

Monitoring and Management Protocol Link Road

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ONE HORTON HEATH

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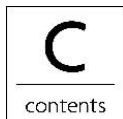
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1. Introduction

One Horton Heath is a masterplan development in Hampshire (National Grid Reference SU 48815 17105) that is being brought forward by Eastleigh Borough Council. Eastleigh Borough Council have set out the following vision for the development:

“People are at the centre of our vision – the community that already live and work in Horton Heath, and the people who will live and work within the village in years to come. This project will create an exemplar development which is integral to Horton Heath engendering pride and a strong sense of place. The local area, and by extension the Borough, will become Greener, Healthier, more Prosperous with a more diverse supply of Housing as a direct result of this project”.

The Link Road is an important component of the wider masterplan, providing an important transport link across the site. The Link Road comprises an area of 7.13 ha linking the southern and north-western boundaries, principally along the western side of the site, as identified in Figure 1.1.

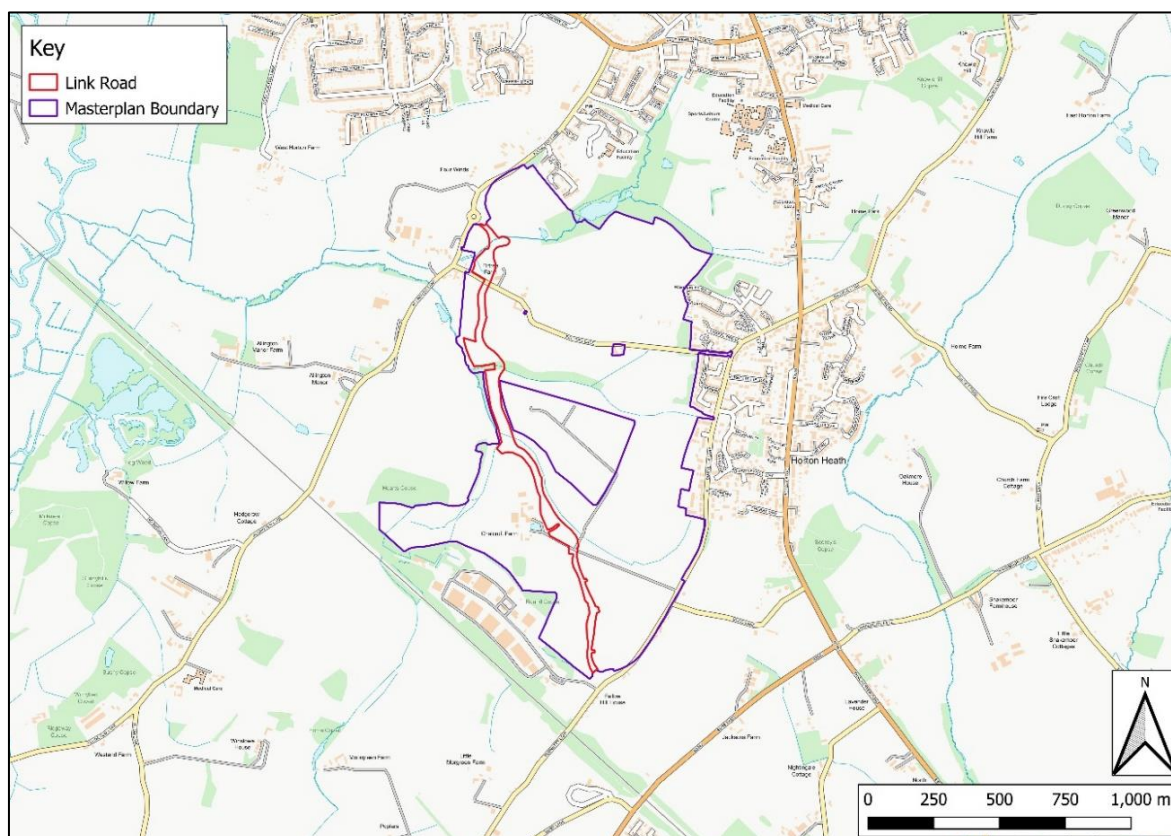


Figure 1.1 Link Road in relation to the One Horton Heath Masterplan Site (Contains Ordnance Survey data © Crown copyright and database right 2022)

1.1. Background

The release of sediments from development schemes within the Itchen catchment is of potential concern in relation to their impact on the riverine environment. The input of fine sediments is of particular concern in relation to the River Itchen Special Area of Conservation (SAC), with the chalk stream habitats, for which the site is designated, being vulnerable to sediment accumulation.

Sediment accumulation also has detrimental impacts on fish populations in the catchment, particularly in relation to salmonids with settlement of sediments reducing the quality of spawning habitats. Developments are, therefore, required to identify appropriate mitigation that minimises sediment losses into the Itchen catchment during construction and through operation of the scheme.

1.2. Purpose

The purpose of this Monitoring and Management Protocol is to set out the proposed monitoring that will be established to review the effectiveness of Sustainable Drainage System (SuDS) features in removing sediments and to set out the adaptive management measures proposed to be undertaken throughout the lifetime of the project.

The following sections set out the methodology by which monitoring will take place, including identification of the determinants to be monitored, locations for monitoring and frequency, and then the management measures required.

1.3. SuDS Design

All surface water runoff from positively drained development areas on the site is to be treated through the SuDS Management Train, consisting of Source Control techniques and Strategic SuDS Features. Runoff will pass through at least one Strategic SuDS Feature, with the management train providing the following treatment process as a minimum:

- Sediment forebays at inlets;
- Extensive wetland areas;
- Wetland planting;
- Secondary sedimentation areas prior to outlets.

The proposals include a series of SuDS features along the Link Road route, identified in Figure 1.2, comprising the following:

- Strategic SuDS Feature A (Detention Basin);
- Strategic SuDS Feature E (Detention Basin);
- Northern Bio-retention Swale;
- Southern Bio-retention Swale;
- Highways SuDS Feature (Detention Basin);
- Strategic SuDS Feature L1 and L2 (Detention Basins).

The proper implementation of a SuDS management/treatment train using a combination of upstream Source Control and Strategic SuDS Features will create greater resilience and allow the system to collect silt at various points, which can be removed during periodic maintenance. Creating a diverse SuDS scheme that encourages sedimentation, filtration and biological uptake throughout the site will reduce the outputs of sediments, nutrients and other pollutants from the site.

