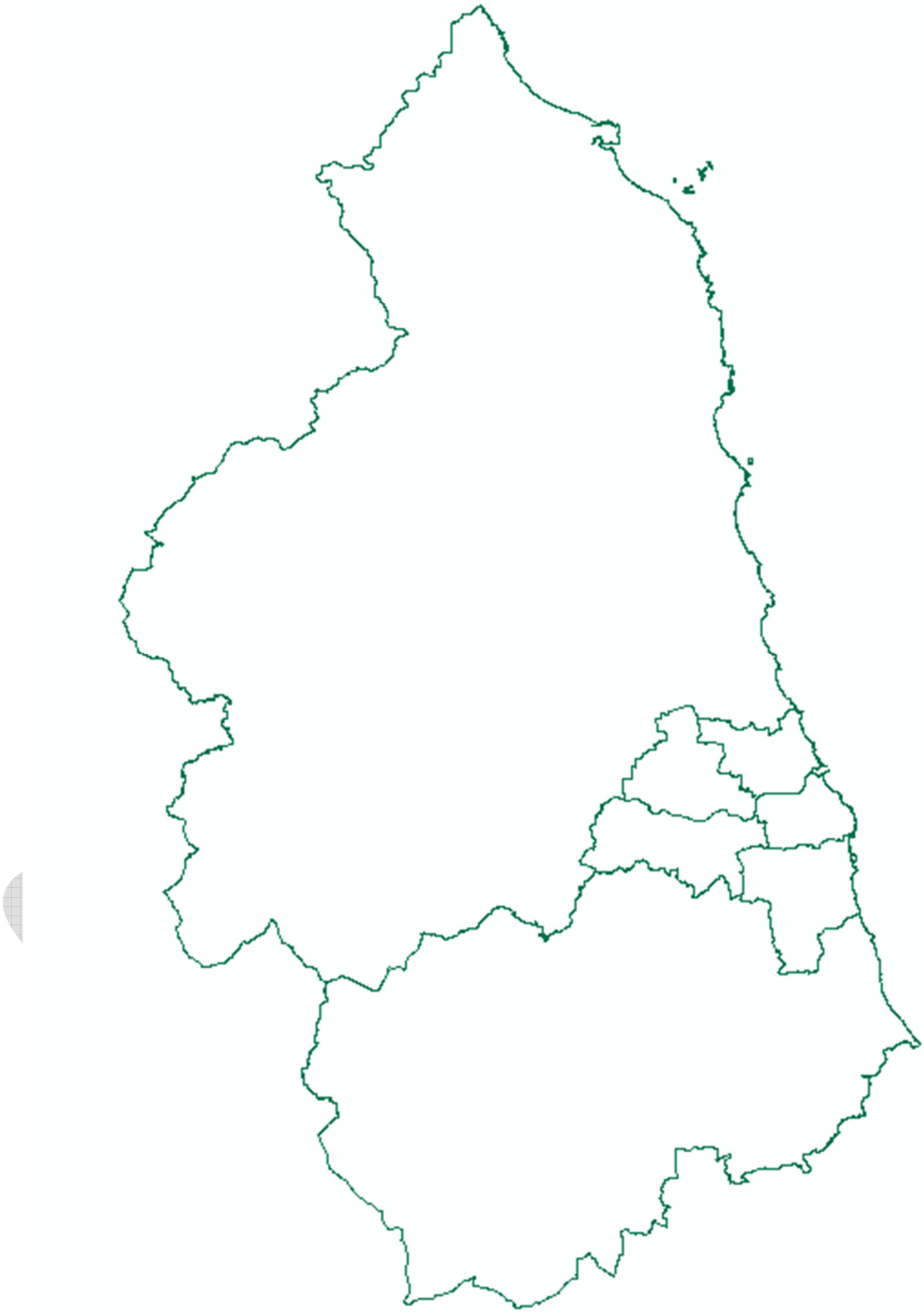
North North-East Lead Local Flood Authorities

Sustainable Drainage (SuDS) Local Standards and Checklist



The North-North-East Lead Local Flood Authorities (NNE LLFA) consist of Durham, Gateshead, Newcastle, Northumberland, North Tyneside, South Tyneside and Sunderland.

