Appendix E

Telford & Wrekin Council LLFA Specific Appendix

E1 Overview

This appendix contains supporting information to the SuDS Handbook which applies specifically to the Lead Local Flood Authority (LLFA) Telford & Wrekin Council (TWC or 'the Borough'). Supporting information is referenced against the relevant chapter from the SuDS Handbook. Where the information in this appendix differs from that published in the Main SuDS Handbook, this is clearly highlighted in the relevant sections below.

E1.1 Local Governance

TWC is a Unitary Authority with combined County and District Council powers. The Council's remit as the Local Planning Authority (LPA) is to assess all planning applications for development within its unitary boundary.

E1.2 SuDS Delivery Partners

In addition to TWC responsibilities for the delivery of SuDS the following organisations also perform roles in the adoption and maintenance of drainage features across the Borough.

E1.2.1 Water and Sewerage Company

The Water and Sewerage Company serving the Borough is Severn Trent Water Limited.

Severn Trent Water are responsible for the adoption and operation of the public sewer network and also several large balancing reservoirs across the Borough.

E1.2.2 Strine Internal Drainage Board (IDB)

The Strine Internal Drainage Board (the Board) is located in the north of the Borough and covers an area of approximately 2092ha surrounding the village of Kynnersley. The Strine IDB fulfil the role of the LLFA for land included within the IDB boundary.

The channels maintained by the Strine IDB receive flows from the land within the IDB area along with several strategic channels conveying flows from urban Telford. These urban channels are extremely flashy in nature and represent a significant management difficulty for the Board.

The policies set out in this handbook should also be applied to any development on land managed by the Strine Internal Drainage Board.

E1.2.3 TWC Highways Development Control

The Highways Development Control Team are responsible for the Section 38 Highway Adoption process and are responsible for assessing SuDS that drain the public highway. More information can be found in Section E2.4.

E2 The Planning Process

E2.1 Planning Process and Timescales

As a Unitary Authority, TWC are both the LLFA and LPA for the Borough. The LLFA are a statutory consultee for any major development in the Borough however the LPA will consult the LLFA regarding any development where the provision of adequate drainage or increased flood risk may be an issue. A list of development types on which the LLFA are consulted can be found in section E2.3.

E2.1.1 Pre Application Discussion

In order to ensure that development proposals are well planned and that all the required information is submitted, TWC encourage developers to engage in the pre-application process.

Since May 2017, TWC has revised the way that pre-application advice is given, introducing pre-application workshops for smaller schemes, and engaging with the community through both Town and Parish Councils and Councillors. The revisions also introduce a charge to help recover some of the costs for providing this discretionary service.

The Council offers four types of pre-application advice depending on the scale of the development:

- Verbal advice - providing free planning advice on principles of development, made available through an appointment basis at Wellington Civic Offices.
- Permitted development confirmation - providing written confirmation whether planning permission is or is not required for any development.
- Pre-application written advice - consulting internal technical specialists, Parish/Town Councils and Councillors, providing a detailed written response to the proposed development, and the requirements for any planning application.
- Pre-application workshops - providing a workshop that includes technical specialists, to engage with the development, highlighting issues and identifying solutions. This is followed by a detailed written response including the requirements for any application. This is made available to all scales of development.

E2.1.2 How to Submit Your Application

Information on how to submit your planning application can be found on the Planning Applications and Guidance page on the TWC website. To support your application the following information will be required:

Major Planning Application

As part of the submission of any major development in Telford, a copy of the **Surface Water Drainage Proforma** in Appendix A of the Main SuDS Handbook should be completed and submitted as part of the planning application to the Planning Department at Telford and Wrekin Council.

Failure to submit a copy of the Surface Water Drainage Proforma will result in a holding objection from the LLFA until a completed proforma is submitted.

Minor Planning Application

As part of the submission of any planning submission for a single dwelling, or any commercial development creating over 250m of hardstanding in Telford, a copy of the **Minor Development Drainage Proforma** in Appendix F should be completed and submitted as part of the planning application to the Planning Department at Telford and Wrekin Council.

Failure to submit a copy of the Minor Development Drainage Proforma will result in a holding objection from the LLFA until a completed proforma is submitted.

E2.1.3 Liaison with Third Parties

As part of the planning process, TWC will consult, as necessary, the following statutory and non-statutory consultees:

- Severn Trent Water if the proposed SuDS system interacts with the public sewer system.
- Environment Agency if the proposed SuDS system will discharge directly to a watercourse classed as 'Main River', is within Flood Zones 2 or 3 or is within locally identified sensitive catchments (see Section E5.3).
- Telford and Wrekin Council Streets and Roads or Highways England if the proposed drainage system is likely to impact on existing road drainage.
- Canal & River Trust if the proposed SuDS system will discharge directly or indirectly to a Canal & River Trust owned waterway.
- Strine Internal Drainage Board if the SuDS system will discharge directly or indirectly to a watercourse managed by the IDB.
- Local authority colleagues, such as those providing environmental, health and safety and emergency planning advice, as required.

E2.2 Relevant Local Planning Policies

Section 14 of TWC's Local Flood Risk Management Strategy sets out a list of basic requirements that all development in the Borough should adhere to. This SuDS Handbook builds on these principals and provides developers with a much more detailed list of requirements. For this reason this document should be seen as the most up to date information.

The TWC Local Plan contains three policies that relate to water quality and conservation, foul water disposal, and flood risk management:

- Policy ER10 – Water Conservation and Efficiency
- Policy ER11 – Sewerage Systems and Water Quality
- Policy ER12 – Flood Risk Management

E2.3 LLFA Consultation Requirements

The Drainage and Flood Risk Team at TWC will assess any planning application that meets the following criteria:

- Any residential development of 1 dwelling or larger.
- Any commercial development resulting in the creation of over 250m² of hardstanding.
- Any development within a Flood Zone or that is mapped to be at risk of Surface Water Flooding.
- Any development that the Drainage and Flood Risk Team identify as having the potential to increase flood risk or impact on the surface water environment.

For any house extensions or other building works undertaken under permitted development rights, the Council's Local Development Order guidance document should be consulted.

E2.3.1 TWC Planning Conditions

The Drainage and Flood Risk Team have worked with the Planning Department to develop a list of approved standard drainage conditions. These approved conditions cover a range of issues that may arise as part of a planning submission. Where required, the Drainage and Flood Risk Team will also use bespoke or site-specific planning conditions where issues arise that cannot be addressed through the use of the standard conditions. Note that the use of planning conditions to request information on a site should be considered as a last resort.