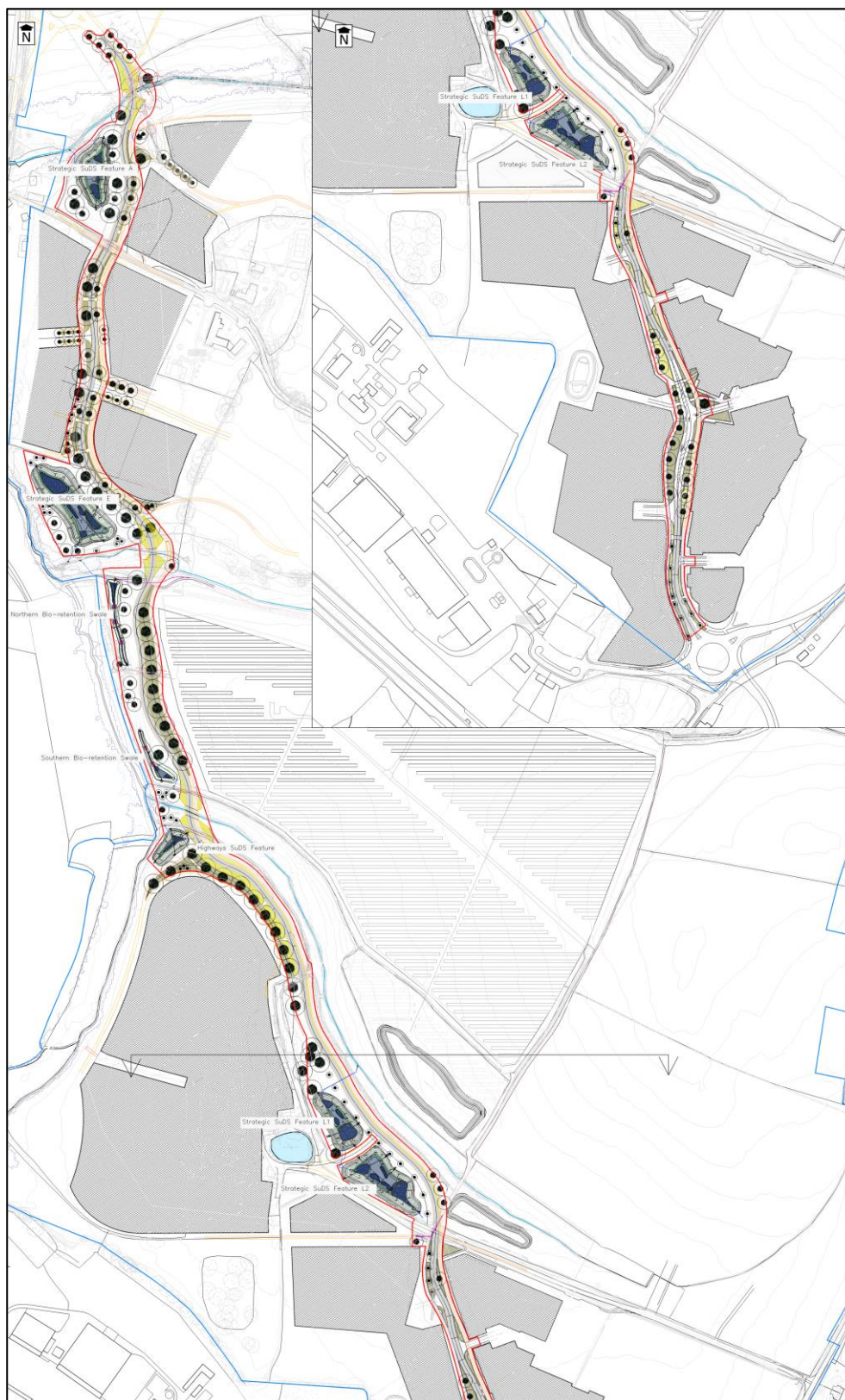


Figure 1.2 *Drainage Overview Plan identifying SuDS Locations within Link Road Application*
(From drawing G277/36 Rev D)

2. Methodology

2.1. Approach

Monitoring samples should initially be taken on a quarterly basis for the first five years following completion, to gain an accurate understanding of how the system is initially performing on a seasonal basis. Review of the effectiveness of the wetland systems will be carried out on an ongoing basis against the predicted performance at the design stage to ensure the SuDS are operating as expected, and determine whether adaptive management is required to address any issues associated with high sediment yields.

Where the SuDS features are operating effectively following the five-year sampling period, sampling will reduce to a single annual sample. However, where adaptive management is required this should be followed by a period of quarterly samples for a further two years to monitor the effectiveness of those corrective actions.

With all reasonable endeavours, samples will be taken during wet periods where possible, either during or soon after rainfall, to ensure flow is present in the system at the time of sampling. Samples for each SuDS feature should be taken on the same day, although all samples can be collected over a wider period of time.

2.2. Determinants

2.2.1. Flow

The water flow will be recorded at each of the inflow locations and at the flow control chamber downstream of the SuDS outlet, recording the water depth and velocity to establish the total flow in metres per second. Water flow monitoring will not be undertaken at outfall locations, with flows from the flow control chamber used to represent the flow rate.

A suitable flow meter should be utilised, however, the key consideration in kit determination is that the monitoring equipment is suitable for low-flow conditions and is able to be used from the surface. Under no circumstances should entry to an inspection chamber be attempted.

2.2.2. Sediments

Water samples will be collected from all monitoring locations for laboratory analysis of the following parameters:

- Total Suspended Solids (TSS);
- Total Dissolved Solids (TDS); and,
- Turbidity.

All samples will be taken from the surface and under no circumstances will entry to an inspection chamber be attempted. It is recommended that sampling from ground level is facilitated by taping sampling bottles (e.g. with filament strapping tape), one at a time, to a pole and lowering the pole into the chamber. Each bottle can be fastened to the pole by holding the bottle against it and wrapping tape tightly around the bottom and the top of the bottle as the bottle is held firmly to the pole. If the flow in the chamber is shallow, the bottle may have to be positioned horizontally with the opening of the bottle somewhat higher than its bottom.

To avoid disturbing channel bed solids, care should be taken not to scrape the bottle against the sides of the pipe.

Where samples are taken from outfalls, and they are safely accessible, then sampling can be facilitated by holding bottles with the bottle opening facing into the flow, taking care not to overfill them. However, if there is any doubt about the safety of the sampling location, then sampling can be carried out using a pole from a safe, stable location, as per the chamber sampling described above.

2.3. Locations

As discussed in Section 1.3, the proposals incorporate a series of SuDS features along the Link Road route through which runoff will be managed. Monitoring locations within each SuDS feature are identified in the following sections, comprising the first manhole upstream of each SuDS inlet, within the flow control chamber on the downstream side of the SuDS outlet and at the first location downstream of the Defender Unit, being either the main outfall to a watercourse or manhole (whichever is foremost).

2.3.1. Strategic SuDS Feature A (Detention Basin)

Strategic SuDS Feature A has two inlets, with upstream monitoring to be taken from the nearest manholes, which are c. 19 m to the north of the northern inlet and c. 31 m south of the southern inlet. The outlet for the SuDS feature is on its western side, with the flow control monitoring location identified in orange in Figure 2.1. Water samples and flow readings are required from each of these locations.

As there are no manholes downstream of the Defender unit, the final sampling location should be taken from the outfall location approximately 14 m to the north-west of the flow control chamber (identified in green in Figure 2.1). A water sample only is required from this location.

