STEPHEN WILSON
PARTNERSHIP LTD

Chalvington Barn, Unit C Dittons Business Park, Dittons Road
Polegate, East Sussex. BN26 6HY.

Sustainable Drainage Systems Maintenance Plan

for

Fairfield Cottages, Cowfold, Sussex

E9395

STEPHEN WILSON PARTNERSHIP LTD

DOCUMENT CONTROL SHEET

Project Name: Fairfield Cottages, Cowfold, Sussex

Project Number: E9395

Client: Sunninghill Construction Co. Ltd

Report Title: Sustainable Drainage Systems Maintenance Plan

Reference: 9395-SWP-XX-XX-RE-C-9503

[redacted]

Signed by.....
Craig Searle (BEng Hons)
Civil Engineer

[redacted]

Countersigned by.....
James Maddin (BSc Hons)
Civil Engineer

FOR AND ON BEHALF OF STEPHEN WILSON PARTNERSHIP

Date: February 2025

Rev: 1

NB: The copyright at all times remains with STEPHEN WILSON PARTNERSHIP

Document Issue Record

Rev	Date	Description	Prepared	Reviewed	Approved
1	21.02.2025	First Issue	C Searle	J Maddin	D Giles

STEPHEN WILSON PARTNERSHIP LTD

Contents Page

1 INTRODUCTION 2

1.1 INTRODUCTION 2
1.2 TERMS OF REFERENCE 2

2 DRAINAGE STRATEGY 3

2.1 SURFACE WATER DRAINAGE STRATEGY 3
2.2 FOUL WATER DRAINAGE STRATEGY 3

3 MAINTENANCE REQUIREMENTS 4

3.1 GENERAL 4
3.2 MAINTENANCE RESPONSIBILITY 4
3.3 MAINTENANCE REQUIREMENTS 4
3.4 PIPE NETWORK 5
3.5 PERMEABLE PAVEMENT 6
3.6 RIPARIAN RESPONSIBILITIES 7
3.7 ACCIDENTAL SPILLAGES 7

4 DRAINAGE CONSTRUCTION ENVIRONMENTAL MANAGEMENT STRATEGY 8

4.1 GENERAL 8
4.2 MATERIALS STORAGE 8
4.3 FUEL & OTHER CHEMICALS 8
4.4 PHYSICAL RISKS 9
4.5 FOUL WATER 10

5 CONTACT DETAILS AND RECORD OF MAINTENANCE 11

5.1 CONTACT DETAILS OF INDIVIDUAL/INDIVIDUALS RESPONSIBLE FOR THIS PLAN 11
5.2 RECORD OF MAINTENANCE AND PHOTOGRAPHIC EVIDENCE 11

APPENDIX 1.0 – RECORD OF MAINTENANCE 1

APPENDIX 2.0 – WEST SUSSEX COUNTY COUNCIL WATERCOURSE MAINTENACE GUIDANCE 5

1 INTRODUCTION

1.1 Introduction

1.1.1 This statement details the drainage strategy and maintenance requirements for the proposed surface and foul water systems at the development above. A copy of this statement should be provided to the party responsible for maintaining the drainage system and should also be included within the Maintenance Manuals for the development.

1.1.2 The maintenance detailed in this document must be undertaken throughout the lifetime of the development. Failure to undertake this maintenance may result in the drainage system not operating as designed, increasing the risk of flooding.

1.1.3 The drawing detailing the strategy of the drainage system are referenced in the latest version of 9395-SWP-ZZ-XX-DP-C-1100.

1.2 Terms of Reference

1.2.1 Sustainable Drainage Systems (SuDS) are a sequence of water management practices and facilities designed to drain surface water in a manner that will provide a more sustainable approach than what has been the conventional practice. SuDS are designed to mimic natural drainage flows and typically manage rainfall close to where it falls. Benefits include the effective management of runoff from hard standing surfaces, such as pavements and driveways, by reducing the volume, frequency, and flow rate of surface water runoff during extreme storm events. They provide protection and/or enhancement of water quality (reducing pollution from runoff), are sympathetic to the environment and the needs of the local community and provide an attractive habitat for wildlife in urban locations.

1.2.2 The purpose of this management plan is to demonstrate how SuDS, which have been implemented at this particular residential development, will be maintained in compliance with various requirements and best practice guidance, including but not limited to, the National Planning Policy Framework (NPPF) and SuDS Manual (CIRIA, 2015).

1.2.3 The maintenance plan aims to:

- Summarise the surface and foul water drainage strategy
- Summarise the various SuDS features used within the site;
- Establish who is responsible for the maintenance of the drainage including the SuDS components;
- Set out how to maintain the incorporated components following construction;
- Ensure that all those involved in the maintenance and operation of the SuDS understand their functionality and maintenance requirements in terms of supporting long-term performance.

Maintenance inspections should be recorded in Appendix 1.0 of this report to ensure that the document stays up to date.