Version	Date	Author	Comment
Final draft	October 2019	Ian Dalgleish (SCC)	For LLFA review

Contact details for each Lead Local Flood Authority are as below. Please contact the Local Authority directly if you cannot contact the persons named below.

Local Authority	Name	Email	Phone
Durham			
Gateshead	Peter Burrows	peterburrows@gateshead.gov.uk	0191 4333448
Newcastle			
Northumberland			
North Tyneside	Andrew Burnett	Andrew.Burnett@northtyneside.gov.uk	0191 6436103
South Tyneside	Michelle Hogg	michelle.hogg@southtyneside.gov.uk	0191 4247651
Sunderland City Council	Paul Armin	LLFA@sunderland.gov.uk	0191 5615127

Introduction

Following the Flood and Water Management Act (FWMA) 2010 which defines the Lead Local Flood Authority, Sustainable Drainage Systems (SuDS) is accepted by the NNE LLFA as;

> the means of managing rainwater (including snow and other precipitation) with the aim of reducing damage from flooding, improving water quality, protecting and improving the environment, providing amenity and ensuring the stability and durability of drainage systems.

SuDS are required on major developments through National Planning Policy Framework (163-165) and at present LLFA are statutory consultees for surface water management under the Town and Country Planning Act (TCPA) 2015. Typically, the approach of the NNE LLFA toward drainage design will follow the National Planning Policy Framework, Planning Practice Guidance - Flood Risk and Coastal Change, Non-Statutory technical standards for sustainable drainage and the FWMA. Best practice guidance will be used to supplement and the above, documents such as the most up to date CIRIA SuDS Manual (C753 at time of writing, Local Authority SuDS Officer Organisation (LASOO) guidance, BS8582:2013, and C532, c648 and c768. All NNE LLFA will have Local Flood Risk Management Strategies, Strategic Flood Risk Assessments and requirements in relation to flood risk, water quality, biodiversity and amenity within Local Plans or Core Strategy. Some NNE LLFA have other drainage or SuDS guidance and adoption documents. There may also be specific drainage requirements in planning Validation Checklists required before an application will be validated.

This guidance provides the approach the NNE LLFA will take on some key questions often asked through the planning process by developers with the aim to improve the submission of Flood Risk Assessments, Drainage Strategies and SuDS design and promote consistency and best practise within the NNE LLFA area. It does not attempt to answer all questions on drainage design and pre-application consultation with a NNE LLFA is always recommended. This guidance has been developed taking into account the Tees Valley Combined Authority (TVCA) local standards for sustainable drainage and in consultation with Northumbrian Water.

Pre-application consultation, NNE LLFA SuDS adoption and Highway Authority SuDS adoption

All the NNE LLFA are agreed that consultation with the LLFA during the pre-application stage is the only way of ensuring SuDS are best incorporated into development. In addition, some authorities offer a priority charged service relating to SuDS and some NNE LLFA adopt SuDS either via an estate rent charge or Community Infrastructure Levy (CIL) charge. It is important to note that the adoption of development SuDS by the NNE LLFA which this guidance refers to is somewhat separate to requirements of the Highway Authorities relating to highway drainage. Some Highway Authorities adopt SuDS too. To ensure the best design and any chance of adoption pre-application consultation must be undertaken.

The following part of this guidance contains

- The NNE Local Sustainable Drainage Standards, and
- Sustainable Drainage design proforma.

The NNE LLFA Local Standards

The NNE LLFA Local Standards are set out below with reference to the non-statutory technical standards for Sustainable Drainage in brackets.

