Survey for the recommendations to update the Non-Statutory Technical Standards (NSTS) for SuDS

Introduction

The Department for Environment, Food and Rural Affairs (Defra) has commissioned research to explore whether updating the English Non-Statutory Technical Standards for SuDS (NSTS) could help deliver SuDS that provide multiple benefits beyond managing surface water runoff, contributing to improved climate adaptation, health and wellbeing and better places and spaces.

A key part of this work is to understand how the current NSTS are used and recommend how they could be improved to:

1. Support the National Planning Policy Framework and deliver multiple benefits
2. Ensure greater consistency with respect to designing for effective local flood risk management.

This research is being undertaken by a team led by HR Wallingford that includes CIRIA, McCloy Consulting, Illman Young and others. A key element of this research is to engage with those stakeholders that approve, design and commission SuDS for new developments in England to understand the challenges, opportunities and enablers to the delivery of SuDS schemes that deliver multiple benefits.

We would therefore appreciate it if you could complete the following survey, the outputs of which will be used to directly inform any potential update of the NSTS. The survey should, depending on your level of involvement in SuDS delivery, take between 20 and 30 minutes to complete. Responses will be anonymised, unless you wish to share case studies - where it would be helpful to have contact details.

Your input will help to improve local flood risk management and deliver an improved local environment.

Many thanks.

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* 1. Do you agree to participate in the survey? The data collected will be used to inform the review of the Non-statutory Technical Standards for SuDS (NSTS)

- Yes
- No

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* 2. What is your role in the delivery of SuDS?

- Approval (i.e. local authorities, LLFA, LPA, WaSCs)
- Practitioner/designer (i.e. engineer, landscape architect)
- Developer (i.e. those commissioning SuDS)
- Other (i.e. supply chain members, regulators)

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Questions for developers

Your role

* 90. How many years' experience do you have with SuDS in England?

- Less than 1 year
- 1 -3 years
- 3 – 5 years
- More than 5 years

* 91. What role do you have within a developer/client organisation?

Development of drainage submissions

Assuming you answer all the questions in this survey there are now 42 questions that need to be answered.

There are 10 questions in this section.

* 92. Does your approach to drainage on developments provide additional value and benefits?

- Yes
- No

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* 93. If yes, how do you work with the LLFA and LPA to deliver the additional benefit? (Max 500 characters)

* 94. What do you usually include in drainage submissions?

	Never included	Sometimes included	Always included	Don't know
Compliance with Non-statutory Technical Standards for SuDS (NSTS)	○	○	○	○
Compliance with Local Plan Policy on local drainage/flood risk	○	○	○	○
Compliance with Local Plan Policy on SuDS, or SuDS guidance (SPD)	○	○	○	○
Compliance with Local Plan Policy on green infrastructure or biodiversity	○	○	○	○
Management of runoff peak flows	○	○	○	○
Management of runoff flows and volumes	○	○	○	○
Management of water quality	○	○	○	○
Improvements to biodiversity (biodiversity net gain)	○	○	○	○
Improvements to amenity	○	○	○	○

	Never included	Sometimes included	Always included	Don't know
Certainty on long term maintenance	○	○	○	○
Management of water close/on surface	○	○	○	○
Delivery of source control	○	○	○	○
Management of runoff in sub-catchments	○	○	○	○
Consideration of drainage exceedance	○	○	○	○
Delivery of the SuDS Management Train	○	○	○	○
Provision of rainwater harvesting	○	○	○	○
Climate resilient development (adaptation and mitigation)	○	○	○	○
Other multiple benefits (please specify)	○	○	○	○

Specify here (max 70 characters)

95. What is the influence of these factors on your drainage submissions?

	High influence	Some influence	Little influence	No influence
Flood risk	○	○	○	○
Scale of development	○	○	○	○
Type of proposed development/land use	○	○	○	○
Density of development	○	○	○	○
Ground conditions	○	○	○	○
Condition of previously developed land	○	○	○	○
Sensitivity of receiving catchment	○	○	○	○
Previous dealings with local authority	○	○	○	○
Adoption options for the scheme	○	○	○	○
Financial viability of the site	○	○	○	○
Other (please specify)	○	○	○	○

Specify here (max 70 characters)

96. If necessary, please use the text box to provide more detail about how your requirements and evaluation processes differ between sites. (Max 500 characters)

* 97. What disciplines are the people from that contribute to the design of the SuDS schemes you're involved in? Please select all that apply.