2 DRAINAGE STRATEGY

2.1 Surface Water Drainage Strategy

2.1.1 It is proposed to discharge surface water to the diverted culverted watercourse at up to 2.0l/s for up to and including the 1in100 plus 45% climate change rainfall event.

2.1.2 A traditional positive piped drainage system shall discharge to a hydrobrake with attenuation being provided in the subbase of the permeable block paving driveways.

2.1.3 Calculations have shown that the proposed drainage strategy has the capacity for all storms up to and including the peak 100-year storm event with a 45% allowance for increased rainfall intensity as a direct result of climate change.

2.2 Foul Water Drainage Strategy

2.2.1 It is proposed to install new positive drainage to serve the development. This connects to the existing on-site inspection chamber n the south-west of the site. It is believed this discharges to the public foul sewer to the west of the site.

2.2.2 Connection to the sewer will be subject to a S106 connection agreement with Southern Water.

3 MAINTENANCE REQUIREMENTS

3.1 General

3.1.1 Only trained personnel will be permitted to undertake maintenance of SuDS features and drainage where responsibility lies with Private Management Companies. This work must be carried out in accordance with the Confined Space Regulations. To facilitate this maintenance, manholes, inspection chambers and other apparatus are located, where they are reasonably accessible.

3.2 Maintenance Responsibility

3.2.1 All private drainage within the site boundary will be the responsibility of a private Saxon Weald.

3.2.2 The details of the private management company are supplied separately.

3.3 Maintenance Requirements

3.3.1 Whilst the drainage system has been designed to operate with as little maintenance as possible, there are key operations that must regularly be undertaken to ensure that it remains in optimal condition, most of which are general housekeeping tasks that should be undertaken for any drainage system, but with additional attention to the catchpits and downstream defenders upstream of the soakaways. These operations are summarised below together with recommended frequencies:

3.3.2 Periodic desilting of catchpits, gully sumps, and threshold drains. These should be emptied at least as follows (but with an annual inspection and additional cleansing if required): On completion of drainage works, Year 1, Year 3, then every 5 years. The desilting of these items is required to allow the underground geo-cellular soakaways to operate as per the design, and do not become blocked.

3.3.3 Periodic jetting or rodding of pipework as required to clear blockages.

3.3.4 Gratings on any gullies and threshold drains to be kept clear of debris.

3.3.5 The drainage components beneath external areas (under landscaping, hard surfacing, and car parking) will be easily accessible for maintenance purposes.

3.3.6 Ease of access for maintenance and inspection is essential; the manhole lids will be kept as lightweight as practicable. Frequent street sweeping in the catchment areas of catchpits and downstream defenders will increase the time interval in which the system has to be cleaned out.

3.3.7 The proposed catchpits are essentially sump manholes where the outlet pipe is set at a level above the inlet pipe, allowing some removal of sediments, floating debris, oil and grease from surface water. The sump in the catchpits will be cleaned out using a conventional sump vacuum cleaner. In most situations, the units should be cleaned out at least annually.

3.3.8 The following maintenance regime would be recommended as a minimum, but actions and frequencies should be adjusted to suit the specific requirements of this development. However, the previous discussed, component specific regimes and any manufacturer's specific recommendations should always be followed.

Maintenance Schedule	Required Works/Action	Frequency
Routine Maintenance	Inspect and identify incorrect operation. Debris removal from catchment area using sweeping and vacuuming. Removal of sediment from pre-treatment components i.e catchpits, downstream defenders.	Monthly 3 Monthly Annually

Table 3.1 - Recommended Maintenance Requirements

3.4 Pipe Network

3.4.1 All pipe work will be visually inspected at least once a month for the first three months after installation and then a minimum of once year.

3.4.2 Flushing of the system can be achieved using a jetting system with a 150 bar pump pressure (ie. approximately 80 bar at the nozzle) at a discharge flow of 300 l/min. The jet nozzle should be introduced to the system via the Inspection manhole and the integral inspection / maintenance tunnel.

Any silt & debris should be flushed to the inspection or catchpit manhole and removed in accordance with the Management Company policy for waste management.

Below Ground Pipe Network Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Debris removal from catchment surface (where may cause risks to performance)	Monthly
	Remove sediment from pre-treatment inlet structures and inspection chambers.	Annually or as required
	Maintain vegetation to designed limits within the vicinity of below ground drainage pipes and tanks to avoid damage to system.	Annually, or as required
Remedial actions	Repair physical damage if necessary	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually and after large storms

3.5 Permeable Pavement

3.5.1 The areas of permeable pavement will require additional maintenance measures to ensure they operate as designed. Failure to carry out this maintenance, could increase the risk of flooding. The areas of permeable pavement are designed to allow movement of surface water run-off through the pavement surface and into the subbase below. The water is then either infiltrated into the soil below or collected and discharged to the positive drainage system.

3.5.2 Periodic silt removal from permeable surfaces as described by manufacturer. The entire surface shall be monitored and when there are signs of excessive siltation resulting in poor drainage over the whole area, the surface shall be taken up and a replacement of bedding layer and geotextile shall be undertaken.