As set out in this SuDS Handbook, all developers should engage with TWC at the earliest opportunity though the pre-application advice process to agree the principles of surface water drainage. This should then be used to identify the most suitable SuDS methods to effectively drain the site. In following this approach, a drainage design which does not require the use of planning conditions should result.

E2.4 Technical Review of SuDS Submission

The Drainage and Flood Risk Team (acting as the LLFA) will review and approve (where appropriate) any drainage design submitted as part of a planning application. The Drainage and Flood Risk Team will also provide the LPA with expert advice and recommend the discharge of any associated planning conditions as appropriate.

The Highways Development Control Team at TWC will also assess the suitability of the highways drainage network. These checks are in addition to the checks carried out by the Drainage and Flood Risk Team. Guidance on the design of drainage systems serving the public highway can be found in The Highways Design Guide on the TWC website. Following the relevant guidance should help avoid significant design changes once planning permission has been granted.

E2.5 Other consents which may be required outside of the Planning Process

In addition to the consents listed in Chapter 2.6 of the SuDS Handbook, the following consents are specific to TWC:

Consideration should be given to the Environment Agency Standing Advice for assessing flood risk. Direct consultation with the EA is recommended should clarification on this advice be required.

Severn Trent Water Limited provide sewerage services for the borough and information on Section 104 and Section 106 agreements can be found on their webpage, Building and Developing along with other more general information for developers.

Great weight should be given to conserving landscape and scenic beauty in Areas of Outstanding Natural Beauty (AONB), which have the highest status of protection in relation to landscape and scenic beauty. The area around the Wrekin is included in The Shropshire Hills AONB. Any development within the ANOB should be in accordance with the Shropshire Hills AONB Management Plan.

E3 Arrangements for the Maintenance and Adoption of SuDS

Ideally all new SuDS features within the Borough should be put up for adoption by a statutory undertaker. It is appreciated however that there are situations where this is not possible or financially viable. The following sections outline the current arrangements for SuDS Adoption within the Borough.

E3.1 Adoption of SuDS by TWC

Where SuDS features meet the requirements of this SuDS Handbook and have been designed in line with the requirements of the CIRIA SuDS Manual, TWC may be willing to adopt above ground SuDS on new developments. All SuDS put forward for adoption must be accessible and located in public open space. Due to the issues with inspection and maintenance TWC are not willing to adopt below ground storage tanks or geocellular storage. However, geocellular storage may be considered for adoption as part of adoptable highways soakaways (see section E3.1.3).

Should a developer wish to put a SuDS feature up for adoption it is recommended that they engage with the Drainage and Flood Risk Team at TWC at the earliest opportunity to agree the principle of adoption of each feature.

Developers should be aware that TWC are under no legal obligation to adopt a SuDS feature. In cases where TWC feel that the SuDS feature does not meet the criteria for adoption, or where developers are not willing to accept conditions added to the S106 agreement, TWC can refuse to adopt a feature. Should this occur the developer will be expected to provide alternative management arrangements prior to approval being granted. Where this is not possible TWC will request this information though a bespoke SuDS ownership and maintenance planning condition. Early engagement with TWC is recommended to avoid issues with a refusal to adopt.

E3.1.1 SuDS Commuted Sum

The adoption of a SuDS feature is dependent on TWC and the developer agreeing an appropriate commuted sum to secure the ongoing maintenance of the feature. For TWC to consider adopting a feature, the developer must be willing to provide a commuted sum to cover a minimum of a 50 year period.

As the design of a SuDS feature can change several times throughout the planning process the provision of a quotation for a commuted sum can only be requested once a detailed design for a SuDS feature has been approved by the LPA, and once all drainage conditions relating to the design of the feature have been discharged. Any request for a commuted sum prior to this will not be considered by the LLFA.

Should a developer wish to put forward a feature for adoption, a request for a commuted sum should be submitted to flood@telford.gov.uk. This request should include a copy of the approved drainage design in AutoCAD .dwg format with the feature(s) put forward for adoption (to include headwalls or other structures) clearly highlighted. This drawing should be supported by a full Maintenance Plan setting out all necessary maintenance activities and frequencies. The LLFA will aim to respond to this request within 21 days.

E3.1.2 Information Required for Adoption

In order for TWC to commit to the adoption of a SuDS Feature once a commuted sum has been agreed, the following information as set out in Appendix B of the CIRIA SuDS Manual will be required before any adoption can be completed:

SuDS Manual B8: Maintenance Plan

Before TWC will adopt a SuDS feature it is essential that they have a full understanding of the maintenance requirements and frequencies for each component of the drainage scheme put up for adoption. A SuDS Maintenance Plan should be submitted to TWC for approval once a detailed design has been agreed.

SuDS Manual B3: Health and Safety Risk Assessment Checklist

It is essential that any SuDS feature put up for adoption will not result in an unacceptable health and safety liability for TWC. The Health and Safety Risk Assessment Checklist must be submitted to, and approved by, the Drainage and Flood Risk Team once the detailed design has been agreed.

SuDS Manual B6: Construction Method Statement and Assessment

In order to ensure that each feature put up for adoption has been properly constructed TWC will require the submission of a Construction Method Statement and Assessment form. This form should be completed during the construction of each phase of the SuDS feature by a suitably qualified Building Control Officer.

Once the SuDS system is substantially complete and ready for inspection, the form should be submitted to TWC to be reviewed on site. At this time TWC will either confirm that the SuDS feature has been properly constructed or if additional remedial works will be required. The adoption process cannot commence until this document has been approved.

SuDS Manual B9: Adoption Handover Checklist

The adoption handover inspection will ensure that TWC have received all the necessary design and technical information to appropriately maintain the SuDS scheme, and for the developer to demonstrate that the scheme is in an appropriate condition to hand over. The adoption handover inspection should be carried out at the end of the 12 month defects liability period.

Once the adoption handover inspection checklist has been approved, TWC will issue the developer with a formal SuDS Adoption Certificate. At this point the S106 Agreement comes into force and the SuDS feature becomes the responsibility of TWC.

TWC will also require the developer to enter into the following agreements:

Adoption Agreement: Once the above information has been submitted and approved by TWC, a formal Adoption Agreement document will be produced that will clearly set out the extent and conditions of the adoption.

Twelve Month Maintenance Period: Once the Adoption Agreement has been completed and approved by TWC, a 12-month maintenance period will begin on the date of this approval. During this maintenance period the developer will be expected to maintain the SuDS feature in line with the agreed maintenance plan. Any defects that arise within this maintenance period must be reported to TWC and addressed by the developer. These defects can include minor issues associated with the installation of the feature, or wider issues that were not identified as part of the design process. Any defects within this 12 month period must be addressed by the developer at their own cost.

