the farm is in an area targeted for the reduction of water pollution from agriculture and where the item has the written support of the PW Catchment Officer.
- Eligible farms are those with combinable crops where fields are highlighted at risk of soil erosion.
- A visual inspection at any time of year to view equipment and records of tramline establishment and deployment of equipment may be undertaken by Portsmouth Water or the PW Catchment Officer. Receipted invoices for purchase and bank statements should be kept and produced upon inspection.

## E OPTIONS FOR BOUNDARIES, FENCING AND GATEWAYS

### 23 Hedgerow gapping up to intercept water

£9.50/m

### 24 Hedgerow planting to intercept water

£11.50/m

#### General specifications

- Prepare the ground along a 1.5 metre wide strip to control existing vegetation and weeds by herbicide treatment or cultivation.
- Plant bare-rooted nursery stock during the winter months from November to early February when the ground is not frozen or waterlogged.
- The plants should be at least two-year-old transplants, 450-600 mm high (BS3936) and of British native origin, ideally sourced locally. Planting must be in a staggered double row 30cm apart, with at least six plants per metre depending on the local style.
- All failures must be replaced in the following planting season. Once planted the hedge should be maintained so there is a continuous hedgerow in good condition by the end of the five year agreement.
- Damage by livestock and other grazing animals must be prevented. Protective fencing (on one or both sides of the hedge) or individual guards may be needed and must be set back at least 1.2m from the centre of the hedge.



### 25 Fencing of watercourses, new hedgerows, buffer strips, field corners, wet field areas and tracks: Sheep fencing

£4.00/m

#### General clauses:

Fencing options are not available to meet the cost of maintenance and normal wear and tear and therefore replacement fencing is not eligible for grant aid. Fencing must be maintained for the duration of the five year agreement.

Fencing should avoid sites of archaeological or historic importance.

You should ensure you have any relevant consent such as Scheduled Monument consent from English Heritage or the Environment Agency (in the case of watercourses) prior to the commencement of work.

Visual intrusion and impacts on landscape character should also be considered in the construction and alignment of new fencing lines, particularly in designated landscapes or historic parkland.

The detailed specifications for all types of fencing are included within BS1722. All fencing must be erected in accordance with the appropriate specification. All softwood timber must be fully peeled and tannalised or treated with an approved preservative. Durable hardwood, such as oak or sweet chestnut, may be used and does not require treatment with preservatives. The timber sizes quoted in the specifications are minimum requirements.

Posts can be round, square or semi-circular providing that the thickness, height and durability of the post meet the standards set out in this handbook.

### *Watercourses*

Trampling by livestock can erode banks and increase inputs of sediment to watercourses lowering surrounding water quality. Livestock can also add pollutants directly by urinating and defecating into the water. Preventing access by fencing off water courses and buffer strips is a simple solution to help reduce this type of pollution. However, care should be taken when fencing watercourses because it can sometimes create new environmental problems, for example, un-grazed banks can become over-grown, reducing habitat value for wildlife, and are more likely to develop problems with invasive problem plants, such as Himalayan balsam. This is particularly important in floodplain areas where ditches have high water levels to act as wet fences.

Ideally watercourses should be protected by reducing stocking pressure within the field. Alternatively, livestock should have limited access to the banks to allow some grazing without excess damage. This can be done by fencing away from the bank so that livestock can be allowed occasional access within the fenced area. However, if faecal contamination is a concern then livestock should be kept away from the watercourse entirely. In this case fencing should be far enough away from the top of the bank to enable occasional mechanical control of vegetation.

### *New hedgerows, buffer strips, field corners, wet field areas and tracks*

- Fencing options may be applied in consultation with the PW Catchment Officer.
- All fencing options include payment for posts.