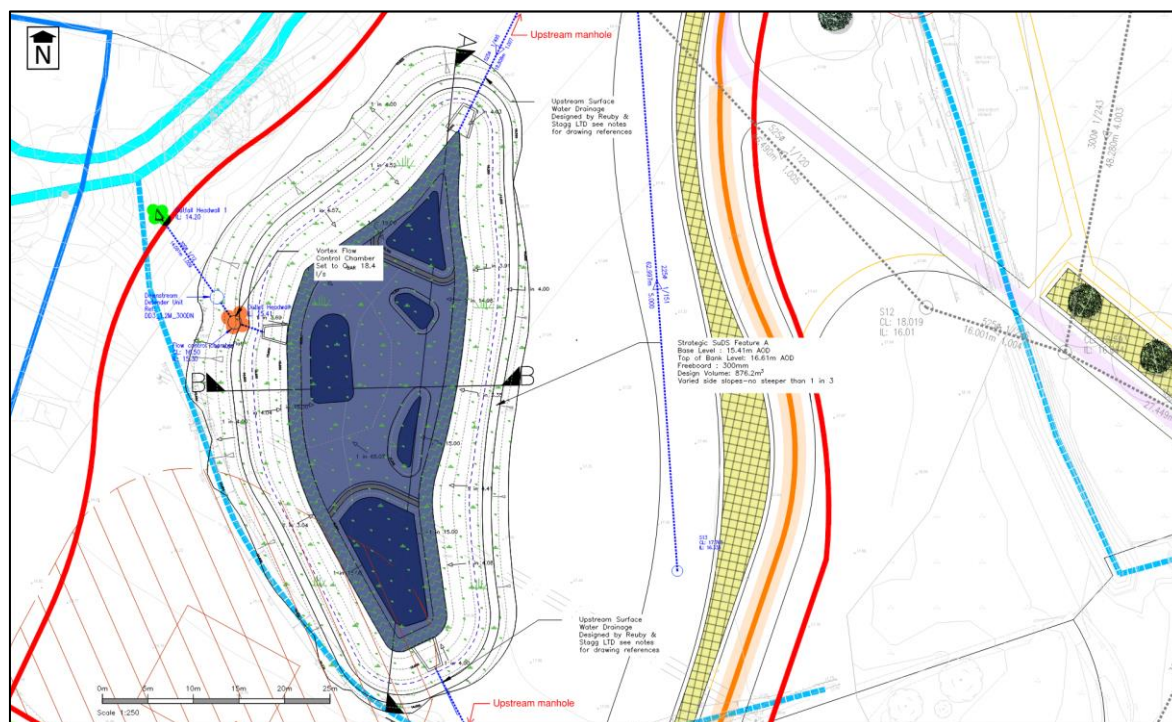


Figure 2.1 Strategic SuDS Feature A Monitoring Locations (from Drawing G277/26 Rev B)

2.3.2. Strategic SuDS Feature E (Detention Basin)

Although Strategic SuDS Feature E has three inlets, two of these allow for future drainage inputs and are not, therefore, relevant for the Link Road application and its initial establishment. Therefore, upstream monitoring from the relevant inlet will be taken from the manhole c. 23 m to the north-east of the inlet. The outlet for the SuDS feature is on the south-western corner, with the flow control monitoring location identified in orange in Figure 2.2. Water samples and flow readings are required from each of these locations.

As there are no manholes downstream of the Defender unit, the final sampling location should be taken from the outfall location approximately 20 m to the south-west of the flow control chamber (identified in green in Figure 2.2). A water sample only is required from this location.

Additional sampling upstream of the additional inlets would be required as drainage aspects of future parcels are brought online and will be addressed through a separate Monitoring and Management Protocol.

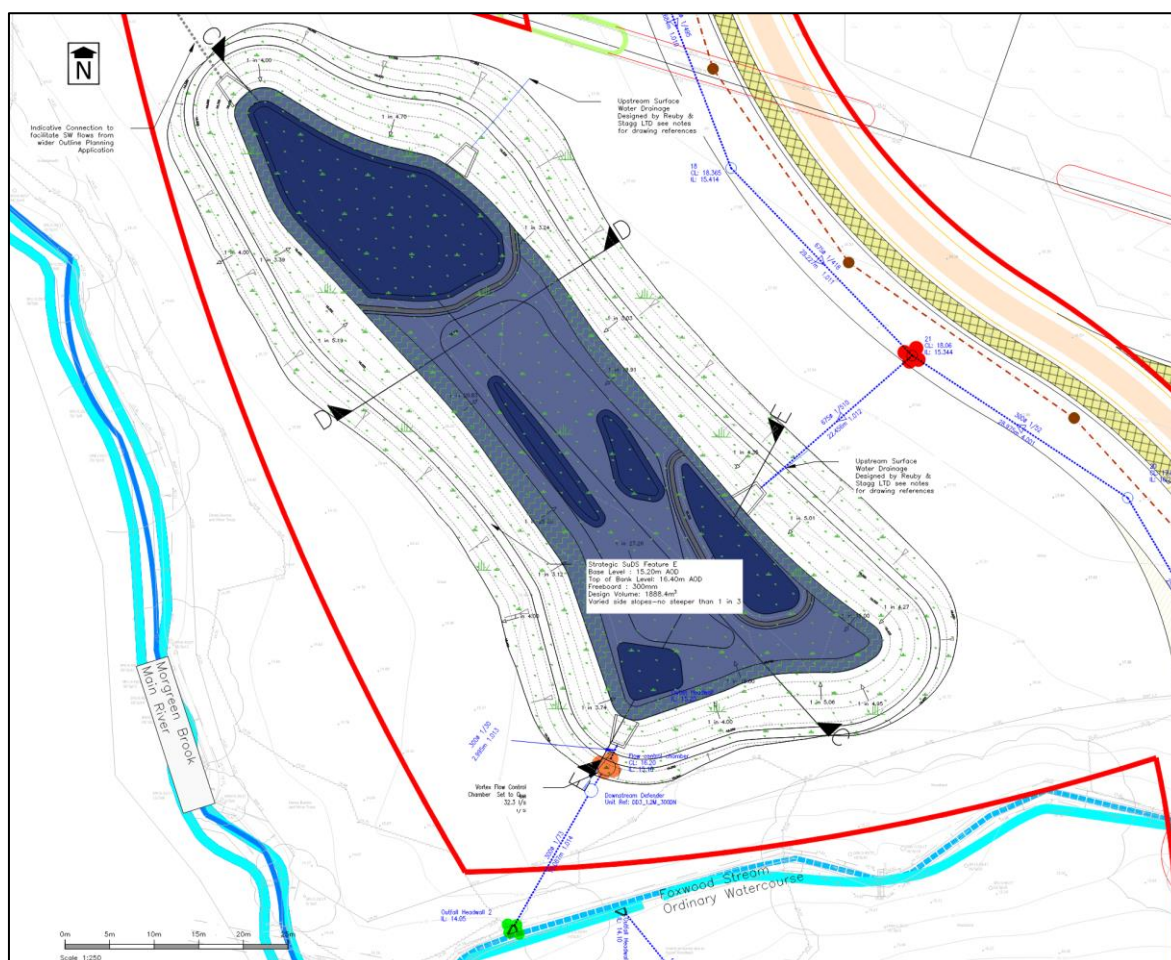


Figure 2.2 Strategic SuDS Feature E Monitoring Locations (from Drawing G277/26 Rev B)

2.3.3. Northern Bio-retention Swale

Although the Northern Bio-retention Swale has three headwalls identified, these are not included within the Link Road drainage design and form part of the wider drainage strategy. Run-off into the SuDS Feature from the Link Road is, therefore, diffuse and thus there is no opportunity for upstream monitoring to be undertaken. As a result, it is proposed to incorporate the upstream monitoring from the drainage channel at the lowest cascade in the system prior to collection within the main basin, identified in red in Figure 2.3. It is, however, proposed that this location is replaced with upstream monitoring locations as the drainage channels allowed for are brought into use in the wider drainage strategy.

The outlet for the SuDS feature is on the north-western corner of the SuDS Feature, with the flow control monitoring location identified in orange in Figure 2.3. Water samples and flow readings are required from each of these locations.

Downstream monitoring will be taken from the manhole identified in green in Figure 2.3, located c. 17 m to the north-west of the flow control chamber prior to the outfall into Foxwood Stream. A water sample only is required from this location.

