south east water

Catchment Incentive Scheme Handbook

Working in partnership to improve water quality

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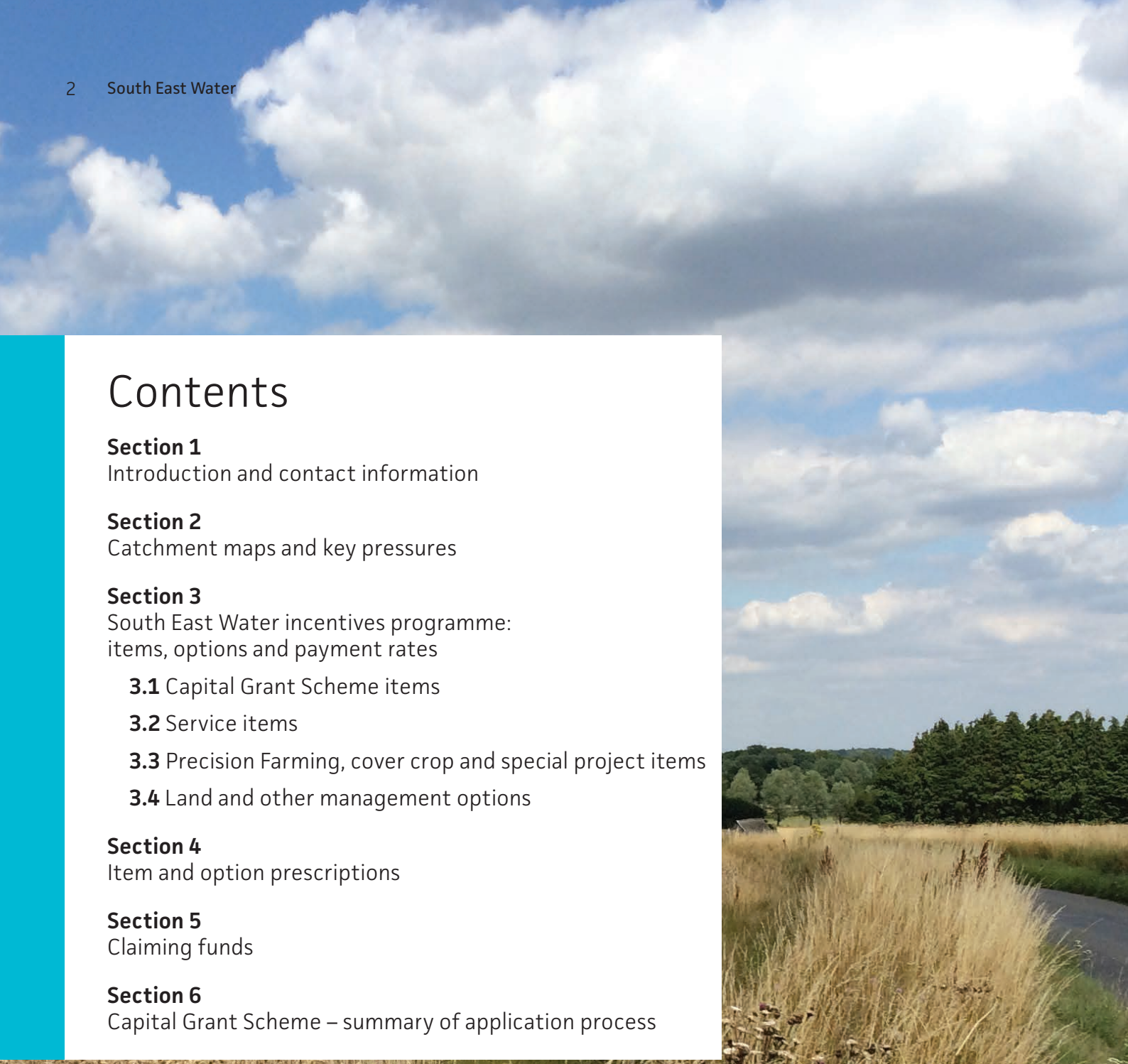


Contents

1. Introduction and contact information

Dedicated South East Water Catchment Advisors are available to deliver targeted and practical advice, both on a one-to-one basis, and through training events / workshops, undertaken jointly in partnership with Natural England's Catchment Sensitive Farming (CSF), to help farmers and land managers reduce losses to watercourses and groundwater bodies and improve on-farm efficiency. In targeted catchments South East Water is able to support holdings with a range of free services and capital grants.

Farmers and land managers in South East Water's drinking water catchments may be eligible for:

- free one-to-one confidential farming advice
- free specialists visits and reports with recommendations tailored to your farm business, e.g.
  - infrastructure audits
  - livestock diet review
  - biobed / biofilter and pesticide handling recommendations
  - water resources audit
  - soil husbandry and nutrient planning advice
- free workshops and events providing up-to-date guidance and advice
- Capital Grants up to £15,000 for capital items and up to £10,000 for land management options per holding (£25,000 if combined)
- funding for a selection of catchment sensitive land management options
- funded and supported land management trial opportunities
- innovation fund (please contact South East Water with your ideas)

This booklet details the advice, capital items and management options that may be available to you. Maps for each of the catchments can be seen on pages 6 and 7.

Grants are available to farmers and other land managers in specifically targeted catchments. Applicants who wish to see if they farm in a targeted area and check their eligibility for any of the items listed in this handbook should contact us in the first instance.

Further details on our catchment areas, and your local catchment advisor, can be found at **southeastwater.co.uk/catchmentmanagement**

You can also email the team at **Catchment@southeastwater.co.uk**

Online documents and forms can be viewed via the following link:
southeastwater.co.uk/grants

Catchment Management office address:

Catchment Management Environmental

South East Water
The Fishing Lodge
Arlington Reservoir
Berwick
Polegate
East Sussex, BN26 6TF

South East Water Ltd.
Registered in England No. 267987
Registered Office:
Rocfort Road, Snodland, Kent, ME6 5AH
ISO 9001 Certified

This booklet is intended as a guide for applicants and does not constitute a legal agreement.

Should a formal offer of a Capital Grant be made terms and conditions will be set out in an offer letter that constitutes an agreement ('Agreement').

Agreed items must be completed to the specifications set out in this handbook. Any deviations from specifications must be agreed in writing with your Catchment Advisor prior to work being undertaken.

Agreements last for up to five years from the date shown in your Agreement, unless otherwise stated.

'Before and after' photographs, 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 South East Water.

If you are a tenant or lease your land or premises, you must discuss your application with your landlord, licensor or land the land owner before you make an application to ensure that 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 agreed Grant period, your Agreement must be countersigned by your landlord or landowner.

Applications for Capital Grant items must be made in consultation with your Catchment Advisor.

2. Catchment maps and key pressures

You may be eligible to apply for a catchment grant if your farm holding is within one of the below catchments.

The Capital Grant Scheme is a competitive scheme; **your chance of receiving an agreement is likely to be higher if you apply for items or options that address the key issue(s) in the catchments where you farm**.