E3.1.3 Adoption of SuDS Serving the Public Highway

Under the Highways Act 1980, TWC have a statutory legal duty to effectively drain the public highway. In order to ensure that TWC are able to fulfil this duty it is important that the adopted highway drainage network is not reliant on third parties for an effective outfall.

Any drainage or SuDS system serving **only** the public highway must be put forward to TWC for adoption. Any system designed to only drain the public highway must meet the requirements of this SuDS Handbook, the CIRIA SuDS Manual, and the Telford and Wrekin Council Highways Design Guide. Any highway SuDS features will be adopted by TWC under Section 38 (S38) of the Highways Act 1980.

As part of the current S38 process TWC do not ask for a commuted sum to cover the adoption and ongoing maintenance cost of both the public highway and highway drainage infrastructure. This extends to any feature located in the highway with a recognised design code such as a Kitemark. The Highways Development Control Team will however ask for a commuted sum for any bespoke or non-standard feature put up for adoption. This includes any SuDS feature put up for adoption as part of the public highway.

Should a highway SuDS scheme be put forward for adoption, the TWC Highways Team and the TWC Drainage and Flood Risk Team should be contacted at the earliest opportunity to agree an appropriate commuted sum for ongoing maintenance.

Whilst TWC will not normally adopt below ground storage tanks or crates, they may be willing to adopt crated soakaway systems should the system meet the requirements of this SuDS Handbook, the CIRIA SuDS Manual, and the Telford and Wrekin Council Highways Design Guide. Interim information on the design and adoption of highway soakaways can be provided on request from TWC. Note that further guidance on appropriately draining the public highway in Telford will be produced by TWC in the future; please contact flood@telford.gov.uk for the latest information.

E3.1.4 Adoption of Permeable Paving

Although permeable paving should be considered as part of the drainage design on any new development, TWC are not currently willing to accept permeable paving on any section of highway put forward for adoption. The adoption of permeable paving as part of the adoptable public highway could provide significant water quality benefits and reduce the land take associated with site wide SuDS systems due to the treatment and storage of highway runoff in the sub base. TWC are (as of June 2019) undertaking an assessment into the suitability of permeable paving serving only the highway for future adoption. The test site has been constructed and its suitability is now being assessed by the Drainage and Flood Risk Team and Highway Team at TWC. Should this test site be successful TWC may consider adopting permeable paving in the future on minor low traffic estate roads The Drainage and Flood Risk Team should be contacted for further information.

E3.2 Adoption of SuDS by Severn Trent Water

Severn Trent Water are currently developing their SuDS guidance. Until this becomes available Severn Trent Water Limited should be contacted directly for any discussions regarding SuDS.

E3.3 Adoption of SuDS by Management Companies

It is the preference of both TWC and STW that new SuDS features are put forward for adoption by a statutory undertaker. It is however understood that financial pressures associated with some developments may mean that the required commuted sum associated with adoption may result in issues with viability. On these occasions TWC will accept the adoption of a SuDS feature by a management company on the condition that information is be submitted that guarantees the ongoing maintenance of each feature.

An appropriate level of information should be submitted with planning applications with regards to evidence of discussion with a proposed future maintenance provider. For example, at outline planning stage a developer will be expected to prove that the proposed maintenance provider is realistic e.g. the proposed design is in line with STW standards should the rest of the sewer network be put up for adoption, or that the design allows the entire system to be maintained by a management company. At detailed planning stage, the developer would be expected to provide more in depth information to support the information submitted during the outline stage.

The potential issues with management companies adopting SuDS are well documented; failure to undertake maintenance resulting in flooding both on and off a development site is a real concern. Where a lack of maintenance results in a risk of property flooding, TWC will engage with management companies to ensure that they are meeting their maintenance responsibilities. Failure of the management company to take appropriate action may result in enforcement action by TWC.

Although unlikely, the potential for management companies to collapse leaving unmaintained SuDS is a possibility. Should this situation arise TWC will work with residents served by the SuDS feature to establish a new management company as soon as possible. Whilst under no legal obligation to do so, TWC may consider undertaking remedial works to temporarily un-adopted SuDS features should there be an imminent risk of flooding to properties. TWC would not undertake works where complaints have been raised on the visual condition of a feature. To address these concerns, where a developer wishes to maintain a SuDS feature or any area of public open space through a management company, TWC will use planning conditions to request a SuDS Management Plan.

A SuDS Management Plan should set out long term design objectives, management responsibilities and maintenance schedules for each feature. The management company will be expected to adhere to this plan therefore it is important that any developer provides this plan to a perspective management company so they can price their work accordingly. TWC will also ask for a 24 hour emergency contact number to be provided as part of the SuDS Management Plan. It is possible that a SuDS system may fail outside normal office hours therefore each management company should consider how they would respond in an emergency.

The level of detail required for the SuDS Management Plan varies depending on the site of the site. For Major developments, a detailed SuDS Management Plan will be required. An example SuDS Management Plan can be found in Appendix B of the CIRIA SuDS Manual. For minor developments a completed TWC SuDS Ownership Form will be required. A copy of this can be found in Appendix G.

E3.4 Alternate Options for SuDS Adoption

Conservation Groups

Where a SuDS feature is designed part of a wider wildlife/nature reserve area, provides significant biodiversity improvements, or is designed to provide habitat for a protected species, conservation groups may be willing to adopt SuDS features. Any adoption would require the agreement of an appropriate maintenance plan and commuted sum. Contact Shropshire Wildlife Trust / Severn Gorge Countryside Trust / RSPB for further information.

Strine IDB

Where a SuDS feature is located in an area maintained by the Strine Internal Drainage Board, or where a SuDS feature discharges to a channel maintained by the IDB, the Board may be willing to adopt above ground SuDS features such as swales or attenuation basins. Any adoption would require the agreement of an appropriate maintenance plan and commuted sum.

E4 SuDS Design Guidance

In addition to that specified within the SuDS Handbook the following design criteria be considered prior to designing any SuDS system in Telford & Wrekin:

E4.1 SuDS Technical Design Guidance

All SuDS brought forward on developments in Telford & Wrekin should be designed and installed in line with the most up to date version of the CIRIA SuDS Manual. Any deviation from this design document must be agreed in writing with the LLFA.

E4.2 Rates of Discharge

TWC have adopted the policies set out in the National Standards S2 and S4 for peak flow and volume control from greenfield sites. Runoff rates specified by the LLFA will take precedent over the discharge rate set by STW as long as the rate set by the LLFA is more restrictive.