- ☐ Flood risk/drainage engineer
- ☐ Highway engineer
- ☐ Landscape architect
- ☐ Planner
- ☐ Urban designer
- ☐ Biodiversity/ecology specialist
- ☐ Other (please specify - max 70 characters)

98. How frequently does a difficult drainage submission relate to the following planning and approval challenges (particularly with respect to multiple benefits)?

	Never	Rarely	About half the time	Frequently	Always
Lack of/poor Local Plan Policies on drainage	○	○	○	○	○
Late consideration of drainage on site layout	○	○	○	○	○
Poor engagement with those approving the drainage submission	○	○	○	○	○
Insufficient information provided	○	○	○	○	○
Conflict between adopting organisation and LLFA	○	○	○	○	○
Lack of clarity on requirements from local planning authority	○	○	○	○	○
Lack of clarity on requirements from Lead Local Flood Authority	○	○	○	○	○
Poor assessment and evaluation (within approving organisation)	○	○	○	○	○
Other (please specify)	○	○	○	○	○

Specify here (max 70 characters)

99. How frequently does a difficult drainage submission relate to the following design challenges (particularly with respect to multiple benefits)?

	Never	Rarely	About half the time	Frequently	Always
Developer expectations or timelines	○	○	○	○	○
Other environmental requirements (EA, Natural England)	○	○	○	○	○
Challenging site characteristics (location, topography)	○	○	○	○	○
Challenging ground conditions	○	○	○	○	○
Challenges around viability of developments	○	○	○	○	○
Difficulties in determining maintenance requirements	○	○	○	○	○
Other (please specify)	○	○	○	○	○

Specify here (max 70 characters)

100. If necessary, please use the text boxes to provide more detail about the challenges faced in developing good drainage submissions and SuDS design (particularly multiple benefits).

Comment 1 (max 500 characters)

Comment 2 (max 500 characters)

* 101. Are you involved in developing/reviewing the technical detail of drainage submissions (i.e. hydraulics, runoff estimation, developing designs etc)?

- ○ Yes
- ○ No

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Hydraulic requirements

There are 20 questions in this section.

* 102. How frequently do you use these hydraulic criteria for SuDS design for Greenfield Sites?

	Never	Rarely	About half the time	Frequently	Always	Don't know
Peak flow control to 1 year greenfield rate only	○	○	○	○	○	○
Peak flow control to 30 year greenfield rate only	○	○	○	○	○	○
Peak flow control to 100 year greenfield rate only	○	○	○	○	○	○
Peak flow control to 2 l/s/ha only	○	○	○	○	○	○
Peak flow control to other rates e.g. specific rates set by the LA for flood risk or betterment objectives (provide details below)	○	○	○	○	○	○
Peak flow control to multiple rates (provide details below)	○	○	○	○	○	○
Peak flow control and volume control (provide details below)	○	○	○	○	○	○

Specify here (max 70 characters)

103. If necessary, please use the text box to provide additional information on any hydraulic criteria used for Greenfield sites. (Max 500 characters)

* 104. How frequently do you use these hydraulic criteria for Previously Developed Sites?

	Never	Rarely	About half the time	Frequently	Always	Don't know
Peak flow control to 1 year greenfield rate only	○	○	○	○	○	○
Peak flow control to 30 year greenfield rate only	○	○	○	○	○	○
Peak flow control to 100 year greenfield rate only	○	○	○	○	○	○
Peak flow control to 2 l/s/ha only	○	○	○	○	○	○
Peak flow control to design rate estimated for previously developed site plus betterment (provide details below)	○	○	○	○	○	○
Peak flow control to other fixed rate e.g. specific rates set by the LA for flood risk or betterment objectives (provide details below)	○	○	○	○	○	○
Peak flow control and volume control (provide details below)	○	○	○	○	○	○