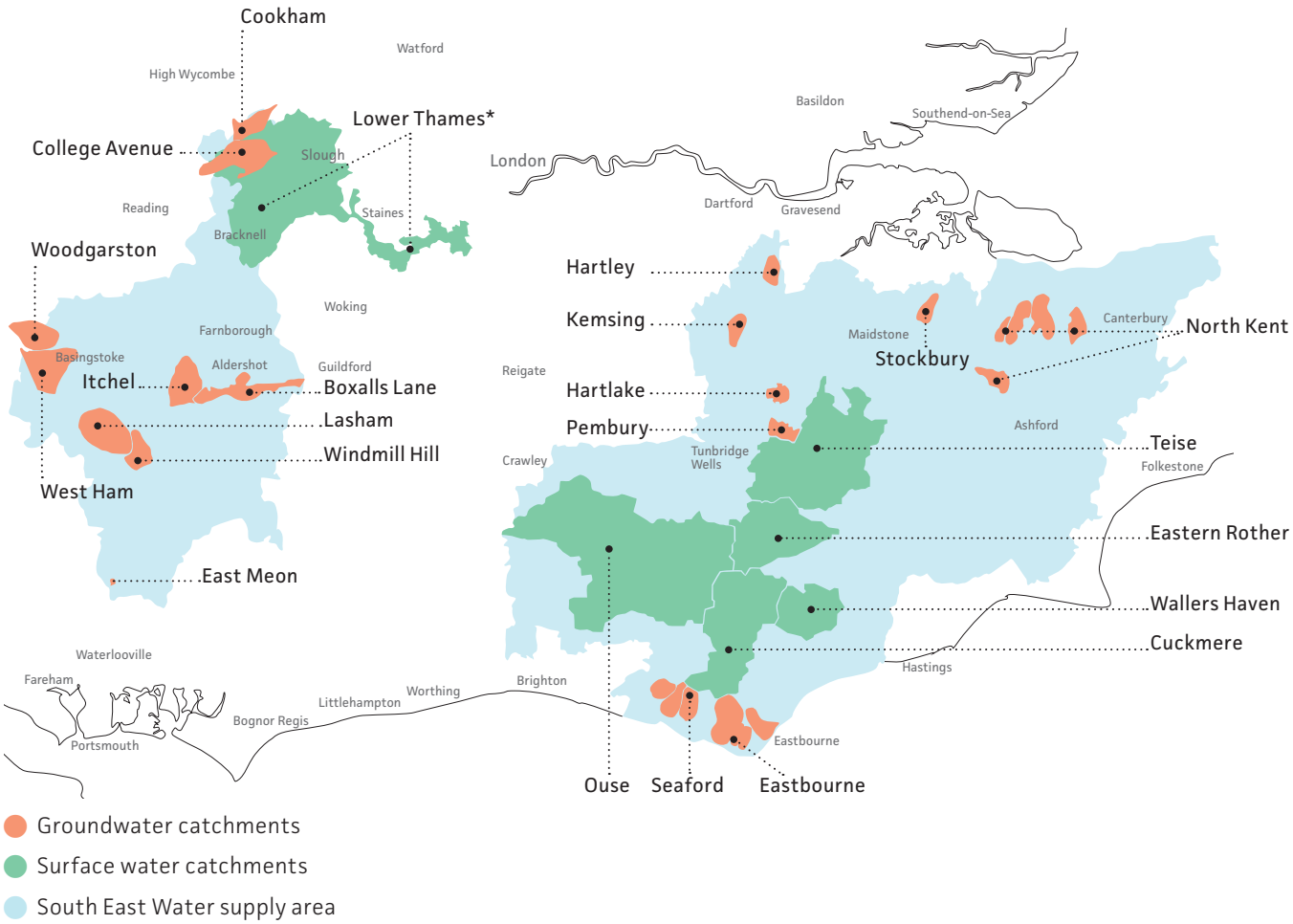
Each catchment has one or more issues that we are particularly keen to address.

You may, however, also apply for items which address other issues. We strongly recommend that all potential applications are discussed with your local Catchment Advisor.

We also welcome ideas for management trials or innovative approaches which address one of the key issues in that particular catchment. See item 41 for more information about this.

For more information please visit **southeastwater.co.uk/catchmentmanagement or contact us at Catchment@southeastwater.co.uk, putting the name of your catchment area in the subject line**.

Catchment areas

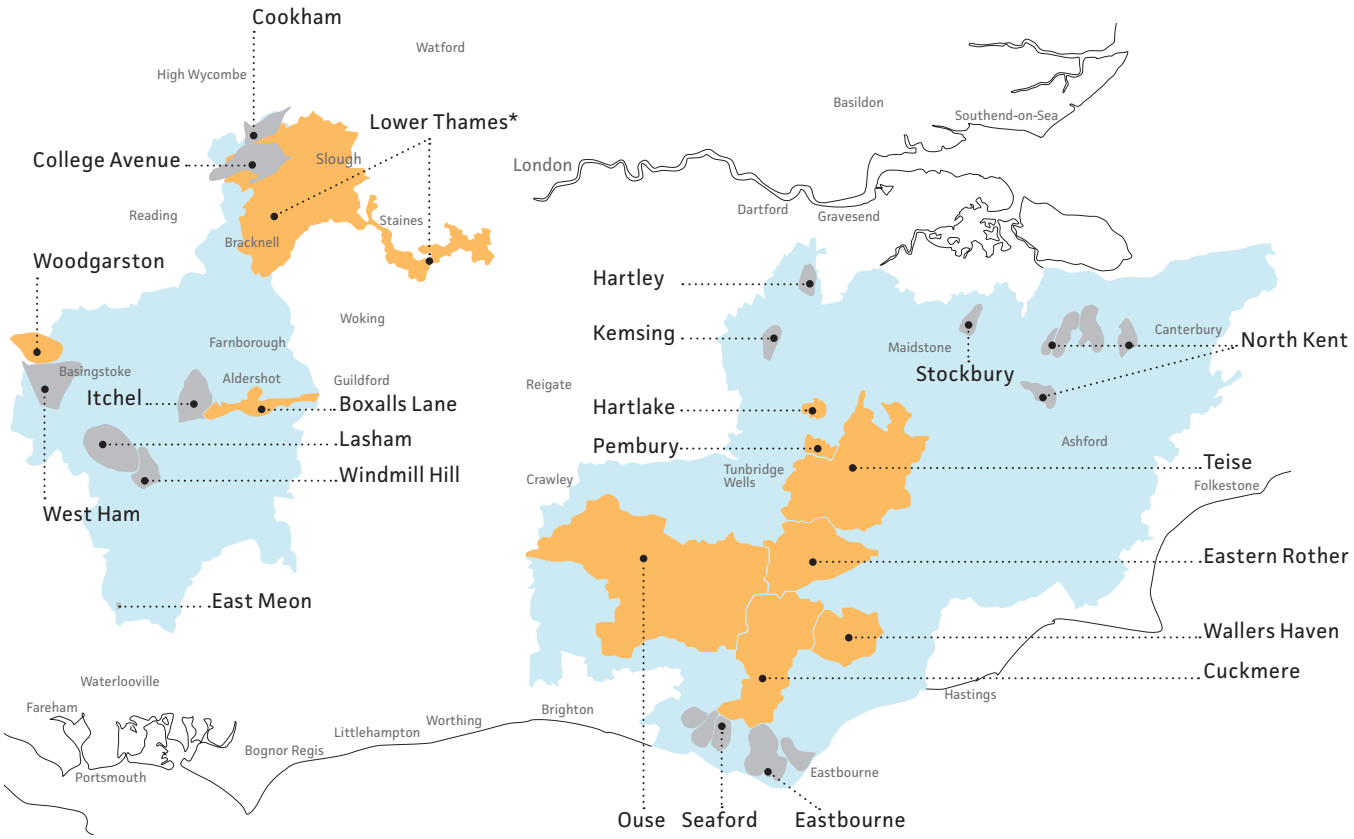


- Groundwater catchments
- Surface water catchments
- South East Water supply area

Our expert Catchment Advisors are available in these areas to offer you a range of free support and advice.

*Drinking Water Protected Area only

Availability of Capital Grant funding



- Catchments in delivery
- Catchments in investigation
- South East Water supply area

Capital Grant funding is available in the yellow areas. Please contact us at **Catchment@southeastwater.co.uk** to discuss which options are available to you.