E4.3 Brownfield Peak Flow and Volume Control

As set out in policies S3 and S5 of the SuDS National Standards, the peak runoff and volume rates from any brownfield site must be restricted to as close as reasonably practicable to the greenfield runoff rate and should never exceed the rate of discharge from the site prior to redevelopment. National Policy S6 also states that where this is not "reasonably practicable", the runoff volume must be discharged at a rate that does not adversely affect flood risk.

For any brownfield development in Telford where a developer wishes to exceed the greenfield rate for both flow and volume control the developer must provide a viability assessment to prove that the greenfield rate is not achievable. In cases where TWC permit the developer to deviate from greenfield rates, an upper limit of a **50% betterment** on the existing rates of flow and volume produced by the site must be provided. In some cases, where development is located in an area of known fluvial or pluvial flood risk, TWC reserve the right to place additional runoff and volume restrictions on brownfield sites.

Note that as a supplementary requirement to National Standards S5 and S3, the following statement applies. For any brownfield development in Telford where a developer wishes to exceed the greenfield rate for both flow and volume control the developer must provide a Viability Assessment to prove that the greenfield rate is not achievable.

In cases where TWC permit the developer to deviate from greenfield rates, an upper limit of a 50% betterment on the existing rates of flow and volume produced by the site must be provided.

E4.4 Climate Change Allowance

The potential impacts of climate change on future rainfall and peak river flows are set out in the Flood Risk Assessments: Climate Change Allowances guidance document published by the EA. Whilst the guidance document sets allowances at a river basin, each LLFA is able set their own levels to better reflect their local circumstances. Telford & Wrekin is located within the Severn River Basin.

Peak River Flows

In situations where the risk of fluvial flooding at a site requires assessment or where river levels at a, TWC follow the processes set out by the EA. When developing any site where river modelling is required or requested by the LLFA, for example when setting drainage outfall levels, the LLFA should be contacted at the earliest opportunity to agree a suitable climate change allowance.

Peak Rainfall Intensity

The following increases in peak rainfall should be applied to the design of drainage systems serving new development in Telford, inclusive of those which include systems reliant on infiltration.

- Entirely residential: 40% (upper end allowance with a development lifetime of around 100 years)
- Mixed use residential and commercial where the commercial and residential units drain to a shared system or outfall: 40%
- Commercial: 20% (upper end allowance with a development lifetime of around 50 years)

E4.5 Network Modelling Software Requirements

As part of any detailed drainage design, the submission of a modelled drainage network will be required. In order for TWC to be able to fully assess the design this should be submitted in MicroDrainage (**.mdx)** format.

Should a development require the modelling of a watercourse or other feature, the modelling parameters should be discussed with the Drainage and Flood Risk Team prior to commencement.

The following MicroDrainage modelling parameters should be applied to any design. Any changes to these values must be agreed with the LLFA prior to submission:

E4.5.1 Design Criteria

UK Rainfall: The rainfall data used in any MicroDrainage model submission must be based on the most up to date FEH data available (currently FEH2013). FEH rainfall data for any site can be acquired though The Centre for Ecology and Hydrology website.

Maximum Rainfall: This parameter limits the maximum intensity of rainfall during simulation. This should always be set to 100.

Volumetric Run-off: This sets the percentage of rain falling on a development site that reaches the modelled drainage network. This should always be set to 1.

E4.5.2 Simulation Criteria

Synthetic Rainfall: As with UK Rainfall above, the most up to date FEH data must be used.

Areal Reduction Factor: The Areal Reduction Factor should always be set to 1. Any reduction in this figure reduces the rainfall intensity.

Additional Flow: No allowance for climate change should be added in Additional Flow. This should be set to 0. Climate change should be added when running the simulation.

MADD Factor: The MADD Factor simulates extra storage in a system that may not in reality, be present. For all MicroDrainage model submissions the MADD Factor must be set to 0.

E4.6 Connection to the Highway Drainage Network

TWC will not normally permit a connection from any development into the highway drainage network. The highway drainage network in Telford has been constructed to serve the highway only, and any increase in surface water flows as a result of an un-consented connection will inevitably lead to increased flood risk downstream. Should a developer wish to make a connection to the highway drainage network they should contact the Drainage and Flood Risk Team at the earliest opportunity to discuss the proposed point of connection.

For any connection to be permitted, the highway drain to which the connection will be made must be improved to an adoptable standard (up to the point where the system either interacts with the public sewer network, or reaches a surface water outfall) and then offered up for adoption to STW. The highway drain upstream of the new connection will remain in the ownership of TWC.

TWC will also expect the developer to model (in line with the requirements set out in E4.5) the impact of the new connection on the receiving highway drainage network to prove that any connection will not cause upstream flooding due to a loss of capacity. The results of this modelling should be submitted to TWC for approval. Should the modelling predict flooding upstream as a result of the proposed connection, the developer should agree any necessary upgrades to the highway drainage network with TWC before approval will be granted.

All costs associated with this process including any physical upgrading of pipework, manholes and outfall structures, must be borne by the developer. Failure to secure adoption by STW will result in TWC refusing a connection. The principle of a connection to the highway network must be approved prior to planning permission being granted. In order to support this requirement, a new Local Standard in addition to those set out in Appendix B will applied to development in Telford.

New Local Standard P – Connection to Highway Drainage Network

A connection to the existing highway drainage network will not be permitted unless the system downstream of the connection is put up for adoption by STW up to the point where this interacts with the existing public network or where it discharges to a surface water outfall.

A connection to the existing highway drainage network will not be permitted until model evidence has been submitted to show that any connection will not cause flooding to the public highway.

Any costs associated with this process including design fees, the physical upgrading of the highway drain to an adoptable standard, or those associated with the fee for adoption will be borne by the applicant.

E4.7 Location of SuDS Feature Components

The location of SuDS features must be carefully considered at the earliest opportunity. TWC will not approve any drainage layout where attenuation features serving more than a single property are located on land in private ownership or under allocated/private parking spaces. All features serving more than one property must be located in public or shared space.

As attenuation features are likely to form a strategic part of any on site drainage system, it is essential that they are always accessible. If located within private land, there may be difficulties in accessing manholes or control chambers during a flood event. Furthermore, should the replacement of a feature be required, any excavation in private property would result in un-necessary disruption for the homeowner. Whilst it may be possible to write access arrangements into property deeds, any disputes with homeowners may result in the need for enforcement action.