Permeable Pavements Maintenance schedule	Required action	Typical frequency
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using Glyphospate applied directly into the weeds by an applicator rather that spraying	As required – once per year on less frequently use pavements
Remedial actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving	As required
	Remedial work to any depressions, rutting and damaged surface considered detrimental to the structural performance or a hazard to users, and replace lost material	As Required
	Rehabilitation of surface and substructure	Every 10 to 15 years or as required
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48 h after large storms in first six months
	Inspect silt accumulations rates	Annually

3.6 Riparian Responsibilities

3.6.1 A culverted watercourse runs through the northern part of the site. The management company will be responsible for the upkeep of the watercourse.

3.6.2 Appendix 2 contains the current guidance from West Sussex County Council on the maintenance responsibilities and good practice.

3.7 Accidental Spillages

3.7.1 It is not envisaged that any materials are to be stored onsite once the development is completed, which could cause major spills and potential pollution issues within the drainage system. If this situation alters in the future a specialist will be required to be contacted to confirm if any upgrades to the existing system are required.

3.7.2 Minor spillages of fuels and oils from motor vehicles will be dealt with by the permeable paving and deep trapped gullies, by biodegrading / collecting the hydrocarbons respectively.

4 DRAINAGE CONSTRUCTION ENVIRONMENTAL MANAGEMENT STRATEGY

4.1 General

4.1.1 The Principal Contractor and any sub-contractors will be required to conduct their activities in accordance with the relevant EA PPG guidance, in order to prevent pollution by potential contaminants. An inventory of potential pollution sources associated with the construction process and details regarding the management of these sources will be documented by the Principal Contractor and updated as construction progresses if new potential pollution sources are identified. Contaminants associated with construction may be:

- Chemical: such as fuels, oils, lubricants, surfactants and other cleaning chemicals, and flocculants; or
- Physical: such as dust and other airborne particulates, silts and sediments.

4.2 Materials Storage

4.2.1 Potential sources and pathways of pollution from residential construction works may include:

- Direct disturbance of the banks and bed of channels during watercourse crossing construction, repair and/or upgrade works;
- Dust, peat disturbance and spoil management on site;
- Pumping of standing water required for de-watering of excavations such as manholes, pipe runs etc, or as required for drainage management purposes;
- Run-off entering watercourses from:
  - Exposed ground, excavations and material stockpiles (aggregate and excavated/overburden peat and soil), tracks and haul routes;
  - Tracks and culverts at watercourse crossings;
- Cement and cement wash where cement grout or concrete is being applied;
- Plant washing and vehicle wheel-wash areas;
- Fuel and chemical storage/refuelling areas;
- Leaking/vandalised plant and equipment; and
- Sewage and wastewater from the temporary construction compound.

4.3 Fuel & Other Chemicals

4.3.1 There is potential for spillages of hydrocarbons and other chemicals that could potentially migrate to surface water or groundwater and adversely affect water quality. Spillages could be associated with delivery vehicles and mechanised construction plant or from any areas where fuels or other materials are temporarily stored on the Site. To reduce the likelihood of contaminants impacting migrating to surface or groundwater, hydrocarbons and other chemicals such as fuels will be located away from sensitive environment receptors such as surface watercourses and will be stored appropriately:

- The storage of potentially polluting materials will be kept to a minimum and, where less hazardous or inert materials are reasonably available, these will be specified;

- Any obvious potential pollutant sources such as mobile plant, materials storage, and temporary waste storage facilities will be located away from watercourses and where practicable, operation of construction plant will observe a buffer distance from watercourses (tbc);

- All fuels, oils and potential contaminants, as well as waste oils, will be stored within the construction compounds in secure, fit for purpose containers within bunded containment as appropriate and in accordance with the latest Government guidance (available at https://www.gov.uk/oil-storage-regulations-and-safety/business). The bunded containment shall have a capacity of 110% of the volume to be stored and will have impervious, secured walls and base. There shall be no fuel storage outside the construction compound;
- All materials stored within the Site will be checked regularly for containment integrity, quantity stored and security of storage;
- Generally, re-fuelling and maintenance of mobile plant and machinery will be carried out at a designated location within the construction compound only, at a dedicated impermeable refuelling pad. The pad will be bunded and equipped with a collection sump. Refuelling will be carried out using an approved mobile fuel bowser with a suitable pump and hose.
- Drip trays will be mandatory beneath all stationary construction vehicles and spill kits, absorbent mats and absorbent sands will be available on Site and will be deployed to contain drips and small spillages and all relevant staff will be trained in their appropriate use. Any spills will be cleaned up as soon as possible with any contaminated sands bagged up and disposed of correctly;
- The wheel-washing facility will also comprise an impermeable bunded area enabling wash water to be collected and stored to prevent runoff of polluted water to down gradient watercourses. This will also ensure that mud and debris from the Site is not transferred to roads outside the site boundary and potentially polluting substances such as fuels, oils and other chemicals are captured. The water will either be treated and tested prior to discharge. The method of disposal of all waste water will be agreed with the EA and or the local authority prior to construction commencing; and
- All vehicles on site will be fitted with oil spill kits. In addition, all vehicles delivering hydrocarbons to site will be fitted with oil spill kits and will ensure that sand trays are placed below any oil of fuel filling activities. Spare oil spill kits will be held in the site office at all times. watercourses and where practicable, operation of construction plant will observe a buffer distance from watercourses (tbc);