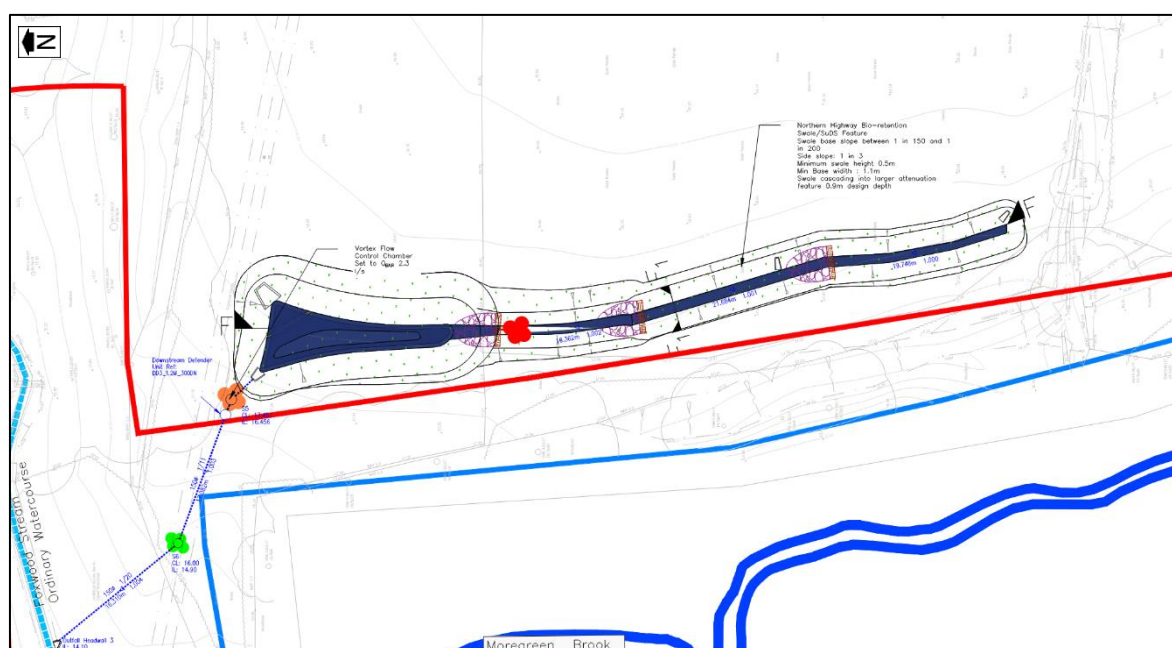


Figure 2.3 Northern Bio-retention Swale Monitoring Locations (from Drawing G277/27 Rev B)

2.3.4. Southern Bio-retention Swale

As with the Northern Bio-retention Swale, whilst the Southern Bio-retention swale has two headwalls identified, these are not included within the Link Road drainage design and form part of the wider drainage strategy. Run-off for the SuDS Feature from the Link Road is, therefore, diffuse and thus there is no opportunity for upstream monitoring to be undertaken. As a result, it is proposed to incorporate the upstream monitoring from the drainage channel at the lowest cascade in the system prior to collection within the main basin, identified in red in Figure 2.4. It is, however, proposed that this location is replaced with upstream monitoring locations as the drainage channels allowed for are brought into use in the wider drainage strategy.

The outlet for the SuDS feature is at its south-eastern corner, with the flow control monitoring location identified in orange in Figure 2.4. Water samples and flow readings are required from each of these locations.

As there are no manholes downstream of the Defender unit, the final sampling location will be at the outfall into the Toll Brook, approximately 20.5 m to the south of the flow control chamber (identified in green in Figure 2.4). A water sample only is required from this location.

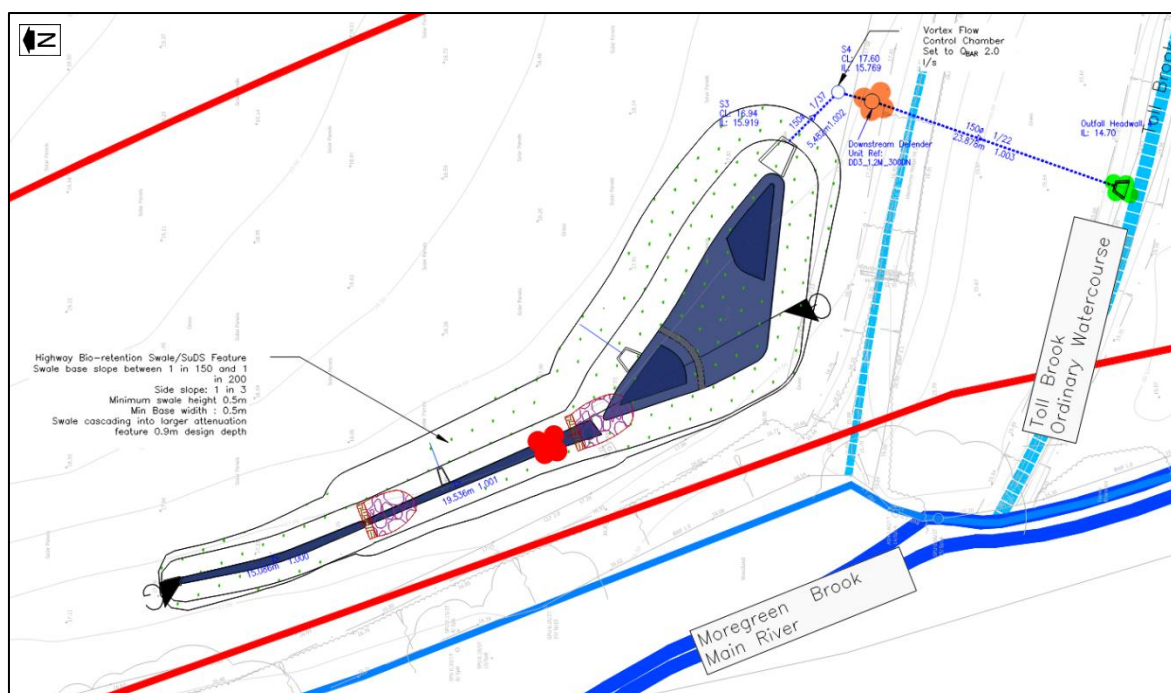


Figure 2.4 Southern Bio-retention Swale Monitoring Locations (from Drawing G277/27 Rev B)

2.3.5. Highways SuDS Feature (Detention Basin)

This SuDS Feature has a single inlet on the eastern side of the basin, with monitoring to be carried out at the manhole upstream of the inlet c. 7.5 m to the east. The outlet for the SuDS Feature is on the north-western side of the basin, with the flow control monitoring location identified in orange in Figure 2.5. Water samples and flow readings are required from each of these locations.

As there are no manholes downstream of the Defender unit, the final sampling location will be at the outfall, approximately 8 m to the north-west of the flow control chamber (identified in green in Figure 2.2). A water sample only is required from this location.

