



South Wokingham Distributor Road (SWDR) - Spine Road and Western Gateway Phase 1 (SRWG1)

Surface Water Management, Adoption and Maintenance Plan

WMHP-TG-SRWG1-RP-DD-0508

Revision: P02 Date: 23/01/2024

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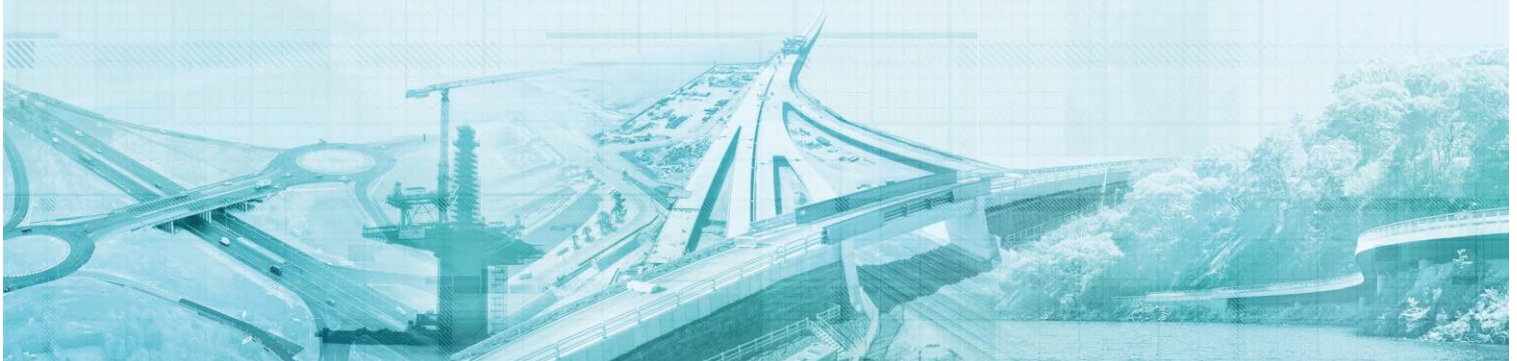
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Wokingham Borough Council

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1.1. Introduction

The Surface Water Management, Adoption and Maintenance Plan has produced to support the adoption and maintenance of the drainage assets and Sustainable Drainage Systems (SuDS) associated with Spine Road and Western Gateway Phase 1.

As the South Wokingham Distributor Road – Spine Road and Western Gateway Phase 1 (SRWG1) will be owned by Wokingham Borough Council, the drainage elements for the highway will be adopted by Wokingham Borough Council.

In addition to the maintenance recommendations provided in this document, specific maintenance guidelines provided by the manufacturers of drainage products used in the construction of SuDS features should also be applied.

1.2. SuDS Components

The Scheme contains several SuDS components that will require on-going inspection and maintenance. These are:

- Detention Basins
- Attenuation Storage Tanks
- Bioretention Features
- Filter Drains

These SuDS features are in-keeping with the proposals set out in the wider scheme drainage strategy and in-line with the planning conditions for the sites development.

Other drainage features such as; catch pits, gullies, combined kerb drains and carrier pipes have also been included in the design for the collection of surface run off and conveyance.

1.3. Inspections

As part of the on-going management of the SuDS components there is a need for regular inspections to ensure that blockages, silt and excess litter are not adversely affecting the drainage components of the scheme.

Routine inspections should be carried out once a month for most components, particularly for the first year of installation. This frequency can then be reviewed to an appropriate schedule, based on the first year's observations.

Recurring attendance by the same company will ensure appropriate monitoring of the drainage system, a rapid response to problems, and ownership of the features. A record of inspections should be kept on a maintenance record.

Further requirements for the inspection of particular features can be found in the following section.

1.4. Maintenance

The general maintenance regime of the system should be in accordance with manufacturer's recommendations, and subject to agreement with the Highways Authority.

Regular inspection and maintenance is required to ensure the effective long-term operation of SuDS; these requirements are detailed in the SuDS Manual CIRIA 753. An extract is provided in Table 1.