This approach also applies to developments where a housing trust or other organisation commissions a residential development. Although the site will technically be owned by a single body at the time of construction, there is no guarantee that this will remain the case throughout the lifetime of the development.

TWC do not permit the construction of surface water attenuation features under sections of the highway public highway unless these features are adopted by TWC or STW.

E4.8 Location of Control Structures

Any chamber containing a control feature should, wherever possible, be constructed in a location that facilitates access for future maintenance. For control chambers serving systems adopted by STW located under the public highway, the developer should, wherever possible, avoid locating control features directly on highway junctions or in other high traffic areas. Control chambers should be either set back from a junction or located in the highway verge. Control chambers serving private SuDS features must also be located in POS/shared space with access arrangements clearly identified.

E4.9 Design of Below Ground Storage

Where attenuation tanks/cellular storage are used for surface water attenuation it is essential that they are installed to the specifications as set out by the manufacturer. All tanks should include an inspection chamber and appropriately designed sump to allow access for jetting and maintenance. The installation of appropriate venting on each tank which allows air to escape as the tank fills with water is also required. Failure to install a vent on an attenuation tank will restrict its ability to function. Cellular storage systems without internal walls should be specified in all locations to facilitate inspection though the use of CCTV apparatus.

For any planning submission which utilises tank storage TWC will require the submission of a detailed design of the proposed feature showing how access for maintenance will be provided and the locations of vents.

E4.10 Location of Soakaways and Drainage Fields

Whilst infiltration should always be the primary method of surface water disposal, the use and location of soakaways on new developments should be carefully considered. A soakaway has a limited design life therefore each feature must be constructed in a location that facilitates its future replacement. Any shared soakaways that cross property boundaries will be difficult to replace. In this circumstance it is likely that one party will be more adversely affected potentially leading to disputes. In order to avoid this on new developments where soakaways will be used to drain residential properties, TWC require the construction of individual soakaways for each residential unit. Where this is not possible, any soakaways serving multiple units must be constructed in accessible shared space or public open space to be managed by a maintenance company. Trench soakaways that span garden boundaries will not be permitted.

Where the provision of a positively drained foul system is not possible the above requirements should also be met when designing foul drainage fields from package treatment plants.

E4.11 Use of Pumped Surface Water Systems

TWC **do not** permit the use of pumped surface water systems on any new development. Development should always be directed to areas where a gravity connection to a suitable outfall can be provided. This requirement has been put in place because, regardless of the number of safety features that can be installed, or how well maintained the pumps are, a pumped system is liable to failure. Failure is likely during a storm event when the pumped system is under greater stress. Any failure of a pumped surface water system will result in flooding at an accelerated rate as the contributing system will not have a positive outfall. This has the potential to put properties or adjacent land at increased risk. Developers must therefore be able to demonstrate that any surface water drainage system can be achieved without the need for pumping. In order to support this requirement, Local Standard N in Appendix B has been amended as shown below. This supersedes the Local Standard N in the Appendix B for all development in Telford.

The use of foul pumping stations are acceptable; wherever possible these should be put up for adoption by STW.

Amended Local Standard N – Use of Pumped Systems

Telford & Wrekin Council do not permit the use of surface water pumps on new development.

Development should always be directed to areas where a gravity connection to a suitable outfall can be provided. Areas that can not be drained by gravity should remain as Public Open Space.

Any proposed foul pumping stations should be built to an adoptable standard and put up for adoption by STW.

E4.12 Design of Foul Water Drainage Networks

The proposed method of foul water sewerage disposal should be identified and submitted for approval by the LPA. Any submission should include details of any agreements with STW. The design of the foul water drainage system should comply with the requirements of Building Regulations Part H. If a main foul sewer is not available for connection, full details and sizing of the proposed septic tank/ package sewage treatment plant including percolation tests for the drainage field soakaways should be submitted for approval. The EA's Foul Drainage Assessment Form (FDA1) should be included as part of the submission.

British Water Flows and Loads 4 should be used to determine the number of persons for the proposed development and the sizing of the septic tank/ package sewage treatment plant and drainage fields should be designed to cater for correct number of persons and in accordance with the Building Regulations Part H. These documents should also be used if other form of treatment on site is proposed.

E5 Local Environmental Constraints

The following environmental constraints should be considered prior to designing any SuDS system in Telford & Wrekin.

E5.1 Soil Conditions

Disposal of surface water via infiltration to ground should be the first consideration when developing a SuDS design. Preliminary information on whether a site may be suitable for infiltration can be obtained from the British Geological Survey (BGS) Infiltration SuDS Map (chargeable data).

An overview of the potential for SuDS techniques utilising infiltration in Telford was undertaken as part of the SFRA Phase 2 in 2008[1]. This assessment found that large areas of the southern part of the Borough (including the built area of Telford) experienced low rates of infiltration, and that in these areas the use of soakaways and SuDS features that utilise infiltration would be unlikely.

Areas in the north of the Borough however were found to have reasonable rates of infiltration. In these areas the use of soakaways and SuDS features that utilise infiltration are more likely to be acceptable.

The method of data collection for this assessment is described in the SFRA and was carried out at a broad scale (based on average rates of infiltration across 1km grid squares). For this reason, it is possible for favourable infiltration rates to be found across the Borough.

As set out in 3.3.2 of the Main SuDS Handbook, the results of soakaway tests to identify the potential for disposal of surface water via infiltration will be required as part of any outline or full planning submission. Any infiltration testing for the disposal of surface water should be undertaken in line with the requirements of BRE365. Any infiltration testing for the disposal of foul water should be undertaken in line with the requirements of Building Regulations Part H.

Any proposed infiltration drainage should also consider the presence of legacy mining features (e.g. open cast mining sites, spoil mounds and artificially made ground) that could affect the suitability of soakaway drainage. New soakaways in areas affected by mining could affect local ground stability or act as pathways for pollution and should therefore be assessed on a case by case basis. Made ground should only be considered suitable for soakaway drainage if the material is inert and the underlying natural ground conditions are able to infiltrate water.

[1] Halcrow Group (2008) Telford and Wrekin Council Strategic Flood Risk Assessment Level 2

E5.2 Land Instability in the Ironbridge Gorge

The geomorphological activity of the River Severn over thousands of years has formed the Ironbridge Gorge and these processes continue to the present day. The Gorge is characterised by its steep sides which force the River Severn to flow quickly through Ironbridge and Jackfield. The flows associated with the River Severn are considerable. As a result, there have been several large land slips affecting the Gorge. The most notable slip occurred in 1773 where an area of the Birches directly upstream of Ironbridge Power Station slipped into the river completely cutting off flows.