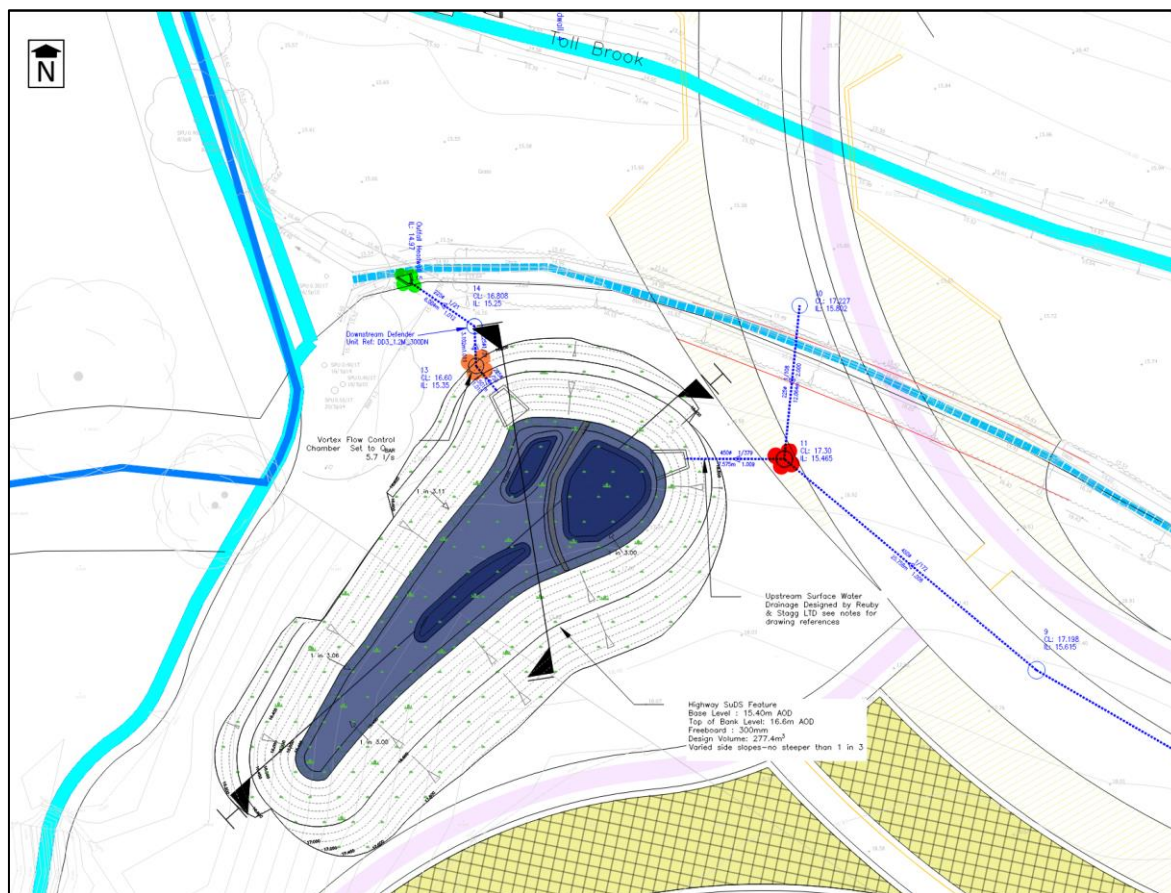


Figure 2.5 Highways SuDS Monitoring Locations (from Drawing G277/28 Rev C)

2.3.6. Strategic SuDS Feature L1 and L2 (Detention Basins)

Strategic SuDS Feature L1 and L2 comprises two interlinked detention basins, with one feeding directly into the other. A single inlet is located in the south-eastern corner of SuDS Feature L2, with monitoring to be carried out at the manhole upstream of the inlet c. 6 m to the south-east. The outlet from the combined SuDS Features is on the northern side of L1, with the flow control monitoring location identified in orange in Figure 2.6. In addition to these, monitoring will be undertaken between the two detention basins, from the flow control chamber identified in purple in Figure 2.6. Water samples and flow readings are required from each of these locations.

Downstream monitoring will be carried out at the manhole identified in green in Figure 2.6, located c. 38.5 m to the north-east of the flow control chamber and directly upstream of the outfall. A water sample only is required from this location.

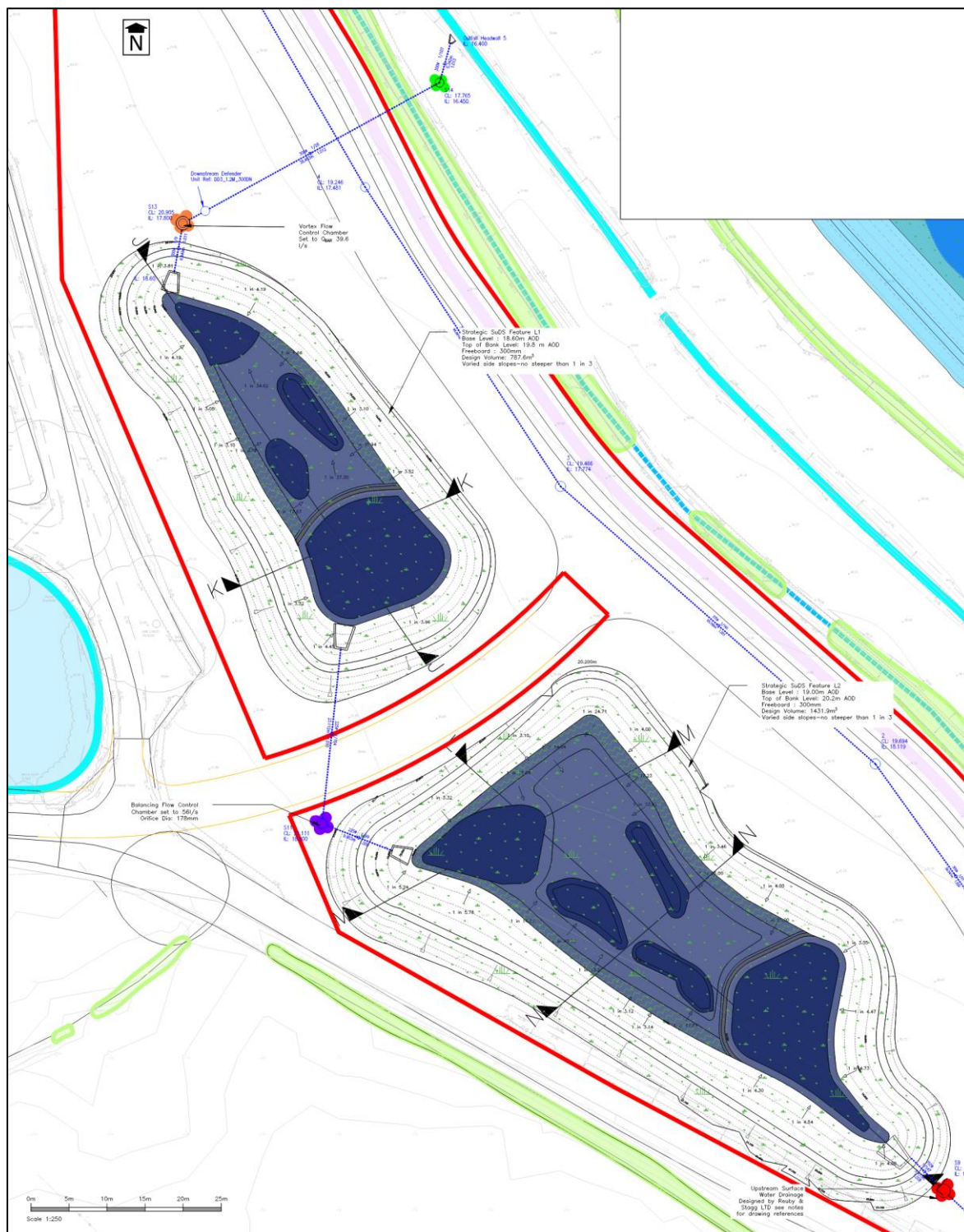


Figure 2.6 Strategic SuDS Feature L1 & L2 Monitoring Locations (from Drawing G277/29 Rev B)

3. Adaptive Management

Adaptive management will be required where the operation of the SuDS Features is shown in the monitoring to fall outside of the expected design parameters. It is expected that this will be as a result of changes in the system that lead to inefficient operation, with a range of corrective measures identified that can address this. Corrective measures have considered best practice recommendations, including the SuDS Manual¹ and Operation and Maintenance of Sustainable Drainage Systems research report², along with recognised best practice from other countries, notably the Virginia Stormwater Management Handbook³. Further information on maintenance practices can be found within these documents.