4.4 Physical Risks

4.4.1 To limit potential pollution impacts from either hardcore and/or excavated material entering watercourses, or increased sediment levels within surface water runoff, the principle contractor will be required to adhere to the following measures and controls as a minimum:

- Any excavated soil or peat that will be used in the construction of access tracks (e.g. to dress the sides of the tracks once backfilled) are to be temporarily placed on the furthest side away from any identified watercourse or drain;

- The provision of buffer strips around watercourses or drainage channels on sections of track adjacent to watercourse crossings;
- Procedures during excavations and soil handling for both routine working and during any environmental emergencies to control and mitigate both erosion and dust generation; and
- All areas of stockpiled arisings should be inspected by the Principal Contractor at maximum one week intervals and following heavy rainfall or thaw conditions.

4.5 Foul Water

4.5.1 Foul water from the on Site facilities at the construction works compound will be removed from Site by an appropriately licensed contractor.

5 CONTACT DETAILS AND RECORD OF MAINTENANCE

5.1 Contact Details of Individual/Individuals Responsible for This Plan

5.1.1 In the event of concern over any matter related to drainage, please contact:

Name:……

Address:……
……
……
……

Phone:……

Email:……

5.2 Record of Maintenance and Photographic Evidence

5.2.1 Please provide a record of all inspections (including all photographic evidence) in Appendix

APPENDIX 1.0 – RECORD OF MAINTENANCE

RECORD OF MAINTENANCE

GENERAL INFORMATION			
Site ID	Fairfield Cottages		
Site Address/ Location	Fairfield Cottages, Cowfold, Sussex		
Elements forming the SuDS scheme	Catchpits, Permeable Pavement, Hydrobrake	Inspection frequency	As Required
Type of development	Residential	Approved Drawing Ref(s)	9395-SWP-ZZ-XX-DP-C-1100

	Inspection date				**Inspection date**			
	Details	**Y/N**	**Action required**	**Date completed**	**Details**	**Y/N**	**Action required**	**Date completed**
GENERAL INSPECTION ITEMS								
Are covers/ fittings correctly secured. If no, state location and problem. Cause								

	Details	Y/N	Action required	Date completed	Details	Y/N	Action required	Date completed
SILT/ SEDIMENT ACCUMULATION								
Is there accumulation at inlets (or other defined accumulation zones such as the gullies, threshold drains, catchpits) If yes, state location, depth (mm) and extent. Is removal required? If yes, state waste disposal requirements and confirm all waste management requirements have been complied with (consult EA or SEPA).								
SYSTEM BLOCKAGES/ LITTER BUILD UP								
Is there evidence of litter accumulation in the system? If yes, is this a blockage risk?								

	Details	Y/N	Action required	Date completed	Details	Y/N	Action required	Date completed
OTHER OBSERVATIONS								
INFORMATION APPENDED (Photos etc.)								

APPENDIX 2.0 – WEST SUSSEX COUNTY COUNCIL WATERCOURSE MAINTENACE GUIDANCE

www.westsussex.gov.uk/ditchtheproblem

DITCH THE PROBLEM

Good Practice for Watercourse Maintenance



west sussex county council

OPERATION WATERSHED
Developing Stronger Communities

February 2018

Contents

1. Who is this guide for? 3
2. What does this guidance cover? 3
3. Why am I responsible for watercourse maintenance? 3
4. The Importance of Well-Maintained Watercourses 4
5. Recognising if you have a watercourse on your land 5
6. Basic steps in maintaining your watercourse 6
7. Staying Safe 9
8. Looking after Wildlife 9
9. Timing and Frequency of Maintenance 12
10. The right tools for the job 12
11. Staying Legal 13
12. Where you can get more help and advice 15

1. Who is this guide for?

This guidance is an introduction to maintaining your watercourse and is aimed at landowners and their agents. You are known as a 'Riparian Owner' if you have a watercourse, ditch, stream river or culvert running alongside or within your property boundary.



2. What does this guidance cover?

- The importance of well-maintained watercourses
- Recognising if you have a watercourse on your land
- Basic Steps in maintaining your watercourse:
- Open ditches
- Piped or culverted watercourses
- Staying safe
- Looking after wildlife:
- Protected species
- Invasive species
- Timing and frequency of maintenance
- The right tools for the job
- Staying legal: Permissions and Consents
- Where can you get more help and advice

3. Why am I responsible for watercourse maintenance?

As a riparian owner, you have responsibilities in relation to the watercourse flowing through or adjacent to your property. These are set out in law in the Public Health Act 1936, the Land Drainage Acts of 1991 & 1994, the Water Resources Act 1991 and some local Land Drainage Bylaws.