TWC have completed several large land stabilisation projects in the Gorge to address areas most at risk. These projects included the installation of thousands of steel piles drilled into the bedrock to stabilise the riverbanks. In addition to the land stability issues in Jackfield the Lloyds, large areas of Coalbrookdale are also potentially unstable. Areas around Jiggers Bank are also particularly susceptible to slippage.

Although the use of soakaways should always be the primary method of surface water disposal, the construction of these features within the Gorge may have an adverse effect on land stability. For this reason, unless it can be proven that the use of a drainage system utilising infiltration will not have a detrimental impact on land stability, the use of soakaways will not be permitted in the area identified in figure E1 below. A large scale plan of this can be seen in Appendix H

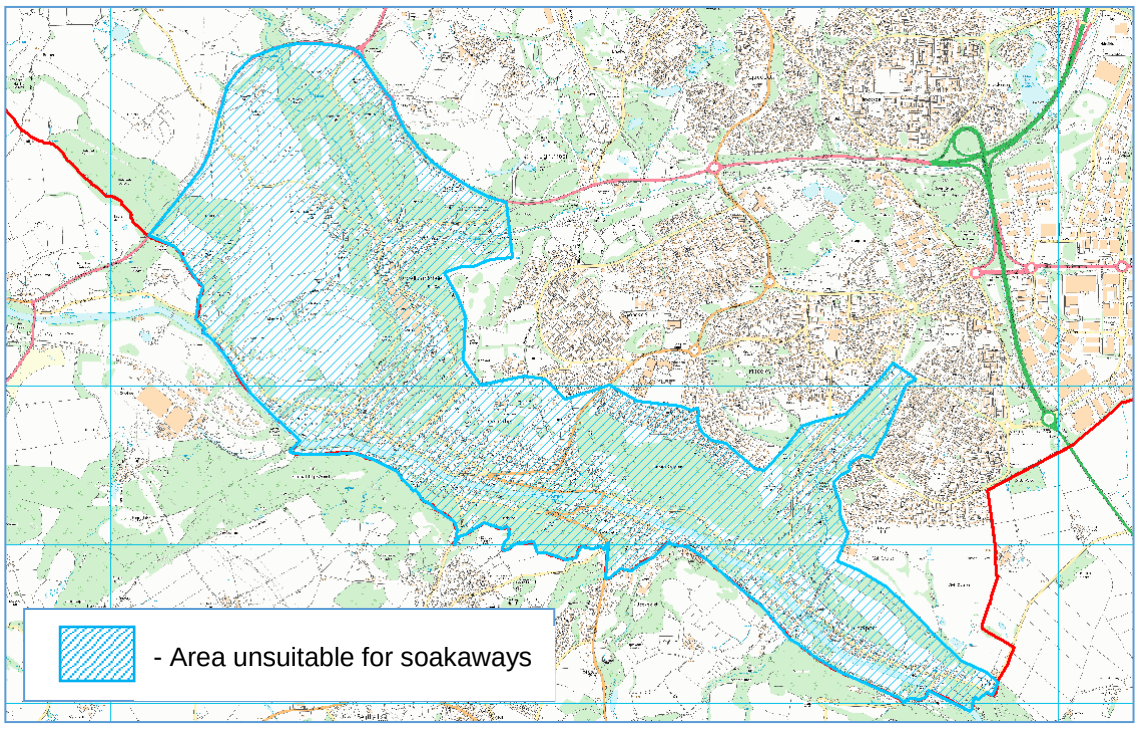


Figure E1 - Areas in Coalbrookdale, Ironbridge and Jackfield where soakaways may not be permitted © Crown copyright and database rights 2019 Ordnance Survey 100019694

Due to the industrial heritage of Telford, there are many old spoil mounds located across the Borough. Although development on these features is unlikely, the use of soakaways on or directly adjacent to any spoil mound will not be permitted by TWC. If you believe that your development is adjacent to a spoil mound, please contact the Drainage and Flood Risk Team.

E5.3 Areas of Known Significant Fluvial Flood Risk

The local topography of Telford means that the majority of the Ordinary Watercourses in the Borough begin in the built environment and flow out into rural areas. Many of these watercourse have been heavily modified along their length. As a result, the majority of catchments in Telford are extremely flashy in nature.

The Ordinary Watercourse catchments described in E5.3.1 and E5.3.2 are particularly susceptible to flooding. Any development in these catchments may be subject to additional planning conditions to ensure flood risk is appropriately managed. A plan showing the location of catchments in Telford can be found in Appendix 1 of the Local Flood Risk Management Strategy.

It should be noted that TWC may be aware of localised flood risk in other catchments which are not listed below. Should development come forward in these areas the LLFA will highlight this to a developer at the earliest opportunity, preferably though the process of pre-application advice as set out in section E2.1.1.

E5.3.1 Coal Brook

The Coal Brook has been designated a Rapid Response Catchment by the EA due to the speed and severity of flooding during extreme rainfall events. This high risk area also includes the Loamhole and Lightmoor Brooks, both of which form the upper catchment of the Coal Brook.

Figure E2 - Flash Flooding in Coalbrookdale (source: TWC)

E5.3.2 Wesley Brook

The flood risk associated with the Wesley Brook affects the town of Shifnal in Shropshire approximately 2km outside the eastern boundary of the Borough. The Wesley Brook is partly fed by Priorslee Balancing Reservoir however a large part of the catchment includes farmland to the north of Shifnal. Investigations into the sources and pathways for flooding in Shifnal are ongoing and it is important that any new development in Telford is properly managed to reduce the risk of flooding downstream.

E5.3.3 Strine IDB Urban Catchments

Large areas of productive farmland are at risk of flooding in the Strine catchment which is made up of a large area of low lying land in the north of the Borough. The Strine IDB acts as the LLFA for this area.

The Strine catchment is fed by several small urbanised catchments in the north of Telford which can respond quickly to intense rainfall. These areas include Trench, Donnington, Muxton, Lilleshall and Newport. Development in any of these areas may be subject to additional surface water storage or S106 requirements where it is identified that development may impact a vulnerable channel or structure either within or upstream of the Strine IDB area.

Figure E3 - Extensive Flooding of Farmland in the Strine IDB Area, Summer 2007 (Source: TWC)

E5.4 Surface Water Data

The EA Flood Risk from Surface Water map is the most relevant source of surface water flood mapping for the Borough. Flooding from surface water has the potential occur anywhere across the Borough. Groundworks associated with new development have the potential to create new flow paths across land which had previously not been at risk, and the construction of properties can sometimes result in increased risk where existing flow paths are interrupted. Exceedance flows both on site and off site should be considered from the earliest stage of site design.