*Drinking Water Protected Area only

3. South East Water incentives programme: items, 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 per cent of costs. Farm labour may be claimed provided specifications are met. All options applied for must be in line with South East Water's catchment management aims.

3.1 Capital Grant Scheme items

Abbreviations: **T** =turbidity (suspended solids); **P** = pesticides; **N** = nutrients (nitrate and phosphate); **WR** = water resources; **B** = biodiversity.

Option Code	Option Title	Payment rate	Page	Issue targeted
A. Water resources and management				
1.	Yard – underground drainage pipework	£5/m	12	T, N
2.	Concrete yard (to separate clean and dirty water)	£35/m^2	12	T, N, P
3.	Rainwater goods	£12/m	13	WR, T, N
4.	First flush diverters / downpipe filters	£175/unit	14	WR
5.	Rainwater harvesting – above or below ground tanks (e.g. mains-fed for emergency supply)	Up to 50% costs	14	WR
6.	Roofing of yard areas (sprayer washdown / manure storage / livestock gathering / slurry stores / silage store)	Up to 50% costs	15	T, N, P
B. Options for pesticide handling and management				
7.	Lined biobed (option only available with existing or new pesticide handling area)	£75/m^2	20	P
8.	Biofilters	£2100/unit	23	P
9.	Pesticide filling / waste area (e.g. concrete pad)	£40/m^2	25	P
10.	Funded training		26	P
C. Options for management to minimise poaching				
11.	Hard bases for livestock troughs to prevent poaching	£180/unit	26	T, N
12.	Livestock and machinery hardcore tracks	£45/m	27	T, N
13.	Cross drains in or on farm tracks	£750/unit	29	T
14.	Resurfacing of gateways to prevent poaching	£140/unit	30	T, N
D. Options for in-field water management				
15.	Sediment ponds and traps	£12/m^2	31	T, N
16.	Swales	£10/m^2	31	T, N, P
17.	Silt filtration dams / seepage barriers	£200/unit	32	T,

Option Code	Option Title	Payment rate	Page	Issue targeted
18.	Equipment to disrupt tramlines to prevent run-off	£1,500/unit	32	T, N, P
19.	Coir log to collect silt along edge of water bodies	£10/m^2	33	T
20.	Sediment capture mat in waterways	£35/unit	33	T
21.	Sediment fence (incl. wooden posts and staples)	£5/m	33	T
E. Options for boundaries, fencing and gateways				
22.	Hedgerow planting to intercept water	£23/m	34	T, N, P, B, WR
23.	Fencing of watercourses for: new hedgerows, buffer strips, field corners, wet field areas and tracks; sheep fencing	£8/m	34	T, N
24.	Fencing: Post and wire	£6/m	36	T, N
25.	Electric Fencing for seasonal exclusion of watercourses	Up to 50% costs	36	T, N

3.2 Service items

Option Code	Option Title	Payment rate	Page	Issue targeted
F. Options to assist in nutrient management				
26.	Soil sampling, including organic matter and analysis	As agreed with Catchment Advisor	36	N
27.	Manure / slurry sampling and analysis	As agreed with Catchment Advisor	37	N
28.	Spreader calibration	As agreed with Catchment Advisor	37	N
29.	Handheld device for measuring nitrogen levels in winter cereals	£225/unit	37	N

3.3 Precision Farming

Option Code	Option Title	Payment rate	Page	Issue targeted
G. Options for Precision Farming				
30.	Field nutrient variability mapping	As agreed with Catchment Advisor	37	N, P
31.	RTK GPS unit	Up to 50% costs	38	N, P
32.	Support for precision sprayers, spreaders, variable drills and other precision equipment	As agreed with Catchment Advisor	38	T, N, P

3.4 Land and other management options; innovation

All management options must be discussed with your Catchment Advisor prior to application. Some options may be area-specific, or there may be a limit to the amount of land that can be funded under one option.

Option Code	Option Title	Payment rate	Page	Issue targeted
H. Options for land management approaches				
33.	Maize management: grass drilled with maize	£185/ha	39	T, N, P
34.	Maize management: grass drilled at 4-6 leaf maize development stage	£175/ha	39	T, N, P
35.	Maize management: post-maize grass cover	£120/ha	39	T, N, P
36.	Cover crop: sow by 15 September; destroy from: 1 February (no grazing in-between)	£130/ha	40	N, T
37.	Cover crop crimper roller 3m / 6m width	£2,500 / £5,000	41	P
38.	Herbal / legume rich grass leys	£385/ha	42	T, B
39.	Crop substitution / companion cropping	Up to 50% costs	42	T, N, P, B
40.	Arable reversion to grassland with low fertiliser input	£330/ha	44	N, P, T

South East Water strongly encourages proposals of **innovative and creative approaches** from farmers that will help address the main issue(s) of diffuse pollution in the catchment. Please refer to Option 41, below, for any application.

Option Code	Option Title	Payment rate	Page	Issue targeted
I. Special and non-standard items and projects; support for innovation and trials				
41.	Special project or non-standard items, or supporting innovation by farmer, including trials*	As agreed with Catchment Advisor	45	T, N, P, B

*this must help address the principal water issue(s)

4. Item and option prescriptions

Please note: agreed prescriptions will be made available with formal offers of a Capital Grant.

A. Water resources and management

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 though 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/m

General specifications

- the work may include re-organisation of clean and dirty drains, addition of cross drains, catchpits, gullies, 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

2. Concrete yard renewal (to separate clean and dirty water) £35/m²

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

This option would normally be applied for with options A1 and A2 but in some cases existing drainage will be sufficient.

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 that 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 it is first used for that purpose.

You must discuss this option with your Catchment Advisor before applying, and only apply for the area approved by them.

General specifications

- the construction of the upgraded concrete base must not allow silage effluent to escape
- you will 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 concrete supplier 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 concrete supplier; 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

Source: Environment Agency rainwater harvesting guide

3. Rainwater goods
£12/m

General specifications

Both underground and above ground tanks must be used with a first flush diverter if the collected water is to be used for livestock drinking. This can either be an existing diverter or one applied for through this scheme. First flush diverters reduce tank maintenance and ensure cleaner water is captured. An additional filter will usually also be required if the water will be used as livestock drinking water.

- this option is for existing buildings within the farmyard that currently do not have rainwater goods or that 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 system 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

4. Item and option prescriptions continued

- 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 farmed buildings) may be fundable in agreement with your Catchment Advisor

4. First Flush diverters / downpipe filters **£175/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

5. Rainwater harvesting – above or below ground (e.g. mains-fed for emergency supply) **Up to 50 per cent of costs, as agreed with Catchment Advisor**

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 your Catchment Advisor provided they have a guarantee from your supplier and will remain corrosion free for a minimum of five years

6. Roofing of yard areas (sprayer washdown / manure storage / livestock gathering / slurry stores / silage store)
Up to 50 per cent of costs, as agreed with Catchment Advisor

An uncovered yard is vulnerable to polluted runoff in 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 'before' photos with your application and 'after' photos with your claim for this option with 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 that from 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 South East Water may recover money with interest and penalties, or withhold grant aid if the claim has not been paid.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4. Item and option prescriptions continued

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 on inspection the livestock gathering area is found to be used as an animal housing unit, you will be in breach of your agreement and South East 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

4. Item and option prescriptions continued

Roofing of sprayer filling / wash down 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 that the South East 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, biobed or biofilter.

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.

You are reminded that it is your responsibility to seek advice from the Local Planning Authority as to whether or not planning consent is needed for the structure, and from the Environment Agency on relevant permits. You can refer to Schedule 2, Part 6 of The Town and Country Planning (General Permitted Development) Order 1995.