- **Peak flow control (S2 & S3)**

Local Standard 1 – Greenfield Run-off (GFRO) discharge rates should be provided for new development at all sites (Greenfield and Brownfield)

The only limitation on the lowest restricted run-off rate for smaller sites may be the lowest orifice sized flow control as accepted by Northumbrian Water (i.e. 75mm)

Local Standard 2 – The NNE LLFA accept either FEH or IOH124 for generating GFRO rates

FEH is preferred and available online at https://fehweb.ceh.ac.uk/ .

Local Standard 3 – For calculating Greenfield Run-Off (GFRO) the whole site area minus significant areas of public open space should be calculated

Enclosed areas such as gardens may be included in the GFRO rate for the site. You can use tools such as at the UK SuDS website to determine GFRO rates. https://www.uksuds.com/

Local Standard 4 – The NNE LLFA will set allowable discharge rates following Local Standards 1-3 unless Northumbrian Waters' permissible discharge rate to sewer is below Greenfield Runoff Rates

Whenever there is a proposed discharge to sewer it will be expected that formal agreement for a discharge rate to sewer will be provided by Northumbrian Water. You should contact Northumbrian Water developer services via their website to make a pre planning enquiry or email developmentenquiries@nwl.co.uk .

Local Standard 5 – Urban creep allowances to be applied are 10% for residential developments and 0 for commercial developments

PIMP factors can be set to 110% to model this.

Local Standard 6 – The NNE LLFA will accept a single Qbar discharge rate from site or rates no more than the 1 in 1 and 1 in 100-year greenfield run-off in accordance with Defra Standards

At some sites use of a complex control with managed flooding on site may be the most appropriate way to provided development. In other areas in known flood risk developers will only be allowed to discharge at Qbar. Please contact your LLFA during pre-application to confirm requirements.

Local Standard 6 – The NNE LLFA accepts direct free (unrestricted) discharge to estuarine waters

If discharge is through other sewerage networks greenfield run-off restrictions may apply. Discharges may still need to be treated and some source control provided. Any

designed network will be required to show that it can convey water freely and safely to the estuarine waters.

- **Volume Control (S4-S6)**

Local Standard 7 – Storm events should be checked as a minimum between 15 minutes and 360 minutes.

It is expected that as a minimum all events from a 15 minutes storm to the 360-minute (6 hour) storm will be assessed to ensure no more volume of water leaves the site than during green field run-off. This would apply to the 1 year and 100-year storm event. Attenuation drain down times should be checked for half empty in 24 hours for larger catchments and modelling times extended where required.

Local Standard 8 - Climate change allowances to be applied are 40% on the extreme event modelling (100 yr return period)

This is equal to the current upper end requirement as noted by the Environment Agency.https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances.

- **Flood risk within the development (S7 – S9)**

Local Standard 9 - 300mm free board is required in SuDS design

300mm freeboard should be provided or 300mm between top level of water and Finished Floor Level should be shown and exceedance routes should be checked.

Local Standard 10 – 1D or 2D modelling may be required for ordinary watercourses within or adjacent to new developments.

The developer should contact the LLFA to ensure the approach and modelling package they use is appropriate.

Local Standard 11 – Overland flow modelling (for surface water flood routes or other reasons) may be required

Where surface water overland flow routes are present or on sloping sites overland flow modelling may be required to show surface water flow routes will be managed. The type of modelling package required should be confirmed with the LLFA.

Local Standard 12 – For tidal and coastal flood modelling a combination of a 1 in 200-year tidal level and 1 in 5-year surface water event may be combined to check discharge from the development

Some LLFA may allow a 1 in 100-year tidal level and a 1 in 10-year surface water flow. The drainage network of the development should still be assessed to show that it can convey flow up to the 1 in 100 year plus 40% event.

- **Structural Integrity (S10-S11)**

Local Standard 13 – SuDS design should meet the latest CIRIA SuDS manual, Sewers for Adoption, British Standards and other best practise guidance.