4. The Importance of Well-Maintained Watercourses

Keeping your watercourse well maintained benefits the community as a whole. If an area experiences constant flooding, this becomes a nuisance to the community, can restrict access to property, makes everyday living difficult, and results in considerable expense and inconvenience for those that have been flooded. The weather over the winter of 2013/14 has highlighted the issues of how important watercourse maintenance can be to keep our drainage systems working properly.

The information below provides some helpful 'best practice' information to guide you in carrying out maintenance along your watercourse. The simple measures in this guidance, such as working from one bank and not using heavy machinery in the channel (when possible), will help you maintain your watercourses in a way that protects the environment and reduces the risks of flooding.

For flood risk

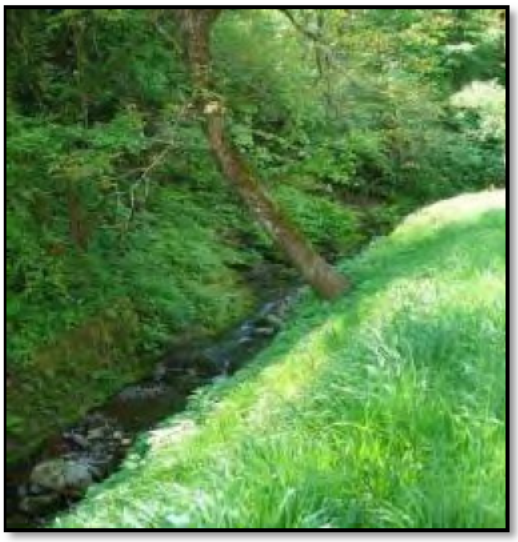
Watercourses such as ditches and culverts are designed to drain surface water away, before the water levels increase to an extent that puts property, roads, land and infrastructure at risk of flooding. If the system of ditches and culverts are maintained to a good standard, any flooding is likely to only affect areas in the floodplain. Not all watercourses transport water, as some act purely for storage, but maintenance of the capacity of these storage features is important, as they prevent water flooding elsewhere.

The cost of maintaining a watercourse is minor compared to the costs that can arise from flood damage, not to mention the distress and inconvenience caused if your property is flooded.

If a flood has occurred, as direct results of a landowner not carrying out their riparian responsibilities to properly maintain their watercourses, that landowner could be liable for compensating any damage that occurs.

For wildlife

If a watercourse is carefully maintained, it can create an excellent habitat for wildlife. In certain areas, watercourses are home to the Water Vole, a nationally protected species. Careful planning, such as trimming alternate banks of the watercourse each year to remove obstructive vegetation allows landowners to help fulfil their riparian responsibilities, whilst enhancing the environment. This approach allows wildlife to migrate to opposite sides of the watercourse each year, rather than be forced to leave the watercourse totally. The Sussex Otters and



Rivers Project have produced a leaflet Wildlife Friendly Weed Clearance and Vegetation Management in Watercourses – see link in section 8. The removal of silt and debris from the watercourse bed is also very important and again can enhance the environment, as well as ensure the free flow of water.

5. Recognising if you have a watercourse on your land

If you own land or property with a river, stream, ditch or culvert next to or within it you are a 'riparian landowner' and this guide is for you. This may be obvious if you are the:

Landowner for both banks of a watercourse:
If you own the land on both sides of an watercourse you are fully responsible for the maintenance of that watercourse.

Landowner on one bank of a watercourse (or nearest to the bank):
If you are the closest landowner to the top bank of a watercourse, you are usually responsible for the maintenance of it, to the central line of the watercourse (even if it does not fall within your property boundary as set out by your Title Deeds).

Landowner on one side of the bank with Highway on opposite bank:

In most cases across West Sussex, roadside ditches are the responsibility of the landowner on either side of the ditch, as described above - not West Sussex County Council or the Highway Agency who maintain the highways.

However some watercourses may be underground and not be immediately obvious. Culverted watercourses are watercourses that have been piped, usually under highways, driveways or housing developments. They are generally connected to an open watercourse at some point but may have no visible signs above the ground at all. You are still responsible for the piped watercourse which passes through your land if you are the:

Landowner of the land through which the culvert runs:

If you own the land on both sides of a culverted watercourse you are fully responsible for the maintenance of that section of the watercourse in your land.

Landowner of the land next to where the culvert runs:

Many culverted watercourses follow the line of the old open ditch and may run along the boundary of properties. In that case you are jointly responsible with your neighbour for the maintenance of that section of the piped or culverted watercourse next to your land.

The **Riparian Ownership: Frequently Asked Questions** document (available from West Sussex County Council) includes some drawings of example riparian

watercourses. Historic Maps may show the location of old watercourses and in some cases the watercourses may be shown on the Title Deeds for your land.