Please note that separate arrangements are required to be made 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 **gov.uk/government/collections/water-discharge-and-groundwater-activity-environmental-permits**

Please note that 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 one metre overhang on each side. The bunded area should be the sprayer transport width (with booms folded) plus two metres, 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

4. Item and option prescriptions continued

B. Options for pesticide handling

The biobed and biofilter options can each be applied for as stand-alone items if an appropriate pesticide filling and washdown area already exists. Alternatively, they can be applied for with the pesticide filling area as part of one application. You may propose a different specification for a biobed or biofilter where a bespoke solution is preferable. A panel will assess this bespoke design and a higher payment rate (up to 50 per cent of cost) will be considered.

7. Lined biobed (option only available with existing or new pesticide handling area) £75/m²

Biobeds 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. Biofilters are container-based biobeds 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 biobed, and 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 biobed 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 biobed 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 commence any work. Biobeds may not be appropriate for all situations and there will be some locations that are not suitable.

Before installing a biobed you MUST carefully 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 biobed or biofilter. However, you must not construct the biobed within 10m of a watercourse, or 50m from a spring, well or borehole. It also has to be sited 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 biobed site in terms of risk to ground water, you should follow the following process to find the SPZs that have been mapped in your area:

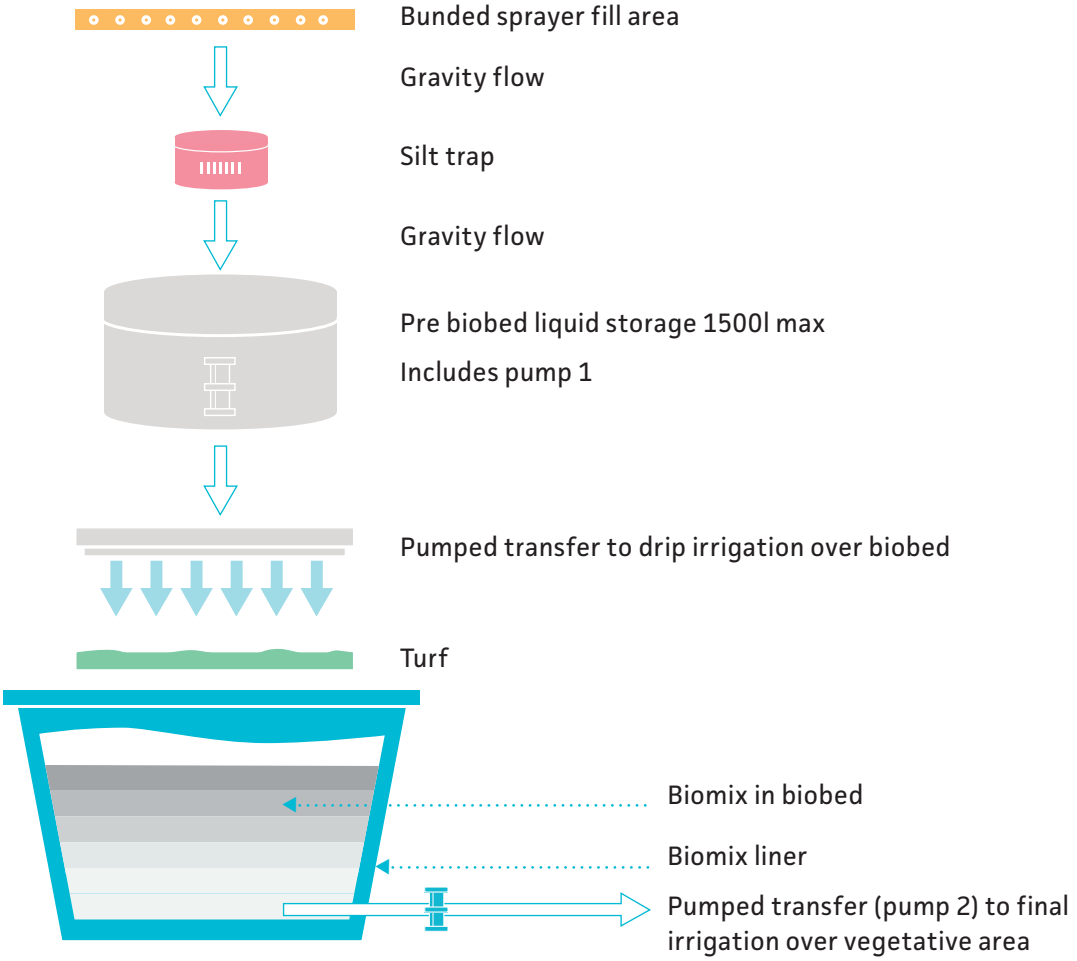
1. Go to the MAGIC maps website: **magic.defra.gov.uk/MagicMap.aspx**
2. Enter your postcode in the search box in the top left hand corner
3. Under the 'Table of Contents' tab on the left hand side, tick Land based designations – Non-statutory – Source Protection Zones merged (England)
4. The map will show whether your proposed location falls within one of the Source Protection Zones

If the proposed location of the biobed falls within a SPZ 1 or 2 you need to contact the Environment Agency to assess the suitability of installing a biobed in that area.

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 to establish if works are proposed within 50m of the proposed site.

Indirect (Offset) Lined Biobed

Plan View



4. Item and option prescriptions continued

New excavations must avoid areas of archaeological or historic interest

Further information and guidance on installing biobeds or a biofilter and pesticide handling and disposal facilities can be found on the Environment Agency website at **gov.uk/government/organisations/environment-agency**, or from the Environment Agency's helpline (03708 506 506) or the following website: **voluntaryinitiative.org.uk**

Further information is also available from your Catchment Advisor.

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 well compacted hardcore over which 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
- 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 1.5m