In line with the requirements of section 163 of the National Planning Policy Framework (NPPF), TWC reserve the right to request an FRA for any development, regardless of its size, that may be subject to other sources of flooding, or where its development would introduce a more vulnerable use.

E5.5 Historic Environment

Telford and Wrekin is covered by the Shropshire Historic Environment Record. A database of the archaeological sites and monuments, historic buildings and historic landscapes is available on from Shropshire Historic Environment Record.

The Borough contains several conservation areas and also the Ironbridge Wold Heritage Site. The design of any drainage or SUDS features within these areas must be in keeping with the special character of the area and adhere to the relevant guidance documents such as The Ironbridge Gorge World Heritage Site Management Plan.

E5.6 Wildlife and Biodiversity

Proposed SuDS schemes should be informed by an ecological survey and assessment in line with the relevant Telford and Wrekin Council's Local Plan (Publication Version) Policy NE1.

Biodiversity should be considered as an integral part of the management and maintenance planning process for a SuDS scheme. This process should consider the species likely to inhabit the SuDS feature and ensure that any maintenance activities are not detrimental to the lifecycle.

Useful sources of information about local wildlife in Telford and Wrekin are:

- Shropshire Biodiversity Action Plan (2002)
- Shropshire Wildlife Trust
- Trees and Woodland Team
- Shropshire and Telford and Wrekin Local Nature Partnership
- Wrekin Forest Plan

E5.7 Public Open Space and Amenity

Landscape and Open Space related planning policies are set out within the Local Plan. TWC as the relevant LPA should be consulted in order to determine which features and areas of a proposed SuDS scheme can contribute to the Public Open Space requirement for a development.

Health and Safety Risk Assessments for SuDS should consider the whole site holistically to ensure that each element of the SuDS scheme is sited in the most appropriate location relative to other features on the site. For example, areas of open water adjacent to children's play areas may not be appropriate.

E5.8 Landscape

Information on the landscape characters within Telford and Wrekin can be found in TWC's Landscape Sensitivity Study. Reference should also be made to local design and development guides as well as any relevant Supplementary Planning Documents (SPD).

Telford & Wrekin is located within the West Midlands area which encompasses a number of National Character Areas. This information is freely available on the gov.uk website and identifies opportunities for enhancement within each character area. Telford and Wrekin covers three separate National Character Areas (NCA):

- NCA61 – Shropshire, Cheshire and Staffordshire Plain
- NCA65 – Shropshire Hills
- NCA66 – Mid Severn Sandstone Plateau

E5.9 Water Quality and the Water Framework Directive

Telford & Wrekin is wholly within the River Severn River Basin District.

E5.9.1 River Severn - River Basin Management Plans

The Severn River Basin Management Plan highlights diffuse pollution from urban sources as a key issue in all catchments within the river basin area. It emphasises the need to minimise the risk of pollutants from new developments entering watercourses. Objectives relevant to the creation of SuDS within a development include:

- Promote the wide scale use of SuDS and provide guidance for integrating development and water planning
- Follow the SuDS Interim Code of Practice and comply with published advice for operators.

E5.10 Riparian Responsibilities

The roles and responsibilities of riparian landowners are clearly set out in the EA's Owning a Watercourse webpage.

As set out in section 15.7 of the Local Flood Risk Management Strategy, failure to comply with these responsibilities may result in TWC taking enforcement action under Section 25 of the Land Drainage Act 1991.

Any works undertaken by riparian landowners on any section of open channel in the Borough may require Ordinary Watercourse Consent from either TWC, or and Environmental Permit from the EA.

E5.11 Consenting Works on Ordinary Watercourses

TWC as the LLFA are now responsible for the consenting of any works to Ordinary Watercourses within the Borough in any areas not covered by the Strine IDB.

This responsibility follows commencement of paragraphs 32-34 of Schedule 2 of the Flood and Water Management Act 2010, which makes amendments to Section 23 of the Land Drainage Act 1991.

The responsibility for permitting works on Main Rivers with the Environment Agency.

E5.12 Culverting of Ordinary Watercourses

As se out in Chapter 17 of the Local Flood Risk Management Strategy TWC will generally be opposed to the culverting of watercourses. Any application to culvert a watercourse will be considered in accordance with the Council's risk based approach to permitting and will only be approved if:

- There is no reasonably practicable alternative, or
- The detrimental effects would be so minor that a more costly alternative would not be justified.

In all cases where an application to culvert a watercourse is approved, applicants must provide adequate mitigation measures and accept sole ownership and responsibility for future maintenance.

These principles are supported by Policy 22 of the Local Flood Risk Management Strategy.

E5.13 Useful Resources and References

TWCs Local Flood Risk Management Strategy

Telford & Wrekin Local Plan

TWC Development and Flood Risk

Appendix F

Minor Development Drainage Proforma

The below proforma sets out the evidence required as part of a Minor Planning Submission for a single dwelling, or any commercial development creating over 250m of hardstanding, to demonstrate that both the National and Local Flood Risk and SuDS Standards have been complied with.

The applicant or agent acting on their behalf should complete the below tables and submit this as part of the application documents. An application will not be validated without this information.

	Yes/No	
Is the site within an area at risk of flooding from rivers or surface water flooding? Refer to the EA's Mapping checking both flooding from **rivers** and **surface water**: https://flood-warning-information.service.gov.uk/long-term-flood-risk/map		
Does the site require an FRA? If the site is in an area of mapped flood risk (see above) a Flood Risk Assessment (FRA) will be required in line with the requirements of the National Planning Policy Framework (NPPF). Has an FRA been submitted?		
Has a Drainage Layout been submitted?		

What is the pre-development rate of surface water discharge? Refer to the UKSuDS Greenfield runoff rate estimation tool: http://www.uksuds.com/drainage-calculation-tools/greenfield-runoff-rate-estimation	**l/s**

How will Surface Water be Drained?	Yes/No	
1: Soakaway or other infiltration feature		
1a: If to Soakaway have infiltration tests been submitted? (see section 3.3.2)		
2: Watercourse or other Waterbody		
2a: If to Watercourse is Ordinary Watercourse Consent Required: http://www.telford.gov.uk/info/20423/land_stability_flooding_and_drainage/722/ordinary_watercourse_regulation		
3: Public Sewer (Please identify this sewer on the drainage layout plan)		
4: Other Please specify and reference relevant drawing numbers:		

What is the proposed post-development rate of surface water discharge? If site is Greenfield development please use 5 litres per second. If site is Brownfield development you are required to restrict the site to as close to greenfield as possible (see section E4.3).	**l/s**

How will surface water be attenuated on site to achieve this rate of discharge? Please specify and reference relevant drawing numbers: N.B. SuDS features should always be located in an area of POS or shared space.	