Alternatively see the "*Where can you get more help and advice"* section for contacts who may be able to help with identifying watercourse on your land.

6. Basic steps in maintaining your watercourse

The principles of keeping a watercourse well maintained are very simple and the basic responsibility is to ensure "the proper flow of water" by preventing any obstructions. You should also ensure that it doesn't attract vermin or cause a health hazard.



A riparian ditch in need of maintenance to remove vegetation, silt and debris

For open ditches, streams and rivers

a) Keep growth of vegetation (trees, weeds, reeds, grass etc) under control

When trimming vegetation it is important to consider any impact on biodiversity. Mowing of banks around ditches should be minimised during the animal spawning season of March to mid-July.

- Some trees may have tree protection orders (TPOs) on them so if in doubt check with your local planning authority.
- It is recommended to cut only up to just above the water level on one side of the watercourse, leaving the fringe of the bank uncut, thereby maintaining some habitat as well as enabling a free flow of water in the ditch.
- Cuttings from any clearance work should be removed from the channel to avoid it causing blockages downstream. Putting removed material too close to the top of the bank can lead to it falling back in during times of flooding

It's worth noting that you don't always have to remove all vegetation to allow water to flow. In fact keeping some vegetation can be beneficial for wildlife and to prevent erosion. Large tree roots and dense vegetation are the main problems.

b) Keep watercourses free of debris (e.g. litter, grass cuttings, and fallen trees and branches)

- Remove any physical obstructions such as large rocks, rubble, fallen trees and branches and other waste materials (litter, grass cuttings etc) so that water can flow freely.
- All non-organic waste should be completely removed off site and disposed of in an appropriate manner.
- Any green waste resulting from the maintenance of ditches can be left a safe distance from the bank for a few days to allow any organisms to move back into the watercourse, after which the green waste should be removed so it doesn't wash back into the watercourse.
- Ensure that any disturbed debris does not end up flowing downstream and causing problems for other landowners.

Do not store anything alongside the watercourse which may interfere with maintenance, affect the stability of the bank or get washed into the channel.

c) Remove excess silt

Silt naturally builds up in watercourses as vegetation dies back each year. It can quickly reduce the capacity of a watercourse or block pipes into or out of the watercourse.



A ditch where silt has built up over the opening of an inlet pipe

- Silt should be removed along the length of the ditch to ensure it flows properly in the right direction.
- If there are any pipes into or out of the ditch you should remove silt to the same level or below the bottom of the pipe(s).
- Where possible, try to maintain the original slope and cross section of the ditch when de-silting. If the slope of the ditch is altered it can change the flow pattern, cause erosion or increase flood risk either upstream or downstream.

- As long as the silt is non–hazardous you can put it on the bank of the watercourse. Depositing silt on top of the banks of the watercourse allows for any organisms to move back into the ditch. However;
    - It is essential that this material does not then block any other ditches or nearby roads, or stop water draining into the ditch if it would normally do so (eg from higher ground into the ditch)
    - The silt must be deposited as close as possible to where it was dredged from either: on the bank of the waters from where it was taken or on land directly next to the watercourse
- If you think that the material may be hazardous – for instance if it contains oils or other waste – please see guidance online for methods of disposal https://www.gov.uk/waste-exemptions-disposing-of-waste or contact the Environment Agency for advice.

For piped or culverted watercourses

Piped or 'culverted' watercourses are prone to blockage or collapse and will degrade over time. Where they naturally silt up they can be difficult to access and clean. Cleaning the inside of a culvert is likely to cost more than carrying out maintenance of an open watercourse, due to the specialist equipment required to access it.



A damaged culvert requiring repair

- Blockages within the pipe or at the pipe entrance can cause flooding problems. These blockages can be reduced by regular inspection and the removal of debris.
- Either you or a qualified drainage company should carry out regular inspections and clear any blockages or silt build up as soon as they occur. There are many drainage companies that can inspect and clear culverts.



- Culvert entrances and exits often have protective grilles to prevent debris entering the pipe and causing blockages. These should be inspected and cleared regularly, especially during the winter or periods of heavy rainfall when debris can accumulate very quickly.

A trash screen (grille) blocked with leaves

- The design of screens must be agreed with the District or Borough Council or Environment Agency and permission given prior to installation, as poorly designed screens can cause an obstruction themselves.
- Health and Safety must be your top priority when carrying out culvert maintenance and you should never enter any large culvert without seeking advice.

7. Staying Safe

When undertaking works within or adjacent to a watercourse, landowners must assess their works to ensure that they can be undertaken without putting themselves or others at any kind of risk. Due to the range of risks posed by both open and culverted watercourses, landowners should assess this on a case-by-case basis.

In particular you should consider the risks posed by working:

- in deep silt or mud
- on slippery banks near water
- in/near deep or fast flowing water
- near roads
- with plant or machinery
- around culverts and enclosed spaces
- cutting down or working near trees

If in any doubt you should always seek advice.