Maintenance activities are categorised as follows:

- Regular Inspections
- Regular Maintenance
- Occasional Maintenance
- Remedial Actions
- Monitoring

Table 1: Operation and Maintenance Schedule for SuDS Features (extracted from SuDS Manual CIRIA 753)

SuDS Feature	Maintenance Schedule	Required Action	Typical Frequency
Filter Drain	Regular Maintenance	Remove litter (including leaf litter) and debris from filter drain surface, access chambers and pre-treatment devices	Monthly or as required
		Inspection of filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage	Monthly
		Inspection of pre-treatment systems, inlets and perforated pipework for silt accumulation and establish appropriate silt removal frequencies	Six monthly
		Removal of sediment for pre-treatment devices	Six monthly or as required
	Occasional Maintenance	Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (eg NJUG, 2007 or BS 3998:2010)	As required
		At locations with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium	Five yearly, or as required
		Clear perforated pipework of blockages	As required
Bioretention	Regular Inspections	Inspect infiltration surfaces for silting and ponding, record de-watering time of the facility and assess standing water levels in the underdrain (if appropriate) to determine if maintenance is necessary	Quarterly
		Check operation of underdrains by inspection of flows after rain	Quarterly

SuDS Feature	Maintenance Schedule	Required Action	Typical Frequency
		Assess plants for disease infection, poor growth, invasive species etc and replace as necessary	Annually
		Inspect inlets and outlets for blockage	Quarterly
	Regular Maintenance	Remove litter and surface debris and weeds	Quarterly (or more frequently for tidiness or aesthetic reasons)
		Replace any plants, to maintain planting density	As required
		Remove sediment, litter and debris build-up from around inlets and forebays	Quarterly to biannually
	Occasional Maintenance	Infill and holes or scour in the filter medium, improve erosion protection if required	As required
		Repair minor accumulations of silt by raking away surface mulch, scarifying surface of medium and replacing mulch	As required
	Remedial Actions	Remove and replace filter medium and vegetation above	As required but likely to be >20 years
Detention Basins	Regular Maintenance	Remove litter and debris	Monthly
		Cut grass – for spillways and access routes	Monthly (during growing season), or as required
		Cut grass – mow meadow grass in and around dry basins at 100mm with 150mm max. Cut wet basins annually	Biannually (in July and September)
		Manage other vegetation and nuisance plants	Monthly (at start and then as required)
		Inspect inlets, outlets and overflows for blockages, and clear if required	Monthly
		Inspect banksides, structures, pipework etc for evidence of physical damage	Monthly

SuDS Feature	Maintenance Schedule	Required Action	Typical Frequency
		Inspect inlets and facility surface for silt accumulation. Establish appropriate silt removal frequencies.	Monthly (for first year), then annually or as required
		Check any penstocks and other mechanical devices	Annually
		Tidy all dead growth before start of growing season	Annually
		Remove sediment from inlets, outlet and forebay	Annually (or as required)
		Manage wetland plants in outlet pool – where provided	Annually
		Wetland vegetation – Cut (strim) at 100mm with cuttings removed to wildlife piles September – October	Annually or as required
	Occasional Maintenance	Reseed areas of poor vegetation growth	As required
		Prune and trim trees and remove cuttings	Every 2 years, or as required
		Remove sediment from inlets, outlets forebay and main basin where required	Every 5 years, or as required (likely to be minimal requirements where effective upstream source control is provided)
	Remedial Actions	Repair erosion or other damage by reseeding or re-turfing	As required
		Realignment of rip-rap	As required
		Repair/rehabilitation of inlets, outlets and overflows	As required
		Relevel uneven surfaces and reinstate design levels	As required
Attenuation Storage Tanks	Regular Maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then annually
		Remove debris from the catchment surface (where it may cause risks to performance)	Monthly

SuDS Feature	Maintenance Schedule	Required Action	Typical Frequency
		For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by any sediment, algae or other matter, remove and replace surface infiltration medium as necessary.	Annually
		Remove sediment from pre-treatment structures and internal forebays	Annually, or as required.
	Remedial actions	Repair/ rehabilitate inlets, outlet, overflows and vents	As required
	Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
		Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required.