Appropriate triggers/thresholds within the monitoring results at which action should be taken are discussed in the following sections.

The monitoring locations identified in Section 2.3 have been selected to assist in pinpointing the likely whereabouts in which any issue arising is occurring, and therefore target initial review for corrective measures.

3.1. Sediments

3.1.1. Triggers/Thresholds for Action

There are currently no statutory standards for TSS, TDS or turbidity for SuDS monitoring in the UK or for surface watercourses within the Water Framework Directive (WFD)⁴.

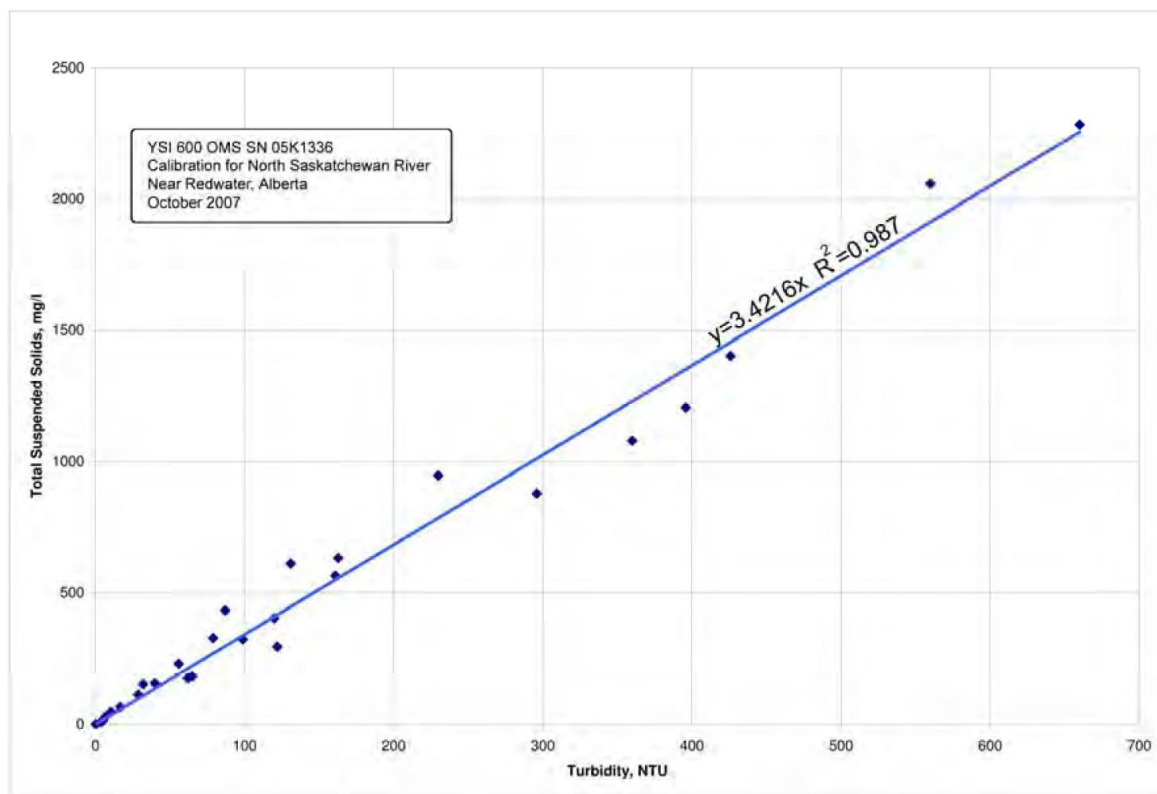
Turbidity

Turbidity ranges are cited within the WFD for transitional and coastal waters, in order to identify the appropriate application of dissolved inorganic nitrogen standards for such waters. Although primarily meant for coastal waters, it is recommended that these are used as indicative indicators for surface runoff quality passing through the SuDS features and reviewed following the initial 5-year monitoring period. The range of turbidity cited by the WFD is presented in Table 3.1.

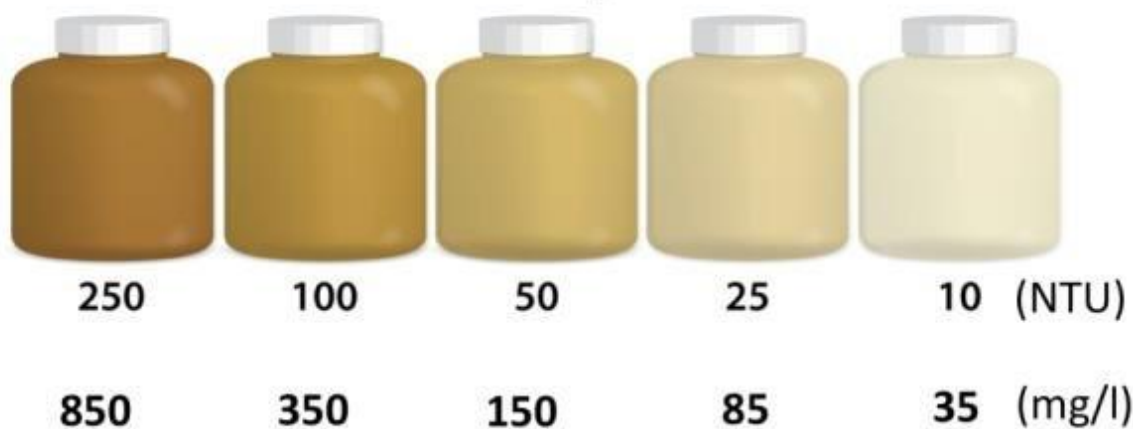
Table 3.1 *WFD Turbidity Criteria for identifying types of transitional and coastal water to which the dissolved inorganic nitrogen standards apply, together with Nephelometric Turbidity Units (NTU) derived from Nurjaya et al.*

Turbidity	Indicative turbidity in NTU derived from Nurjaya et al ⁵	Annual mean concentration of suspended particulate matter (mg/l)
Very turbid	>88	>300
Turbid	29-88	100-300
Intermediate turbidity	3-29	10-<100
Clear	<3	<10

Turbidity is typically measured in Nephelometric Turbidity Units (NTU), and a conversion from NTU to mg/l TSS can be made on a site-by-site basis, by taking simultaneous turbidity and TSS samples and constructing a calibration graph. In the absence of site specific data, the relationship presented by Nurjaya et al. and used elsewhere (e.g. by the Alberta Transportation Department⁶) can be used as an indicative relationship, as shown in Figure 3.1, with derived values also presented in Table 3.1.