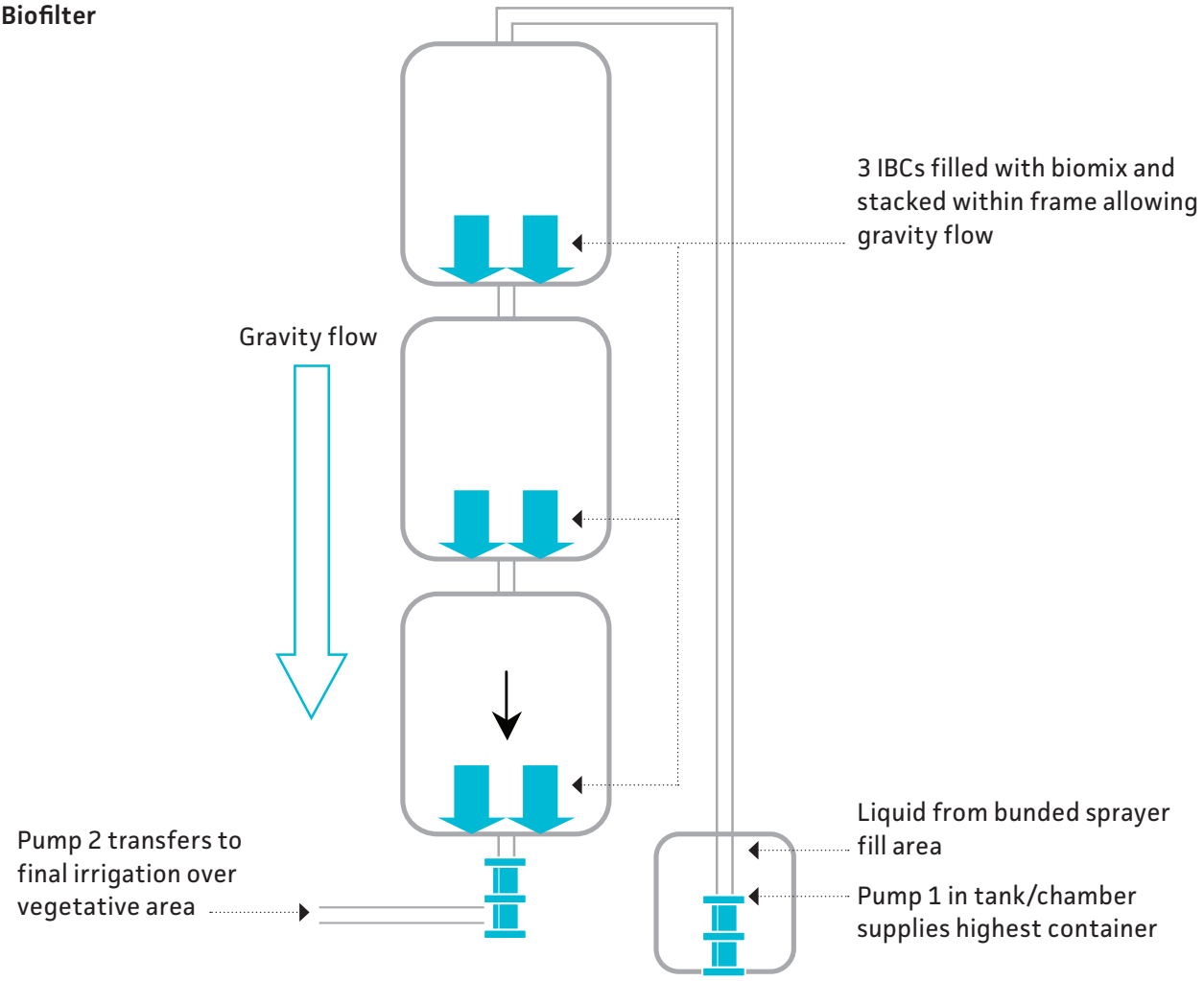
8. Biofilters
£2,100/unit

A biobed may not be suitable for all sites, particularly where space is limited or volumes of pesticide washings are smaller. In these situations a biofilter may be more appropriate. It is a simpler construction than a biobed 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 biobed. It is constructed by using three Integrated Bunded Containers (IBCs) stacked vertically. A fourth IBC is needed as an initial storage tank adjacent to the three IBCs in a stack.

General specifications

- follow the guidance provided by CSF and the Voluntary Initiative via this link: **voluntaryinitiative.org.uk/media/2149/catchment-sensitive-farming-guide-biofilter-11-january-2018.pdf**
- consideration should be given to the site and safety in operating the biofilter e.g. away from thoroughfares

Biofilter



4. Item and option prescriptions continued

9. Pesticide filling/waste area (e.g. concrete pad)
£40/m²

General specifications

- 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 well 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
- 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 1500 litres), from which the pesticide washings will be pumped and directed to a biobed or biofilter 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 1

4. Item and option prescriptions continued

10. Funded training
£ As agreed with Catchment Advisor

In order to promote best practice and the sustainable use of pesticides, South East Water may be able to fund the training element of both the PA1 (foundation module) and PA4s (pellet application) training. Candidates are expected to cover the cost of the assessment.

This option is aimed at farmers and farm staff in South East Water's surface-water drinking water catchment.

This option must be agreed with your Catchment Advisor in advance of the training.

C. Options for management to minimise poaching

11. Hard bases for livestock troughs to prevent poaching
£180/unit

Placing livestock drinkers on hard bases will help to reduce poaching. The work should cover the associated groundwork, construction of a hard surface and the re-siting of livestock drinkers and feeders.

This option is for the hard base only and can be used where access has been restricted to water.

General specifications

- the soil should be excavated to a minimum depth of 150mm or down to a naturally occurring hard surface, the depth of which will vary according to the type of ground
- the excavated area around the drinking trough and / or feeder should extend to a minimum width of 2.5m. Prior to placing the hardcore; a geotextile membrane should be laid over the excavated area
- the hardcore should then be well compacted by rolling to a minimum depth of 150mm
- if there is a requirement for a deeper thickness of hardcore, each successive layer should not exceed 150mm thickness and should be well compacted
- the finished hardcore area should be blinded with at least 50mm of a suitable blinding material
- timber boards will provide an edge to the hard base to help retain the hardcore. The livestock drinker and / or feeder can then be relocated to the hardstanding

12. Livestock and machinery hardcore tracks £45/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.

The installation of cross drains or sleeping policemen in appropriate locations is essential. Such drains could be linked up with a sediment trap to prevent excess runoff from contributing to localised flooding.

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:

1. **Using crushed bricks, concrete, rocks and aggregate**
2. **Using road planings and rubble to build a track, road or car park**

The installation of cross drains or sleeping policeman 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 2.4m 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**

4. Item and option prescriptions continued

- overlay the excavation with a geotextile membrane (see notes below) and backfill with local stone or coarse scalpings 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
- in general, tracks on firm shale and 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, 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 scalpings. The back of the machine bucket can be used to press and therefore secure the sleeper in the ground

13. Cross drains in or on farm track
£750/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 your Catchment Advisor. 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
  - tamper 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

4. Item and option prescriptions continued

14. Resurfacing of gateways to prevent poaching
£140/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^2. 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

The options in this section are all related to slowing the flow of water in catchments. Slowing the flow of water allows sediment to settle, and biological activity to break down pollutants before they reach watercourses. Catchments that are better able to hold water will also be more likely to reduce peak river flows, and therefore the risk of flooding.

15. Sediment ponds and traps **£12/m²**

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

16. Swales **£10/m**

Swales are shallow ditches or channels which can help to remove nutrients, pesticides and sediment from water by slowing the flow of lightly contaminate water across the land before it reaches a discharge point.

As water is held back in the swales, microbial action reduces the pesticide and nutrient load, and sediment is allowed to settle.

General specifications

Either follow the design specified by your Catchment Advisor or construct the swale as follows:

- 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 two 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

4. Item and option prescriptions continued

- 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 and consist of a multi species grass mix such as creeping red fescue (70%), smooth meadow-grass (20%) and creeping bent (10%)
- check dams should be located at regular intervals along the swale

17. Silt filtration dams / seepage barriers £200/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

- 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

18. 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 specifications

- in consultation with your Catchment Advisor: 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 your Catchment Advisor

- 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 South East Water or your Catchment Advisor. Receipted invoices for purchase and bank statements should be kept and produced upon inspection

19. Coir log to collect silt along edge of water bodies
£10/m²

The purpose of coir logs is to provide erosion control along the edges of watercourses, particularly where the risk of erosion is imminent. This is intended as a temporary or additional measure while the main causes of erosion are investigated and addressed.

General specifications

- the logs should be made up of coir fibre and may be unplanted or planted with UK native species. They are designed to vegetate rapidly if unplanted
- consult with your Catchment Advisor about the ideal placement of coir logs to address the erosion issue
- logs should be installed at the water line to prevent water movement from further eroding the banks
- coir logs are designed to biodegrade over a number of years and should be left in situ. They will leave behind a stabilised bank

20. Sediment capture mat in waterways
£35/unit

This is intended as a temporary or additional measure while the main causes of erosion are investigated and addressed.

This payment rate is based on a size of 1.20m x 3m; please discuss different sizes with your Catchment Advisor. Up to 50 per cent of the cost price may be provided.