Table 2: Maintenance Schedule for Inlets, Catchpits and Pipe Networks

SuDS Feature	Maintenance Schedule	Required Action	Typical Frequency
Inlets (Gullies and Kerb Drains), Catchpits and Pipe Networks	Regular Maintenance	Remove litter (including leaf litter) and debris	Monthly or as required
		Inspection of blockages, clogging, standing water and structural damage	Monthly
		Inspection of pre-treatment systems, inlets and perforated pipework for silt accumulation and establish appropriate silt removal frequencies	Six monthly
		Removal of sediment, oil, grease and floatables	Six monthly or as required
		Inspect and maintain flow control devices (hydrobrakes and orifice plates)	Every 4-6 months or as required after significant leaf fall and significant rainfall events
	Occasional Maintenance	Clear pipework of blockages	As required

SuDS Feature	Maintenance Schedule	Required Action	Typical Frequency
	Remedial Actions	Repair or Replace malfunctioning or damaged items	As required
	Monitoring	Remove inspection covers and ensure that water is flowing freely and that the exit route for water is unobstructed	Annually
		Undertake inspection after leaf fall in autumn	Annually
		Survey inside pipe runs for sediment build up and remove as necessary	Every 5 years or as required.

Table 3: Maintenance Schedule for Overflows and Flood Routes

SuDS Feature	Maintenance Schedule	Required Action	Typical Frequency
Overflows and Flood Routes	Regular Maintenance	Inspect and maintain to ensure that flow routes are clear of debris build up, litter and other obstructions.	Monthly or as required

1.5. Spillage – Emergency Action

Most of the potential spillages on site are of compounds that do not pose a serious risk to the environment if they enter in the drainage in a slow and controlled manner. Therefore, small spillages of oil or other known organic substances should be removed where possible using soak mats as recommended by the Environment Agency, with residual spillage allowed to bioremediate in the drainage system.

In the event of a serious spillage, either by volume or of unknown components, contact the Environment Agency immediately and isolate the spillage with soil, turf or fabric and block outlet pipes from chambers downstream of the spillage.

1.6. Protected Species Considerations

In accordance with CIRIA C609 section 7.6, maintenance of SuDS features should use appropriate methods at the least damaging time of year. Generally, the best time of year to do maintenance work, both due to protected species and as good practice for conservation purposes, is between September and November.

The specific wildlife considerations that need to be addressed are:

- All wetland edges should have an uncut fringe at the margin of the lower bank and the water during regular maintenance. Wherever possible, in any one year, only up

to 25% of the banks to wetlands should be cut. Some vegetation should also be retained around each wetland feature at any one maintenance visit.

- Damage to nesting birds during the breeding season (mid-March to mid-July) must be avoided. Where work within the breeding season is unavoidable it must be undertaken with hand-held tools to minimise disturbance and prevent accidental damage.
- Work should not be undertaken without first checking for bird nests and badger setts, which should not be disturbed if found to be occupied. Badgers and their setts are protected under the Protection of Badgers Act 1992. The legislation protects badger setts from being damaged and badgers from being disturbed whilst occupying their setts. The client should be informed if occupied badger setts or bird nests are found.
- Water voles are legally protected and it is an offence to damage, destroy, or obstruct access to their shelter at any time or to disturb them whilst they are using a particular area. Whilst water voles have not been found in any surveys to date, as per section 6.6 of the LEMP, colonisation of other protected species included Water Vole is to be encouraged within the Emm Brook Corridor and therefore care should be taken to ensure no water vole are in the area before maintenance is undertaken.
- Any maintenance work should be carried out at least 1 mile from wetland edges to protect banks and should be undertaken between September and November to avoid sensitive breeding times.
- Great Crested Newts are legally protected under the Wildlife and Countryside Act 1981. Work to ponds and attenuation basins should not be undertaken between February and August due to Newts visiting ponds to breed in early spring. They may remain in the pond until July, although young may remain until September. The work required to keep the SuDS detention basins in optimal condition is completely compatible with great crested newt conservation.
- All species of reptile are protected from killing or injury under the Wildlife and Countryside Act 1981. Grass snake and slow worm have been recorded within the site and therefore care must be taken during maintenance activities to ensure no reptiles are harmed.