Water Samples:



$$y = 3.4216x$$

$$R^2 = 0.987$$

$$y = \text{TSS (mg/l)}$$

$$x = \text{Turbidity (NTU)}$$

Figure 3.1 Alberta Transportation Indicative TSS/NTU Relationship

It is anticipated that a similar relationship can be built up with the initial 5-year seasonal monitoring campaign, which can be used to inform the need for adaptive maintenance. For example, using the above example:

- <3 NTU – no action;
- 3-<29 NTU – continue to monitor, but if turbidity continues in this range for 4 consecutive sampling occasions, then investigate upstream cause;
- 29-88 NTU - continue to monitor, but if turbidity continues in this range for 3 consecutive sampling occasions, then investigate upstream cause;
- >88 NTU - continue to monitor, but if turbidity continues in this range for 2 consecutive sampling occasions, then investigate upstream cause.

By adopting the above approach, then occasional storm events which may lead to elevated turbidity, will not unnecessarily instigate unwarranted remedial action.

Total Suspended Solids

With regard to TSS, it should be noted that the working party of EIFAC (European Inland Fisheries Advisory Committee) investigated the effect of water pollution, including suspended solids, during the development of Water Quality Criteria for European Freshwater Fish. The studies used to determine the criteria were subsequently summarised by Alabaster and Lloyd⁷ in which a series of tentative annual mean values for chemically inert solids in suspension were given for the maintenance of freshwater fisheries as follows:

- Less than 25 mg/l - no evidence of harmful effects on fisheries;
- 25 – 80 mg/l – it should usually be possible to maintain good or moderate fisheries;
- 80 – 400 mg/l – unlikely to support good freshwater fisheries; and
- Greater than 400 mg/l – only poor fisheries are likely to be found.

These criteria were taken forward into England and Wales law in 1997 under the Surface Waters (Fishlife) (Classification) Regulations⁸.

A further review in which the risk of suspended solids to fish habitat were assessed was regarding mining operations in the Yukon undertaken by the Canadian Department of Fisheries and Oceans⁹. The levels of risk were very similar to those outlined by the EIFAC working party and have been adapted below in Table 3.2 to be used as trigger levels for action within this SuDS monitoring protocol. It is anticipated that these may be modified, as deemed necessary, following review of the initial 5-year seasonal monitoring results.

Table 3.2 *Suggested TSS Trigger concentrations adapted from EIFAC and Canadian DFO¹⁰*

TSS Concentration	Action
> 400 mg/l	Unacceptable risk – investigate upstream cause immediately
200 - < 400 mg/l	High risk - investigate upstream cause immediately.
100 - < 200 mg/l	Moderate risk- monitor closely - if TSS continues in this range for 2 consecutive sampling occasions, then investigate upstream cause.
25 - < 100 mg/l	Low risk – monitor closely - if TSS continues in this range for 3 consecutive sampling occasions, then investigate upstream cause.
< 25 mg/l	Very low risk – no action required

Total Dissolved Solids

With regard to TDS, these are dissolved ions, including salts, minerals and metals, that can be found in all non-pure water sources. TDS can originate from a wide range of sources. Materials may leach into water from sewage, agricultural runoff or highways (e.g. de-icing salt). Natural sources, like soils and rocks, may also contain TDS.

Consequently a high TDS concentration in water is not necessarily harmful. For example, a TDS reading could be particularly high, but it might simply be because that water has a high mineral content.

The principal application of TDS is in the study of water quality for streams, rivers and lakes, although TDS is not generally considered a primary pollutant (e.g. it is not deemed to be associated with health effects) it is used as an indication of aesthetic characteristics of drinking water and as an aggregate indicator of the presence of a broad array of chemical contaminants. As such, TDS monitoring can act as a potential indicator for contamination, especially if a spike in concentration is observed above a lower background.

Although there are currently no statutory standards for TDS in surface water in the UK, US EPA Secondary Regulations advise a maximum contamination level (MCL) of 500 mg/L for TDS. When TDS levels exceed 1,000 mg/L it is considered unfit for human consumption. Changes in the amount of TDS can be harmful to aquatic organisms as the density of TDS determines the flow of water in and out of an organism's cell. Concentrations that are too high or low can affect fish growth or cause death. A maximum level of 400 mg/L is recommended for most freshwater fish. High TDS can also permit high volumes of algae bloom which detrimentally effect sensitive ecosystems.

Consequently, the concentrations presented in Table 3.3 are recommended to be used as trigger levels for action within this SuDS monitoring protocol. It is anticipated that these may be modified, as deemed necessary, following review of the initial 5-year seasonal monitoring results.

Table 3.3 Suggested TDS Trigger concentrations adapted from EIFAC and Canadian DFO¹¹

TSS Concentration	Action
> 1,000 mg/l	Unacceptable risk – investigate upstream cause immediately
400 - < 1,000 mg/l	High risk - investigate upstream cause immediately.
250 - < 400 mg/l	Moderate risk- monitor closely - if TDS continues in this range for 2 consecutive sampling occasions, then investigate upstream cause.
100 - < 250 mg/l	Low risk – monitor closely.- If TDS continues in this range for 3 consecutive sampling occasions, then investigate upstream cause.
< 100 mg/l	Very low risk – no action required

3.1.2. Corrective Measures

Sediment Dredging

Dredging and sediment clearance is an important part of the ongoing and long-term maintenance of the SuDS Features, as accumulation will reduce the efficiency of the system operation. The period following initial construction of the SuDS and upstream development plots can result in rapid sediment accumulation, however, sediment accumulation will also occur can occur post construction and dredging may be required as a corrective measure.

Sediment accumulation in swales is generally small in volume and can be removed using hand tools.

For detention basins, sediment may tend to accumulate around the control device, which increases the risk that either the orifice may become clogged or that sediment may become re-entrained into the outflow. Small volumes of sediment can be removed using hand tools, however, it may be necessary for excavation using a front-end loader or backhoe. Sediment removal will cause some damage to vegetation and potential disturbance to wildlife, including nesting birds, and therefore such activities should be scheduled outside the nesting season and re-establishment of vegetation or planting may be required.

Sediment forebays within detention basins provide pre-treatment for the removal of coarse sediments, and therefore dredging of these may be an important maintenance measure to remove sediment from the system. To assist in the review, inclusion of a fixed vertical sediment depth marker should be installed into each forebay. It is likely that sediment removal would need to be completed by excavation using a front-end loader, backhoe or long-reach excavator depending on the SuDS Feature design*. As before, sediment removal may cause some damage to vegetation, and therefore re-establishment or planting may be required.

Appropriate management and disposal of sediments dredged will be required, as these may be contaminated. It is, therefore, important that appropriate measures employed through regular maintenance of the SuDS feature are followed for the management and disposal of dredged material.

* As maintenance is a key component to the long-term operation of the SuDS Feature, consideration should be given to enabling direct access to the sediment forebay to simplify maintenance, ideally with hardened access or a staging pad. Such inclusion will help reduce complexities around maintenance and restrictions on equipment that can complete the maintenance operation.

Downstream Defender Maintenance/Clearance

Inspection of the Downstream Defender should be undertaken to review its performance and establish whether additional maintenance or clearance beyond the routine maintenance is required. Where sediment depths are greater than 75 % of maximum clean out depths specified by the manufacturer, sediment removal is required. A judgement will, however, be made as to whether cleanout is required regardless of sediment depth when considering the period of time to the next routine maintenance cleanout (*i.e.* if there are 9 months remaining and the sediment is at 50 % it may be prudent to clean out to avoid future issue).

Clearance of the Downstream Defender comprises removal of the sediments with a sump-vac from the access port in the top of the manhole which provides unobstructed access for a vactor hose and skimmer pole to be lowered to the base of the sump. It is, therefore, important that appropriate access and staging pad alongside the device is available for this process to be carried out.