What allowance for climate change has been used in the drainage design? Climate change guidance can be found on the EA's website: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances	**% Climate Change**

Planning Site Name/Location:	
Applicant/Agent Name:	
Applicant/Agent email:	
Date Submitted:	

Appendix G

Telford and Wrekin Council SuDS Ownership Form

Whilst Telford and Wrekin Council (TWC) are willing to adopt approved SuDS features (upon agreement of an appropriate commuted sum), if a developer chooses to maintain the SuDS feature through a management company it is important that TWC are aware of who this management company is should there be an issue with the SuDS feature, or if required maintenance is not being properly carried out.

For this reason in order to discharge the SuDS maintenance planning condition the following tables should completed and submitted to the planning officer. Please be aware that this information will be used in the creation of the TWC Asset Register under Section 21 of the Flood and Water Management Act:

Site Name/Location	
TWC Planning Reference Number	
National Grid Reference of SUDS Feature(s)	
Type of SUDS feature(s)	
SUDS Maintenance Requirements Please outline what maintenance operations will be required to ensure this feature remains operational over its design life.	
Maintenance Frequency Based on the operations above please outline the required frequency of each operation.	

As the management company will be responsible for undertaking the maintenance activities identified above it is essential that TWC are able to contact them in the event of an emergency, or if feature is not being properly maintained.

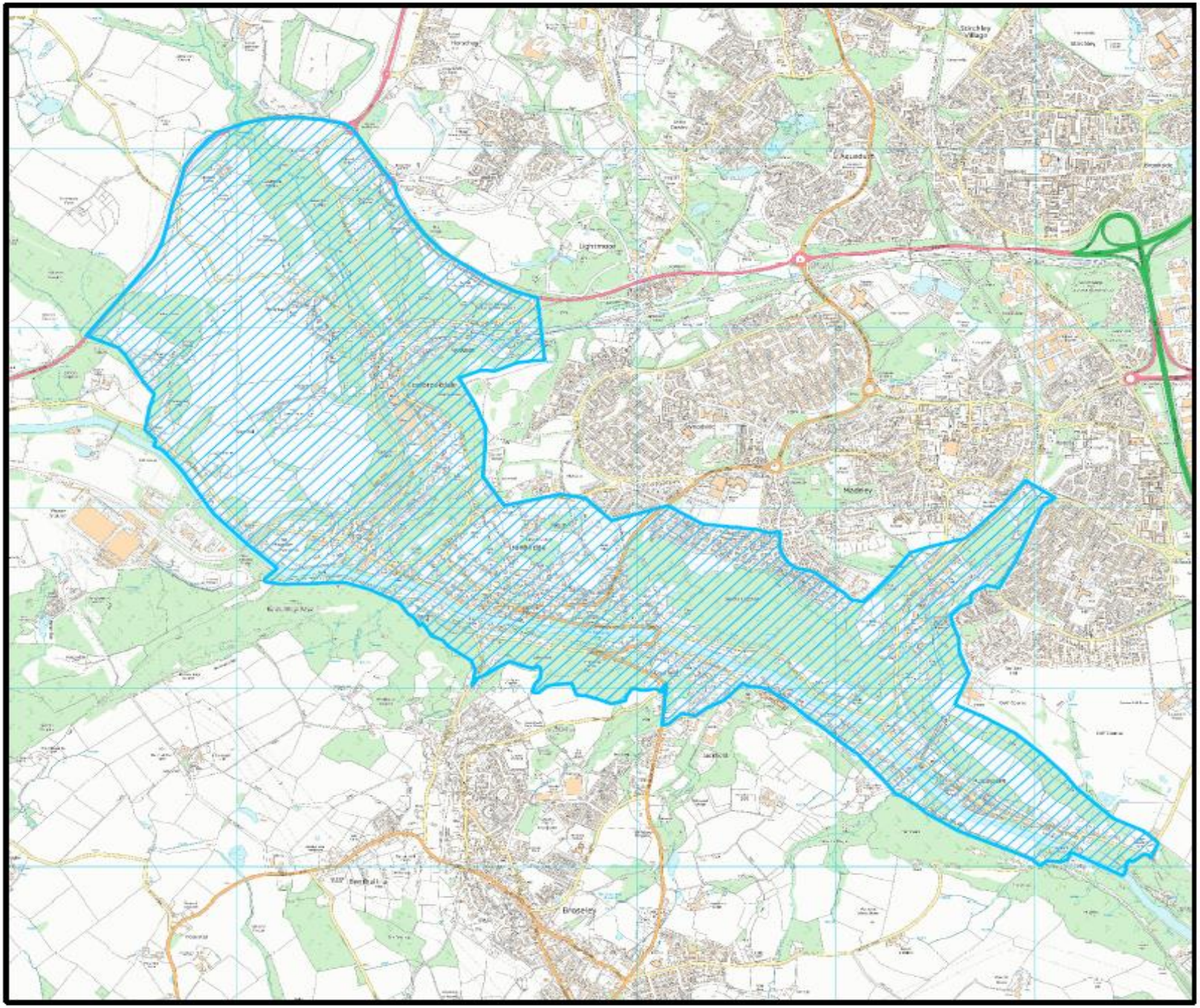
Management Company Details	
Company Name	
Address	
Telephone Number	
Email	
24hr Emergency Contact Number	

Whilst the management company should be responsible for the day to day maintenance of the feature, should this company cease to trade or go into administration this may result in an “orphaned SUDS feature”. Should this occur TWC would look the land owner to either make alternate arrangements or to continue maintenance themselves. Failure to do so may result in enforcement action. For this reason please provide details on the owner of the land on which the SUDS feature is located.

SUDS Feature Ownership Details	
Company/Individual Name	
Address	
Telephone Number	
Email	
24hr Emergency Contact Number	

Appendix H

Areas Unsuitable for Infiltration



Jonathan Rowe
Assistant Director of Neighbourhood & Leisure Services
Highways & Engineering
Darby House
Lawn Central
Telford
TF3 4JA

Project Title: SuDS Handbook

Drawing Title: Area Unsuitable for Infiltration

Fig No:	**Scale: NTS**
Date: 12/10/18	**Drawn By: JAB**

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