### **General specifications**

- The fence must be at least 1.05 metres high. If extra height is required, this should be obtained by fixing additional strands of plain or barbed wire.
- Wire should be galvanised and comply with BS 4102.
- Straining posts should be at least: 125mm top diameter, or 100mm x 100mm cross-section sawn; 2.15 metres long if not set in concrete, or 1.85 metres if in concrete. The spacing between strainer posts should not exceed 150 metres where mild steel line wire is used, or 300 metres for high tensile wire.
- Struts should be at least: 80mm top diameter, or 75mm x 75mm if sawn; 1.9 metres long if not set in concrete and at least 1.6 metres where set in concrete. Struts should be notched into the straining post at an angle of no more than 45 degrees.
- Intermediate posts should be 65mm top diameter, or 75mm x 75mm if sawn, 1.7 metres long, and spaced no further than 3.5 metres apart.

## **26 Fencing: post and wire**

**£2.50/m**

### **General clauses**

Please refer to general clauses for sheep fencing above.

### **General specifications**

Wire fencing must be at least 1.05m high. Use galvanised 4mm mild steel plain or 2.5mm barbed wire, or equivalent as stated in BS 4102 and BS EN 10223.

The number of strands of wire required is not specified but must be 'fit for purpose', for example, if installed to keep cattle in a field it would need to be sufficient to hold them there.

Straining posts must be at least 125 x 125mm square or 100mm top diameter. The straining posts for fences 1.05 m high should be 1.87m long and in all cases they should be set in the ground at least 750mm and at spacing not exceeding 150m.

Struts must be 75 x 75mm square or 65mm top diameter, 1.87m long for fences 1.05m high and set in the ground at least 450mm and mortised into the straining post.

Intermediate posts must be 75 x 75mm square or 65mm top diameter, 1.75m long for a fence 1.05m high and in all cases set in the ground at least 600mm and at a spacing not exceeding 3.50m. Barbed wire must not be used where fencing runs alongside Public Rights of Way, unless this is unavoidable.

## 27 **Electric fencing for seasonal exclusion to watercourses as agreed with PW Catchment Officer**

### **General clauses**

Please refer to general clauses for sheep fencing above.

### **General specifications**

Where fixed fencing is inappropriate, permanent electric fencing systems may be available for seasonal exclusion of stock to watercourses. The number of strands of wire required is not specified but must be 'fit for purpose', for example, if installed to keep cattle in a field it would need to be sufficient to hold them there.

The length and location of the system should be agreed with the PW Catchment Officer and should be used for the purpose of the grant. The system should be available for inspection and kept separate from other electric fencing kits. The equipment should be reserved solely for use at the agreed location.

## 28 **Gateway relocation** **£340/unit**

This option involves the re-location of an existing gate away from high risk areas, such as the bottom of a slope or near a watercourse, to a more appropriate lower risk position to eliminate run-off pathways and reduce the potential for soil erosion, and gapping up the boundary once that original gate has been relocated.

### **General specifications**

- Gapping up should be carried out in the same style as the rest of the boundary under the 'Gapping up of hedgerows to intercept water' and 'Fencing' options above.
- New hanging and shutting posts should be used.
- Where appropriate the original gateposts should be left where they are.
- Track-ways associated with the removal of the original gate should be re-routed and the disused sections made good.
- Any new gates that give access onto highways will need planning permission and you should consult with your Local planning authority before starting any work.
- The materials used to gap up the old gateway should match the character of the rest of the boundary.

## F OPTIONS FOR WATER PROVISION TO PREVENT DIRECT ACCESS TO WATERCOURSES

### 29 Livestock drinking bays

£254/unit

Livestock drinking bays consist of an access ramp excavated into the bank of a watercourse, with a three-sided perimeter post-and-rail fence. The size of the drinking bay will be dictated by the type and number of livestock that need access to drinking water. The access ramp should slope gently down to the water's edge so that livestock can have easy access to drinking water. The in-stream width of water should be sufficient to provide drinking access but prevent animals from standing in the watercourse.

This option is available to restrict livestock access to watercourses where there is no piped water available and where watercourse fencing has been or will be erected.

Provision of bays should achieve environmental benefits by helping to prevent erosion and other damage elsewhere along the bankside and edge of the watercourse but to do this you should not allow livestock sufficient access to damage the river bed or cause pollution.