You should always make sure you follow these rules to help protect your health:

- Wear protective clothing such as gloves
- Cover any open wounds such as cuts and scratches with waterproof plasters
- Carefully clean any cuts or scratches obtained during the work near water
- Wash thoroughly and as soon as possible if you have entered the water
- See a doctor if you start to feel unwell after working near water

8. Looking after Wildlife

Ditches can form very important habitats and may contain important species of flora and fauna that are protected or invasive species which are controlled under the Wildlife and Countryside Act 1981.

Protected Species

Protected species can include native crayfish, water voles, great crested newts, nesting birds and bats. If you think that the area you are considering clearing may contain any protected species please seek further advice before proceeding. To find

out if protected species have been recorded on or near your land contact the Sussex Wildlife Trust; www.sussexwildlifetrust.org.uk/

Various methods for reducing the impact of maintenance works on the environment are suggested in the next two sections below, such as using hand tools to clear obstructions to the flow of water, rather than completely removing a ditch of vegetation using machinery. Also, through careful maintenance planning, alternate stretches of a watercourse can be worked on each year, to ensure there is always a healthy vegetated area where wildlife disturbed by maintenance can migrate to. It must be remembered however, that there must always be a clear free flow to water at all times.

A number of organisations have produced information that sets out wildlife friendly weed clearance and vegetation management in watercourses and these are really helpful guides.

The Manhood Wildlife and Heritage Group:
Getting to Grips: Wetland Management for People and Wildlife
Find it here: http://mwhg.org.uk/getting-to-grips-wetland-management-for-people-and-wildlife/

If you own a larger watercourse, maintain multiple watercourses or are likely to be using large machinery to clean the watercourse it is recommended you consult the Environment Agency and use the guidance document listed below:



The Drainage Channel Biodiversity Manual

Natural England and the Association of Drainage Authorities
http://publications.naturalengland.org.uk/publication/50004

Many farmers take part in Wildlife Stewardship schemes, which set clear rules for the maintenance of watercourses. If these are not adhered to, landowners risk breaking the rules of such agreements and may be penalised. Contact Natural England or your local Wildlife Trust to find out if you need permission to do work on any watercourse which is on or near to a designated nature conservation site or within a European or nationally protected site. Examples of these are listed below but there may be others:

- Special Area of Conservation (SAC)
- Special Protection Area (SPA)
- Site of Special Scientific Interest (SSSI)
- Ramsar Site

Invasive Species

Some vegetation and animal species are non-native and considered invasive. Invasive non-native plants are species which have been brought into the UK and have the ability to spread causing damage to the environment, the economy, our health and the way we live. If you have invasive plants or injurious weeds on your premises you have a responsibility to prevent them spreading into the wild or causing a nuisance.

You must not plant or otherwise cause to grow in the wild any plant listed on schedule 9 of the Wildlife and Countryside Act 1981. Those frequently found alongside watercourses include:



All ©Crown Copyright 2009

More information on the identification of invasive species and their management can be found on the GB non-native species secretariat website:
www.nonnativespecies.org

9. Timing and Frequency of Maintenance

For all watercourses it is good practice to develop a program that sets out how often you will carry out maintenance works. Most watercourses require annual maintenance to some degree and the best time to undertake works is in mid-Autumn in preparation for increased winter flows.

- Ensure that you undertake the majority of your clearance works after the vegetation has begun to die back in late September/October. At this time of year, there is also less likely to be wildlife nesting or breeding in or near ditches.
- You should try and carry out the works when the water level is at its lowest i.e. following low tide in tide locked areas or when there has been little rainfall.
- Plan your maintenance to ensure that stretches of habitat are left intact, for example by trimming alternate banks or lengths of ditch each year. This ensures that there is always a healthily vegetated area where wildlife disturbed by maintenance can move to without being forced to leave the ditches.
- If protected species have been recorded in your ditches you must ensure their habitats are not adversely affected.
- Trash / weed screens and grilles should regularly be checked all year round, but, especially at times of anticipated high flow.
- Debris in ditches should be removed as soon as it starts to build up.
- In culverted watercourses, your program should inspect the culvert for blockages or signs of collapse. If such problems are identified before a total obstruction to the watercourse occurs, it reduces the likelihood of flooding incidents. Many drainage companies will undertake jet cleaning or camera surveys within culverts at a cost, or you can rod the culverts to check for blockages.

10. The right tools for the job

This depends on the scale of your watercourse and the extent of works required. For smaller landowners, maintenance of watercourses is generally best achieved using hand tools, such as saws, spades and shovels, as this is less destructive to habitats, vegetation and the bed of the watercourse. It is far better to undertake minor works more regularly that remove clear obstructions to flow, than completely remove all vegetation and silt from the bed and banks of a watercourse in one go. Regular, minor works will leave healthy vegetation along the bed and banks of the watercourse. This is of importance to the water quality and the wildlife that lives in

the watercourse. Of course, if the watercourse has not been maintained for a long time then there may be no option but to undertake major works.