A formal pre-application check should be made with local authorities to determine where there may be any alteration from this standard based on site specific requirements. See also https://www.susdrain.org/resources/ , http://sfa.wrcplc.co.uk/home.aspx & https://www.bsigroup.com/en-GB/

- **Designing for maintenance considerations (S12)**

Local Standard 14 – A site specific maintenance plan will be required to ensure consideration is made for how SuDS will be maintained and to say who will maintain them

This plan should include consideration of practicalities such as access routes. Some LLFA may allow this to be conditioned or a final plan to be conditioned. Check with the LLFA during formal pre-application discussions.

- **Construction (S13-S14)**

Local Standard 15 - A construction plan is required to show surface run off, any water receptors and an outline of mitigation measures.

This is to manage risk to development sites when the surface of the site is stripped or on larger sites as the wider site is developed. Some LLFA may allow this to be conditioned or a final plan to be conditioned. Check with the LLFA during formal pre-application discussions.

- **Other Local Standards**

These standards add further detail to the approach provided in the non-statutory technical standards for sustainable drainage and are intended to clarify the local approach.

Local Standard 16- The NNE LLFA consider SuDS to be overland "green SuDS" that show multifunctional benefit (including quantity control, water quality, biodiversity and amenity) in line with the NPPF and FWMA definitions

Other drainage solutions such as tanked storage will be considered only on a site by site basis and are unlikely to be adopted by LLFA.

Local Standard 17 – The NNE LLFA typically follow LASOO guidance for FRA and Drainage Strategy requirements at Outline and Full planning permission.

Some LLFA have further defined requirements. Please contact them during formal pre-application to obtain further information. The LASOO guidance can be found at https://www.susdrain.org/files/resources/other-guidance/lasoo_non_statutory_suds_technical_standards_guidance_2016_.pdf

Local Standard 18 – Infiltration testing is required at all sites before planning approval

While it is accepted at most sites full infiltration will not be possible partial infiltration (10^{-6} ms^{-1} to $10^{-8}ms^{-1}$) may be possible. Infiltration tests should be undertaken as part of site investigations including falling head tests (in line with DG365) at all sites. A minimum of 2 representative tests of 6 hours should be provided and the results submitted. The only exceptions are sites where ground contamination is present, there are proven concerns over ground stability (i.e. coal mining reports), or water levels are measured within 1m of the surface. Copies of DG365 may be obtained at https://www.brebookshop.com/details.jsp?id=327631

Local Standard 19- SuDS can be used as Open Space outside of the area wetted by a 1-year return storm

SuDS should be designed to be accessible and useable spaces outside of frequent storm extents both for amenity and wildlife with appropriate health and safety assessments considered.

Local Standard 20 Source control interception (retaining 5mm rainfall on site) should be applied for the impermeable area of all sites using the CIRIA SuDS manual method.

Where source control interception is not possible for all impermeable areas every reasonable effort should be made to provide source control including permeable paving being applied across site. See the SuDS Manual section 24. The developer may use site infiltration results and SuDS design evidencing infiltration and or evaporation to demonstrate that provision of source control by volume. Infiltration tests results, risk of subsidence, ground contamination and measure high ground water levels can all be used to determine whether full interception can be provided at a site. In such cases it will be expected as much source control as possible will be provided by ensuring for example all parking spaces are permeably paved etc.

Local Standard 21 - Water quality information should be assessed using criteria in the current CIRIA SuDS manual

The approach of the developer should be explained within submitted documents in terms of pollutant loading and removal. Where required consideration should be given to flow rates and retention time of water being treated. Each design should be assessed against treatment stages and the simple indices method of the SuDS Manual. See the SuDS Manual section 26.

Appendix 2 – Pro-forma checklist

This proforma checklist is a guide for the developer and while not a formal requirement for planning submission it may assist the local authority in a prompt response to applications.