This item should avoid sites of archaeological or historic importance. You should ensure you have any relevant consents before carrying out work. You must seek guidance from the Environment Agency/ relevant permitting Authority before you commit yourself to the proposed work and before you submit your application. The Environment Agency may charge for the relevant permit.

#### General specifications

- Soil should be excavated to a depth of not less than 150mm or down to a naturally occurring hard surface, the depth of which will vary according to the type of ground.
- The excavated soil should be spread and profiled in the immediate area.
- A hardened surface with a minimum depth of 150mm and consisting of compacted hardcore, scalplings or locally produced shale should prove sufficiently robust to withstand regular livestock movements, prevent poaching and reduce the amount of sediment from entering the stream.
- At the water's edge, some form of kerb (such as 100mm x 50mm tanalised timber) must be in place to prevent the gradual 'creep' of hardcore/scalping into the watercourse. Alternatively, a concrete slab which conforms to the relevant British Standards listed could be used to produce the hard surface. The concrete should have a pronounced tamped finish parallel to the watercourse to prevent animals slipping.
- The fencing erected in conjunction with the drinking bay must comply with the appropriate part of BS 1722. Strainer posts must be used at any corners. All timber should be fully peeled and tanalised or treated with preservative.

### 30 Livestock troughs

£110/unit

### 31 Pipework for livestock troughs

£2.65/m

This option is for the installation of new livestock troughs and associated pipework and provides an alternative to watercourse drinking for livestock. Poaching around feeding and drinking areas can lead to soil damage, as well as stock welfare and pollution problems, particularly during wet periods. To minimise damage caused by poaching, the water trough must be installed on a level hard base. Typically, work would also include the siting of the water trough and connecting pipework for the water supply.

The trough should not be located near watercourses, or areas vulnerable to soil erosion. It is available for use where watercourse fencing has been erected. This item should avoid sites of archaeological or historic importance. You should ensure you have any relevant consents before carrying out the work. This option can be used in conjunction with the hard bases for livestock drinkers option.

### General specifications

- Water troughs must be of galvanised steel, concrete, spray-moulded glass-reinforced cement (GRC) or polyethylene, and have a ball valve and service box. Water troughs must comply with BS 3445 and incorporate a Type AA air gap or Type AUK 1 air gap. The trough must be either connected to a water supply or supplied from a bowser on a regular basis. If you use a mains water supply, you must comply with The Water Supply (Water Fittings) Regulations 1999 (as amended). These regulations aim to prevent the waste, misuse, undue consumption, contamination or erroneous measurement of drinking water and set requirements for the design, installation and maintenance of plumbing systems and water fittings. They are enforced by water companies in their respective areas of supply and you should obtain advice from your local supplier.
- Pipework and fittings for the supply of drinking water to livestock must conform to the appropriate parts of BS EN 12201.
- Pipework must be medium-density blue polyethylene (with a minimum external diameter of 25mm).
- All joints must be made of brass or plastic and be watertight. Please note if located underground or in an inaccessible location then fittings should be of a dezincification resistant material.

Pipework must be buried below cultivation depth and to a minimum depth of 750mm or as determined by your local water supplier.

- When crossing open ditches, the pipe must be covered by a tubular steel guard or sleeve pipe and laid 750mm below the ditch to allow for ditch cleaning.
- When crossing farm tracks, the pipe must be laid on a 75mm bed of sand and then covered by further 100mm of sand before being overlaid by backfill and to a minimum depth of 750mm.

## 32 Watercourse crossings

£300/unit

If livestock and machinery have to access land on both sides of a watercourse it is necessary to cross the watercourse. This may cause increased bacteria levels in the water and/or bank erosion leading to an increased sediment load in the water which can smother out aquatic habitat. Dedicated crossings restrict disturbance to watercourses and surrounding buffer areas and minimise sedimentation of watercourses.

You should consult the Environment Agency before commencing any work. You may require a 'flood defence consent' to work in the watercourse; this will be required even for ditches on farms and is to ensure that a culvert is designed and installed in such a way that the impacts on the stream are minimised.