General specifications

- mat is installed on river bed during or prior to activities causing run off or soil erosion
- mat will capture silt in the natural fibre matrix to prevent its suspension in the watercourse
- the mat must be 100% biodegradable

21. Sediment fence (including wooden posts and staples)
£5/m

This is intended as a temporary or additional measure while the main causes of erosion are investigated and addressed.

General specifications

- silt or sediment fencing can be erected to create a vertical barrier to contain soil on a field
- place at the end of an area vulnerable to erosion, such as a low field corner
- ensure you trench in the uphill side of the fence and install stakes on the downhill side
- place the end barrier up-gradient to help to contain runoff within the sediment fencing area
- do not use as a stand-alone solution; consult with your Catchment Advisor about more permanent ways to address the issue

4. Item and option prescriptions continued

E. Options for boundaries, fencing and gateways

22. Hedgerow Planting to intercept water **£23/m**

General specifications

- prepare the ground along a 1.5m 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, 450-600mm 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
- this option may also be used for gapping up short sections of hedge

23. Fencing of watercourses for: new hedgerows, buffer strips, field corners, wet field areas and tracks; sheep fencing **£8/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 tantalised 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 your Catchment Advisor.

All fencing options include payment for posts.

General specifications

- the fence must be at least 1.05m 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; 2.15m long if not set in concrete, or 1.85m if in concrete. The spacing between strainer posts should not exceed 150m where mild steel line wire is used, or 300m for high tensile wire
- struts should be at least: 80mm top diameter, or 75mm x 75mm if sawn; 1.9m long if not set in concrete and at least 1.6m 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, 1.7m long, and spaced no further than 3.5m apart

4. Item and option prescriptions continued

24. Fencing: Post and wire
£6/m

General clauses

Please refer to general clauses under section 23.

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 125mm x 125mm square or 100mm top diameter. The straining posts for fences 1.05m 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 75mm 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 75mm 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

25. Electric fencing for seasonal exclusion to watercourses
Up to 50 per cent of costs, as agreed with Catchment Advisor

General clauses

Please refer to general clauses under section 23.

General specifications

- where fixed fencing is inappropriate, permanent electric fencing systems may be available for seasonal exclusion of stock to watercourses
- electric fencing may also be used to ensure stock are kept away from gateways to avoid poaching of areas that could lead to run-off into 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 your Catchment Advisor 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 kit should be reserved solely for use at the agreed location

F. Options to assist in nutrient management

Good nutrient management is essential to running an efficient and profitable farm business. In addition, losses of nutrients can have a detrimental impact to surface and ground waters.

26. Soil sampling including organic matter
£ As agreed with Catchment Advisor

South East Water may be able to fund soil sampling on both arable and grassland farms to assist in the management of nutrients on farm.

- standard sampling will include P, K, Mg, pH and organic matter, with soil analysis
- where nitrates are of particular concern, limited Soil Mineral Nitrogen sampling may also be paid for

This service must be agreed in advance with your Catchment Advisor.

27. Manure/slurry sampling and analysis
£ As agreed with Catchment Advisor

South East Water may be able to fund manure and/or slurry analysis to assist in the management of nutrients on farm.

This service must be agreed in advance with your Catchment Advisor

28. Spreader calibration
£ As agreed with Catchment Advisor

South East Water may be able to fund calibrations of manure, slurry and inorganic fertiliser spreaders to assist in the management of nutrients on farm.

This service must be agreed in advance with your Catchment Advisor.

29. Handheld device for measuring nitrogen levels in winter cereals
£225/unit

This device measures chlorophyll content in leaves quickly and accurately through reflection to provide a measure of nitrogen content. The purpose of the device is to enable farmers to apply the most appropriate amount of nitrogen, at the right time.

General requirements

- the device is intended for use throughout the growing season at regular intervals to monitor crops
- the device has the ability to detect changes in leaf nitrogen content before this is visible to the naked eye; this should therefore aid in the application of nitrogen only when required

G. Options for precision farming

30. Field nutrient variability mapping
£ As agreed with Catchment Advisor

This includes soil sampling (with a minimum of one sample location per hectare – total area to be agreed with your Catchment Advisor), the creation of maps showing how key nutrients and pH are distributed across each field.

When used with precision farming equipment, nutrient mapping can result in reduced fertiliser and/or lime costs, increased yield where nutrient deficiencies or acidity are identified and addressed, and reduced environmental impact from nutrient leaching as appropriate amounts of nutrients are applied.

General requirements

- orders must be made through Catchment Advisors, who will have a right to view the data in order to understand catchment issues and give appropriate advice. Catchment Advisors will not share the data with any other business or government agency
- the soil sampling and analysis package will include data for use with farm software, interpretation and recommendations including calculations for future cropping

4. Item and option prescriptions continued

31. Real Time Kinematic (RTK) GPS unit
Up to 50 per cent of costs, as agreed with Catchment Advisor

This is a standalone GPS unit with automatic field boundary measurement and field recognition. The use of an RTK unit can increase the accuracy of GPS systems by transmitting its permanent position to the tractor which then continually corrects its position within the field. This allows for variable rate applications to be made, ensuring the optimum amount of nutrients or herbicides are applied.

General requirements

- must have a minimum capability of straight and curved guidance modes and be capable of linking to implement control and auto steer
- must be used with NVZ mapping and Normalized Difference Vegetation Index (NDVI) in order to be an effective tool for precision farming

Source: Prim Duplessis

32. Support for precision sprayers, spreaders, variable drills and other precision equipment
£ As agreed with Catchment Advisor

H. Options for land management approaches

The available maize management options aim to reduce the risk of soil erosion and run off associated with continuous maize growing in particular. These options are especially well suited to those catchments where turbidity is a concern, but may also help to reduce the levels of phosphates, nitrates and pesticides being lost from bare fields over winter

Cover crops are to be used in areas targeted for reducing nitrate losses over winter in groundwater and surface water catchments targeting nitrate use efficacy improvements.

Three different part-funded cover crop options are available; see following details.

Cover crops are an effective method of retaining soil residual nitrates over winter, where no other cover would normally be established before spring crops. Residual nitrates left in the soil post summer cash crop harvests are often lost to the environment over winter, as nitrate is highly soluble in water. By establishing a cover crop, a proportion of these residual nitrates can be retained and when destroyed, recycled back into the soil where it can be used by subsequent crops. Cover crops not only help retain nitrates but can also help build organic matter levels in soil, help prevent soil erosion, improve soil water availability and suppress weeds.

Careful consideration should be made when selecting an appropriate cover crop and agronomic recommendations should be taken into account to avoid disease and pest carry-over. We strongly advise that cover crop mixes which include brassicas are not used if oil seed rape or other brassicas are included in the rotation and that cereals are avoided in the mix when preceding a spring cereal crop. Make sure you select a cover crop which will work with you and use a variety of mixes if necessary.