Machinery can clear large stretches of open ditch quickly. If using such machinery, the sensitivity of the watercourse must be considered and maintenance should be planned to ensure stretches of habitat are left intact (potentially by strimming alternate banks or lengths of a watercourse each year).

For culverted watercourses, specialist tools may be needed to jet clean or rod the culvert to clear blockages or to carry out inspections using camera surveys. For culverts or open watercourses many landowners will appoint drainage companies/contractors to carry out maintenance, and it is recommended that landowners who choose to do this always obtain a range of quotes in attempt to achieve best value.

11. Staying Legal

Whenever carrying out maintenance to watercourses and ditches, you must ensure that the works that you undertake are legal. General maintenance as set out in this guidance is unlikely to break the law, however some activities do require permissions or consent: Remember, any works undertaken without consent could result in enforcement action.

Altering the watercourse

If you wish to alter the route, shape or capacity of the watercourse (whether open or piped) so as to change the flow or you wish to build near a watercourse, you are likely to require permission from the regulating body and/or the relevant landowners.

- For works on Main Rivers you must submit your plans to the **Environment Agency** and apply for Flood Defence Consent if you want to:
    - Carry out work on, over, under or near a Main River, flood or sea defence
    - make changes to any structure that helps control floods

  See https://www.gov.uk/flood-defence-consent-england-wales for consent information and to find out if your watercourse is a main river.

- For works on, over, under or near non-main rivers (Ordinary Watercourses) contact your District or Borough Council or visit the WSCC ordinary watercourse consent page: http://www.westsussex.gov.uk/living/environment_and_planning/managing_flood_risk/ordinary_watercourse_regulatio.aspx

Waste Management

In some cases ditch spoil or removed invasive species can be categorised as Hazardous Waste. Environment Agency Licenses or Exemptions may be required, so if in doubt please check with your relevant Environment Agency Office before progressing.

Safety

Personal and volunteer safety is crucial, it is essential that potential risks are assessed prior to work beginning.

Private property

Get permission from the landowner/s before going onto private property.

Preventing problems downstream

Whilst increasing channel capacity and improving flow can lead to land upstream draining faster it can cause flooding downstream. Increased flows can also lead to bank erosion and more silt entering the watercourse and this is why consent for these works is often required.

Whenever undertaking maintenance works to watercourses, landowners should ensure that any vegetation, debris or silt that has been removed from the watercourse does not end up back in the flow of the watercourse. Care should also be taken to ensure that any disturbed debris does not end up flowing downstream and causing problems for other landowners.

Countryside Stewardship

Landowners who are covered by countryside stewardship schemes must ensure that any maintenance works are in line with their agreements. If protected species have been recorded in your watercourse you must also ensure their habitats are not destroyed, bearing in mind that you must also ensure the free flow of water in the watercourse that you are responsible for.

Tree Protection

You must check with your local planning authority to ensure there are no Tree Preservation Orders (TPOs) on the trees you are planning to carry out works on.

Wildlife

As mentioned above, some species, including all nesting birds, have strict protection under the law. If you are in any doubt at all as to the presence of species which are protected please seek advice before carrying out any works.

12. Where you can get more help and advice

For advice on riparian watercourse ownership or maintenance:	
Adur District Council	helppoint@adur-worthing.gov.uk
adur-worthing.gov.uk	+44 (0)1273 263000
Arun District Council	info@arun.gov.uk
arun.gov.uk	+44 (0)1903 737500
Chichester District Council	contact@chichester.gov.uk
chichester.gov.uk	+44 (0)1243 785166
Crawley Borough Council	comments@crawley.gov.uk
crawley.gov.uk	+44 (0)1293 438000
Horsham District Council	yoursay@horsham.gov.uk
horsham.gov.uk	+44 (0)1403 215100
Mid Sussex District Council	enquiries@midsussex.gov.uk
midsussex.gov.uk	+44 (0)1444 458166
Worthing Borough Council	enquiries@adur-worthing.gov.uk
adur-worthing.gov.uk	+44 (0)1903 239999
Environment Agency	enquiries@environment-agency.gov.uk
environment-agency.gov.uk	+44 (0)3708 506 506
West Sussex County Council	customer.service@westsussex.gov.uk
www.westsussex.gov.uk	+44 (0)1243 777100
Sussex Wildlife Trust	+44 (0)1273 492630
sussexwildlifetrust.org.uk	enquiries@sussexwt.org.uk

For other problems related to riparian watercourses or pipe		
For problems on the Highways and Roads (except private roads)	**West Sussex County Council**	westsussex.gov.uk
For problems with Public Surface Water and Foul Sewers:		
For most of West Sussex	**Southern Water**	southernwater.co.uk
For Rusper, Pease Pottage, Copthorne and Crawley areas only	**Thames Water**	thameswater.co.uk

Copyright © 2018 WSCC