The Environment Agency may make a charge for the consent.

This item should avoid sites of archaeological or historic importance. You should ensure you have any relevant consents before carrying out the work.

### *Ford/crossing point*

#### **General specifications**

- A ford must include a semi-circular, straight or oblique group of toe stones keyed into the river bed on the downstream edge to form a gravel trap.
- The specific design will depend upon local conditions, but must minimise both erosion and the obstruction of fish.
- The trap allows the natural build-up of gravel and cobbles to form a hard crossing point.
- The stones should be keyed down to a minimum of 600mm below the existing level of the bed or below the known scour level, whichever is the deeper.
- Stones that form the trap should not stand clear of the water during low summer flows, and should not form a weir.
- Fords should usually be 4m wide to allow access for stock and farm machinery.
- The approach slope gradient should not be steeper than 1 in 4.
- The length of the ramp will depend on the slope of the river bank. The steeper the bank the longer the ramp must be.
- The sides of the ford approaches should not be accessible to livestock and should be protected by minor rock revetment on the river side.
- The base of the ramp should be protected to avoid bankside erosion.
- The nature of the protection will be site specific but must be of one of the following types:
  - Rock armouring: cobble-sized rocks should be positioned to provide as flat a surface as possible with gaps filled with coarse gravel or hardcore. The gaps should be tightly filled so that livestock will not be at risk of injury.
  - Coarse gravel/hardcore with retaining boards: If rock cannot be used as the ramp base, coarse gravel/hardcore can be used with treated retaining boards (50mm x 230mm) along the ramp (parallel to river flow) spaced 1m apart. The boards should be held in position by treated posts (100mm x 100mm), 1m apart, driven into the bank and trimmed at an angle (1:4 parallel to slope), 50mm below the line of the boards to avoid tripping. The bed of the ramp should be compacted to provide a stable footing for livestock.

## **G OTHER ITEMS**

### **33 Special projects and non-standard items as agreed with PW Catchment Officer**

Portsmouth Water may be able to fund other capital items and projects not listed above, where there is likely to be a benefit to water quality. Any non-standard items should be discussed with the PW Catchment Officer.

Option G allows farmers and land managers to identify their own preferred improvement options that will protect drinking water quality and other controlled waters, whilst improving the efficiency of their own agricultural practices, or their farmyards. An example list is provided below, however this list is not exhaustive and farmers/land managers can make their own suggestions to the Portsmouth Water Catchment Management team.

- GPS for Precision Farming
- Variable Rate Controller for sprayers and fertiliser spreaders
- GPS and Flow Systems for slurry spreading with cab display/controller
- Measuring nitrogen levels in crops using light reflectance
- Trailing Shoe Slurry System including Macerators
- Dribble Bar for slurry applications
- Shallow Injection Systems for slurry applications
- Seed Drills capable of working through cover crops

SECTION 4

## How to Apply

The Capital Grant Application Form is available to download from the Downs and Harbours Clean Water Partnership website (<https://www.cleanwaterpartnership.co.uk/>) or available from the PW Catchment Officer.

**Key dates for any given agreement year can be found on the Capital Grant Scheme Application Form. Capital grants are not considered to have been agreed unless Portsmouth Water issues a formal agreement letter.**

SECTION 5

## How to Claim

Once you have received a formal agreement from Portsmouth Water you can then submit a claim. A claim form is available from the PW Catchment Officer.

Claims can only be submitted after completion of works/purchase of equipment. Claims must include:

- Supplier invoice for the works/equipment
- Any supporting documents
- Signed declaration
- Farm business invoice to Portsmouth Water

All documents should be sent either by email to the Catchment Management Department email address: [catchment.management@portsmouthwater.co.uk](mailto:catchment.management@portsmouthwater.co.uk) or alternatively by post to the following address for the attention of the Catchment Management Department:

Catchment Management Department  
Portsmouth Water Ltd  
PO Box 8  
West Street  
Havant  
Hampshire  
PO9 1LG