33. Maize Management: Grass drilled with maize
£185/ha

General specifications

- establish grass at the same time as maize in the spring at a rate of 20kg/ha (8kg/ac)
- grass should be established in strips 15cm away from the maize to avoid competition and yield reduction
- a fescue mix is usually best suited for planting at this stage as it will not be too vigorous in its early growth stages
- retain the grass cover until at least 15 February
- if grass growth is strong, light grazing may be carried out during winter

34. Maize management: grass drilled at 4-6 leaf maize development stage
£175/ha

General specifications

- establish a grass crop by inter-row sowing in the established maize crop at a rate of 20kg/ha (8kg/ac)
- the grass should be drilled into the maize crop (after the last herbicide application has gone on) at around the four to six leaf stage (normally around mid-June)
- grass should be established in strips 15cm away from the maize to avoid competition and yield reduction
- drilling rather than broadcasting the seed is strongly recommended to achieve best results
- ryegrass or a mix of ryegrass and fescue is usually best suited to planting at this stage
- retain the grass cover until at least the 15 February
- if grass growth is strong, light grazing may be carried out during winter

- under this option, you must not be receiving any funding from other schemes, including payment for maize management under Environmental/Countryside Stewardship

35. Maize Management: post-maize grass cover
£120/ha

General specifications

- harvest maize by 1 October
- sow grass by the 15 October at a rate of 37kg/ha (15kg/ac)
- ryegrass or a grass mix with a high proportion of ryegrass is usually best suited for planting at this stage as it will be vigorous enough to grow quickly in the autumn
- retain the grass cover until at least 15 February
- if grass growth is strong, light grazing may be carried out during winter

4. Item and option prescriptions continued

36. Cover crop: sow by 15 September; destroy from 1 February
£130/ha

A conventional cover crop mix, established as early as possible and destroyed the end of February or up to six weeks before spring crop establishment. Cover is encouraged to be established as early as possible and destroyed as late as possible to ensure maximum nutrient retention and resource protection.

A flat rate of £40 per hectare will be paid to cover establishment and destruction. In addition, up to £35 per hectare will be paid to cover the cost of seed.

General specifications

- sow the cover crop no later than 15 September (but ideally in August; the earlier a cover crop is established the more successful it is likely to be and the greater the biomass produced will be) and must remain in the ground as long as possible
- destroy from 28 February or six weeks before sowing a spring crop, whichever is earliest
- good ground cover must be maintained throughout the winter until 28 February or six weeks before spring sowing

- grazing is only permitted as a cultural destruction method when grazed within six weeks of an anticipated spring crop sowing date; cover should not be thinned before this date. If earlier grazing is planned, consider option 41 (special project)
- select a suitable cover crop mix of at least two varieties (ideally three or more) that will work within your farming system. You can do this either by purchasing pre-mixed seeds or by mixing the seeds yourself
- at no point should any manures or fertilisers be applied to the cover crop
- cover crops must be destroyed by using chemical and / or cultural techniques only (grazing, crimping, rolling, frost, topping and/or ploughing)
- cover crops funded through this scheme must not be supported with funding from other schemes, including catch / cover crops funded through Environmental Focus Areas (EFAs) and / or Environmental / Countryside Stewardship. Note that EFAs may be phased out

Management suggestions:

- establish by drilling or broadcasting as early as possible
- sow at a suitable rate to establish a dense cover
- use a seed mix with varying root depth and structures to allow efficient capture of nitrates through the soil profile
- some examples of cover crop varieties could include:
  - Oil radish – good nutrient retention, strong root which can break through compacted soil
  - Phacelia – reliable fast establishment, fibrous root system good for soil structuring, good surface nutrient capture and weed suppression
  - Mustard – reliable fast establishment, good ability to extract nutrients in upper profile, low seed cost, but must not be used when growing brassicas
  - Vetch – fast growing, with ability to catch and fix nitrogen
  - Black Oat – fast establishment, large fibrous roots, reduce soil erosion, frost sensitive
  - Berseem Clover – quick growing with a long root; nitrogen fixing

Please consider the following cash crop when selecting cover crop mixes; some varieties can in combination lead to disease susceptibility and transfer.

37. Cover crop crimper roller – 3m / 6m **£2,500 / £5,000**

This equipment is designed to roll over, and thereby bruise and damage, a cover crop to aid in its decomposition.

The purpose of funding crimper rollers is to help farmers to try an alternative to terminating cover crops with herbicides and, as such, we expect at least one dedicated area on farm where the crimper roller is used instead of herbicides.

General requirements

- six metre crimper rollers may be mounted to either the front or the back of a tractor; please note that some rollers will be too heavy to push safely and should only be towed

The equipment must always be used in line with the manufacturer's guidance.

4. Item and option prescriptions continued

38. Herbal / legume-rich grass leys £385/ha

This option is intended particularly for sensitive groundwater areas with nitrate pressures, or on land at high risk of soil erosion. This option, once established, could be repeated for a further year or more, based upon agreement. The initial period is for a minimum of two years.

General specifications

- establish a mixed sward of grasses, legumes and herbs on to a firm, clean, fine seedbed. Successful establishment is most likely during late summer / early autumn
- maintain the agreed area for a minimum of two years or as agreed
- manage the sward by cutting or grazing
- do not use pesticides, except herbicides to spot treat or weed-wipe invasive non-native species, soft and hard rush, nettles, bracken or injurious weeds (ragwort, spear thistle, creeping thistle, broad-leaved dock or curly dock)
- do not choose fields with a high weed burden for this option
- do not use inorganic fertilisers containing nitrogen

Management suggestions:

- the sward should contain a mix of grasses, legumes, herbs and wildflowers for greatest benefit to soil structure, nitrogen uptake and pollinators
- leave the sward to rest for at least five weeks between 1 May and 31 July so that the majority of red clover flowers are available for pollinators

39. Crop substitution / companion cropping Up to 50% of costs,as agreed with Catchment Advisor

This option offers support for implementing crops that support reduced agricultural inputs such as pesticides and nutrients. The option helps carry the financial risk of taking up and or trialling alternative crops to those already within your conventional rotation.

(a) Crop substitution

This option looks to cover the income forgone by selecting a lower input crop, compared to that which would normally be grown in the rotation. This could include lower input crops such as quinoa, buckwheat, old varieties of wheat, and pulses, replacing high input crops such as Winter Oil Seed Rape and Milling Wheats.

General specifications

- establish a winter or spring crop, which requires either reduced pesticide or nutrient input compared to crops already within your rotation
- the crop selected should be an annual crop; if a perennial crop is being considered please look at the option 41 (special project)
- manage the crop through the growing season, applying appropriate nutrition and agrochemicals relevant to the crop where appropriate
- harvest the crop at the end of the growing season

To calculate the offer we will need:

- a rationale for using a substitution crop; what input/(s) will be reduced, what crop will be replaced in the rotation
- evidence of the average yield of the crop the substituted crop will replace in the rotation
- evidence of yield and price per tonne of harvested crop

Management suggestions:

- ensure that there is an appropriate market available for the crop grown
- ensure you have the correct equipment to establish, manage and harvest the substituted crop (we cannot include new equipment cost into the substitution payment)
- select a crop which will maintain or add diversity to your rotation and comply with the 3 crop rule

4. Item and option prescriptions continued

(b) Companion cropping

Companion cropping involves growing at least 2 crops alongside one another or in close proximity for at least one mutual benefit to one of the crops. This option could be used to manage pests, pollination, provide habitat beneficial insect, increase crop productivity or supply crop nutrition. The payment will be calculated based on income forgone by growing a cash crop alongside a companion crop.

This could include two harvestable crops being grown in the same field, or a sacrificial crop grown in strips, around or mixed in with the cash crop, which provides a perceived benefit.

General specifications

- establish a spring or winter crop along with one or more companion crops. These can be established at different times dependent on establishment timings and cultivations
- establish the companion crop in strips, inter-sown or in blocks with the cash crop
- manage the crop and companion crop appropriately through the growing season, applying sufficient nutrition and or agrochemicals when appropriate
- where the companion crop is sacrificial, it can be destroyed at an earlier date to the cash crop, when its main use has been surpassed or begins to compete with the cash crop
- harvest the cash crop(s) at the end of the growing season

To calculate the offer we will need:

- a rationale for using a companion crop; what input/(s) will be reduced
- evidence of the average yield of the cash crop prior to growing with the companion crop
- evidence of yield(s) and price(s) per tonne of harvested crop
- cost of companion crop seed, establishment and destruction (if required)

Management suggestions:

- ensure that there is an appropriate market available for the crop grown and that the cash crop can be separated from the companion crops or another cash crop
- ensure you have the correct equipment to establish, manage, and harvest the cash crop(s). (We cannot include new equipment cost into the substitution payment)
- look to avoid companion crops which may transfer diseases or pests to the cash crops sown with the companion crop and within the wider rotation

Examples of possible companion cropping

- oils seed rape with clover / field beans / onions / spring peas
- wheat with clover / vetch / beans
- cereals with peas
- spring beans with oats

40. Arable reversion to grassland with low fertiliser input
£330/ha

This option is particularly relevant to areas with nitrate as the main pressure.