Debris Removal/Clearance

This requires checking and clearing of litter and debris within the drainage system to reduce blockages and minimise pollution risks and sudden and high releases of sediments from SuDS features. This should include inspection of all outlets, inlets and overflows as well as the SuDS features themselves.

Sweeping Pervious Surfaces

A build-up of silt or other sediments on pervious surfaces can affect the infiltration capacity of these features, causing a greater level of run-off into the catchment. A review of pervious surfaces within the catchment upstream of the affected SuDS should be undertaken and, where necessary, sweeping of pervious surfaces using a brush and suction cleaner or rotating brush cleaner combined with power spraying using hot water should be undertaken to removal built up silt and sediment.

Structure Rehabilitation and Repair

A range of rehabilitation and repair measures may be required where damage or deterioration of the SuDS Feature has occurred and is affecting its operation, particularly following any major events such as high stormwater flows or drought. The rehabilitation and repair measures are generally specific to each SuDS feature type, and are thus discussed in turn below:

Detention Basin

Following a review of the SuDS Feature against its design, the following remedial actions may be relevant and should be enacted where relevant:

- Repair erosion or other damage to the banks by reseeding or re-turfing;
- Realignment of rip-rap or other erosion protection measures;
- Repair/rehabilitation of inlets, outlets and overflows; and,
- Relevel uneven surfaces and reinstate design levels.

Bio-Retention Swale

Following a review of the SuDS Feature against its design, the following remedial actions may be relevant and should be enacted where relevant:

- Repair erosion or other damage by re-turfing or reseeding;
- Relevel uneven surfaces or reinstate design levels;

- Remove build-up of sediment on upstream gravel trench, flow spreader or at top of filter strip;
- Infill any holes or scour in filter medium, and improve erosion protection if required;
- Remove and replace filter medium and vegetation; and,
- Repair or realignment of erosion protection measures around outlet headwall.

Following high silt load discharge during a single event it may be necessary for the system to be rehabilitated, which will comprise

- removal of turf;
- removal of accumulated silt (subject to toxicity test) and land apply or dispose of to tip;
- cultivate remaining topsoil to levels; and,
- reuse or returf area to agreed levels.

Pervious Surfaces

If the infiltration capacity of the pervious surfaces continue to be affected by sediment accumulation, consideration may need to be given to the rehabilitation of the system comprising:

- removal of permeable blocks and cleaning;
- removal of bedding grit and geotextile and safe disposal;
- replacement of geotextile and grit bedding layer, and replacement with clean permeable blocks; and,
- removal of accumulated silt from site (subject to toxicity test) and safe disposal.

4. Mechanisms for Delivery

The mechanisms for delivery are an important aspect of the Monitoring and Management Protocol, ensuring clear understanding regarding responsibility of implementation, adequate funding resource is available and clear understanding of what constitutes compliance in the results. The following sections outline these aspects.

4.1. Responsibility

The applicant will inform the Local Planning Authority of the relevant contact details for the responsible person prior to the commencement of development. The implementation of the Monitoring and Management Plan, as discussed, will be the responsibility of this person, and they will also ensure the results of the monitoring and any remedial action taken are reported to the local planning authority on an annual basis.

4.2. Funding

Eastleigh Borough Council's commitment to environmental protection is evidenced in the Vision for the development, which states that *"the development will be proactively planned to minimise the impact of the development on the existing community and environment during construction and throughout its lifetime. It will protect and enhance natural assets, integrating these with new places and creating a neighbourhood which supports green and sustainable lifestyles for all"*.

The implementation of the Monitoring and Management Protocol forms part of this commitment, ensuring the mitigation within the development continues to protect the River Itchen catchment through effective operation of Sustainable Drainage Systems. As a result, Eastleigh Borough Council are committed to ensuring appropriate funding is available for the implementation of the Monitoring and Management Protocol for the lifetime of the development (taken to be 80 years).

4.3. Mechanisms for Compliance

The identification of trigger thresholds for the implementation of corrective measures, discussed in Section 3, provides the mechanism through which compliance will be achieved.

5. Summary

The following flow diagram in Figure 5.1 provides a summary of the monitoring process and trigger thresholds where further consideration, investigation and corrective measures (maintenance) would be required to maintain effective SuDS operation.

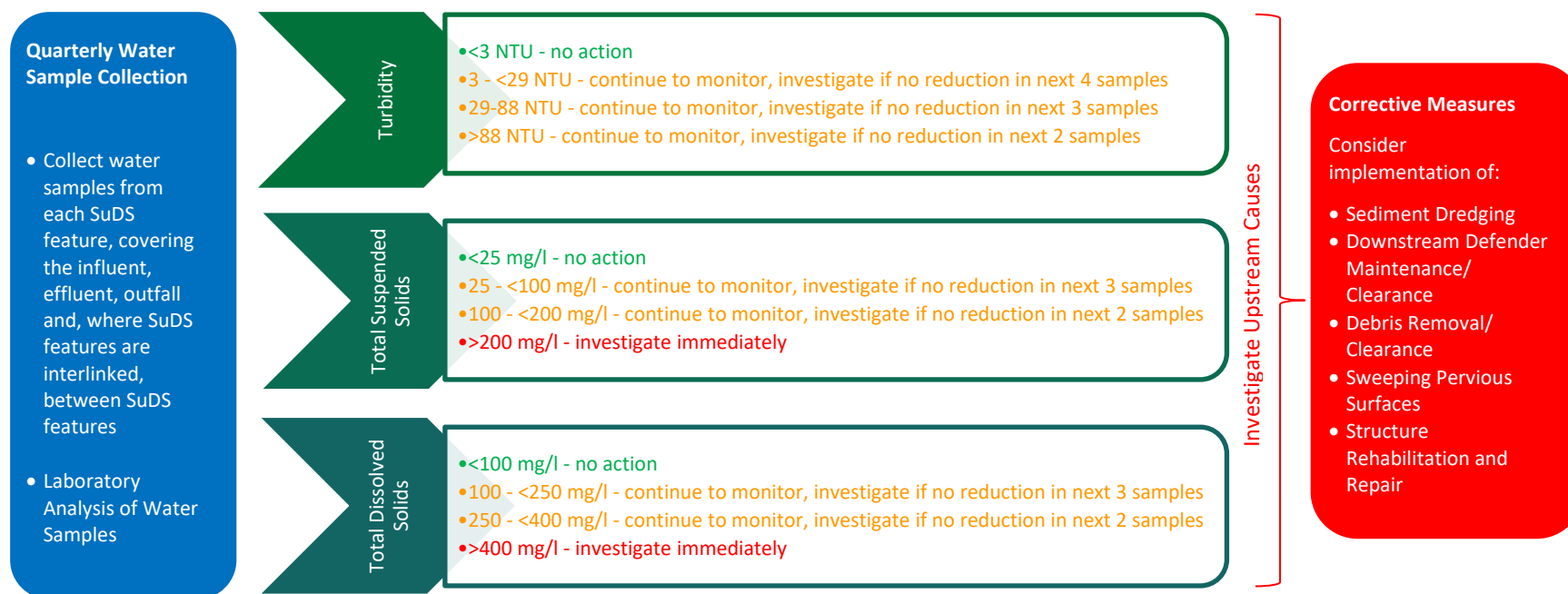


Figure 5.1 Monitoring Process and Trigger Thresholds for Action for Sediments (Turbidity, Total Suspended Solids and Total Dissolved Solids)

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