General specifications

- for use in arable fields at high risk of soil erosion and / or nutrient losses
- establish a grass sward by 1 October using a seed mixture of at least five species
- maintain the grass sward in place for at least 24 months
- exclude all livestock from 1 October to 15 March
- livestock manures may be applied to supply up to 100kg of total nitrogen per hectare per year – where livestock manures are not used, nitrogen fertiliser can be used to supply no more than 50kg/ha of total nitrogen per year

- do not use pesticides, except for herbicides to weed wipe or spot treat injurious weeds, invasive non-native species, nettles or bracken
- do not apply any manure or fertiliser between 15 August and 1 February
- supplementary feed except for mineral blocks (non-energy based)

I. Options for land management approaches

41. Special project or non-standard items, or supporting innovation by farmer, including trials*
£ As agreed with Catchment Advisor

We want your help in solving some of the issues we are facing in your local surface water / groundwater catchment. Farmers have proved to be great innovators, so if you have an idea for an on-farm improvement that is not on the above list that is likely to help with South East Water's catchment management aims we would like to hear about it. Please speak to your Catchment Advisor, who will be happy to discuss your ideas with you and how they fit with our priorities in the area that you farm, although we may also choose to fund projects that address a wider range of environmental concerns.

South East Water would consider funding 50 per cent of the cost of your project up to a maximum of £10,000. Funding will cover both machinery you make and / or techniques that you use. Note: the innovation does not have to be brand new; it could be one used e.g. in another country but not yet adopted to any significant level in the UK.

Examples of what we may fund include:

- inter-row hoeing to reduce the amount of pesticides used
- companion planting in oilseed rape to reduce the incidence of flea beetle and the amount of pesticides used

- on-farm leak detectors
- zero cultivation / no-till to potentially reduce inputs and costs, improve soil health and improve local water quality
- longer term cover / break crops to reduce Nitrogen inputs
- increasing biological controls for pesticide management and reducing pesticide use

Projects we have funded in the past include:

- a wetland system to contain and filter lightly polluted yard water
- a ramp system to enable transportation of muck directly onto a trailer and avoid storage next to a sensitive area
- rainwater goods linked to a sprayer filling tank

*this must help address the principal water issue(s)

Section 5: Claiming funds

Capital Grants and funding for land management are not considered to have been agreed unless South East Water issues a formal agreement letter.

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

- farm business invoice to South East Water
- signed declaration
- any supporting documents

Information about how South East Water treats VAT is on page 5 of the Application Form. This is dependent on whether your business is VAT registered or not.

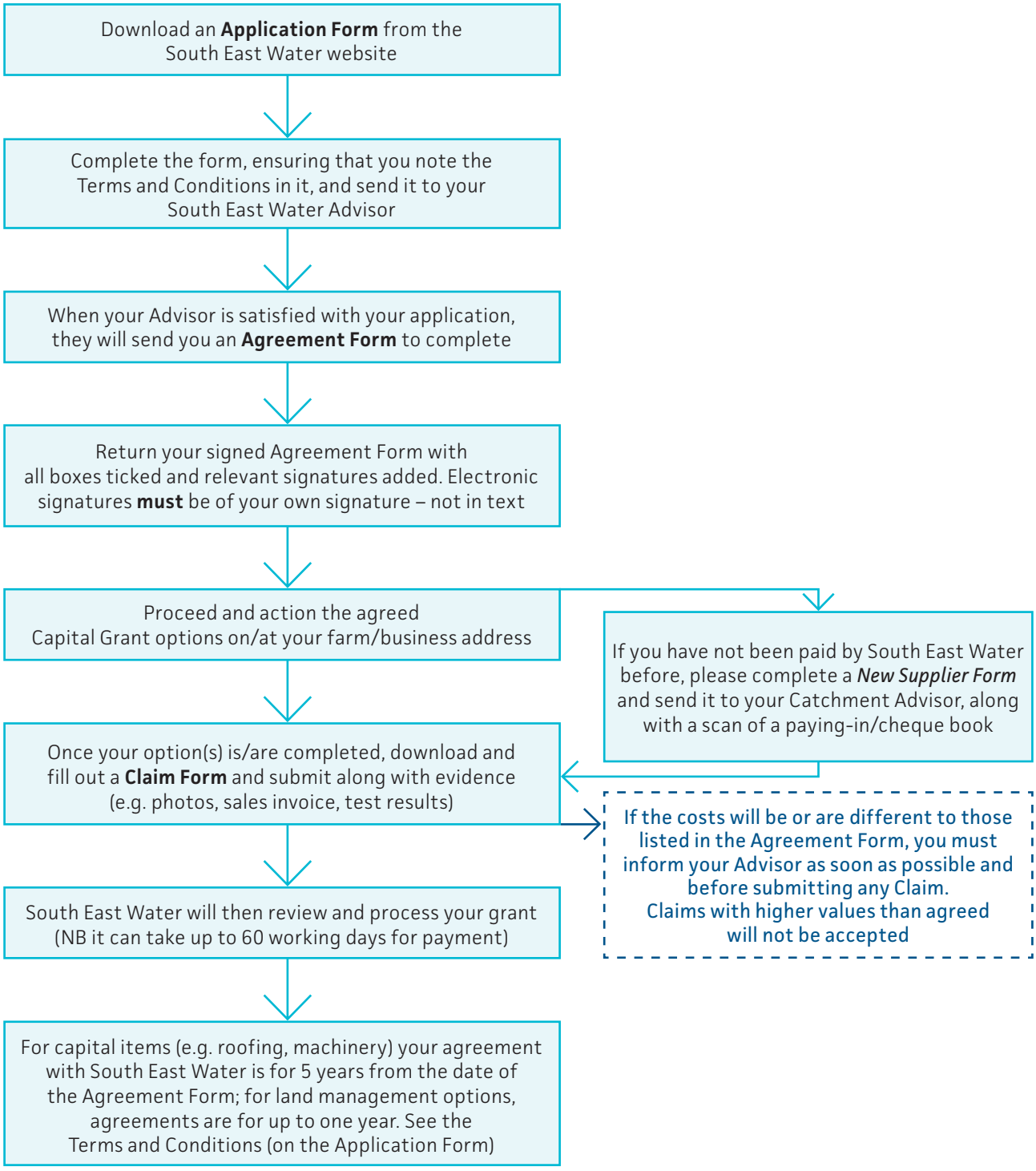
Full Terms and Conditions of the scheme are on the last page of the same form.

Invoicing South East Water and other information about making any claim can be found on the Claim Form.

The application process has been designed to be completed electronically via fillable pdfs and email but hard (paper) copies are still permitted.

The application process is illustrated on the next page.

Section 6: Capital Grant Scheme – summary of application process



Conditions:

1. Forms will not be accepted if they are not signed and/or relevant boxes not ticked

2. If you choose to scan any form, please ensure that you scan and return the ***whole document as one***, including any blank/unfilled pages (even if they are not needed). Single pages will not be accepted

3. If there are any changes in items, costs and circumstances you will need to inform your Advisor as soon as possible

Get in touch

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