Specify here (max 70 characters)

105. If necessary, please use the text box to provide additional information on any hydraulic criteria used for Previously Developed Sites. (Max 500 characters)

106. How frequently do you use these design approaches for small sites (e.g. < 1 ha)?

	Never	Rarely	About half the time	Frequently	Always	Don't know
Minimum allowable discharge rate (provide details of the rate below)	○	○	○	○	○	○
Minimum allowable orifice size (provide details of the size below)	○	○	○	○	○	○
Other (please specify)	○	○	○	○	○	○

Specify here (max 70 characters)

107. If necessary, please use the text box to provide additional information on any design approaches for small sites. (Max 500 characters)

108. How frequently do you use these hydraulic criteria for sites discharging to sewers?

	Never	Rarely	About half the time	Frequently	Always	Don't know
Greenfield rates (please specify return periods)	○	○	○	○	○	○
Fixed rate of betterment agreed with sewerage undertaker (provide details of the rate below)	○	○	○	○	○	○
Fixed discharge rates agreed with sewerage undertaker (provide details of the rate below)	○	○	○	○	○	○
Sewerage undertaker defers to LLFA in setting rates (provide details below)	○	○	○	○	○	○
Other (please specify)	○	○	○	○	○	○

Specify here (max 70 characters)

109. If necessary, please use the text box to provide additional information on any hydraulic criteria for sites discharging to sewers.

Comment 1 (max 500 characters)

Comment 2 (max 500 characters)

* 110. Which greenfield runoff estimation methods do you use?

	Never	Rarely	About half the time	Frequently	Always	Don't know
IH124 equation						
FEH statistical equation						
ReFH2 model						
Other (please specify)						

Specify here (max 70 characters)

* 111. What factors (if any) do you believe lead to inconsistencies in agreed discharge rates and storage volumes? Please select all that apply.

- [ ] None
- [ ] Greenfield runoff estimation method
- [ ] Previously developed runoff estimation method
- [ ] Estimation tools used (please provide details below)
- [ ] Area used in runoff estimation calculations (please provide details below)
- [ ] Percentage runoff factors used in runoff estimation calculations (please provide details below)
- [ ] Assumptions on soil types
- [ ] Modelling approach (please provide details below)
- [ ] Other (please specify)

Specify here (max 70 characters)

112. If necessary, please use the text box to provide further details about the factors that lead to inconsistencies in discharge rates and storage volumes. (Max 500 characters)

113. What design rainfall models do you use?

	Never	Rarely	About half the time	Frequently	Always	Don't know
FSR	○	○	○	○	○	○
FEH99	○	○	○	○	○	○
FEH13	○	○	○	○	○	○
Other (please specify)	○	○	○	○	○	○

Specify here (max 70 characters)

114. What climate change uplift factors (applied to the design rainfall for the development) do you use?

	Never	Rarely	About half the time	Frequently	Always	Don't know
None	○	○	○	○	○	○
20%	○	○	○	○	○	○
30%	○	○	○	○	○	○
40%	○	○	○	○	○	○
Other (please specify)	○	○	○	○	○	○

Specify here (max 70 characters)

115. What urban creep factors (applied to the impervious areas of the development, where future urban creep could be accommodated) do you use?

	Never	Rarely	About half the time	Frequently	Always	Don't know
None	○	○	○	○	○	○
5%	○	○	○	○	○	○
10%	○	○	○	○	○	○
Other (please specify)	○	○	○	○	○	○

Specify here (max 70 characters)

* 116. What are the key constraints (if any) to delivering the current NSTS? Please select all that apply.

- [ ] None
- [ ] Allowable discharge rates are too low (storage is unachievable)
- [ ] Volume control is unachievable
- [ ] Complexity and lack of understanding of the hydraulic standards
- [ ] There is a lack of consistent guidance on which method to use for runoff estimation and how to define the parameters
- [ ] Other (please provide detail and case study evidence if appropriate - max 70 characters)

117. Please use the text boxes to provide further detail on key constraints to delivering NSTS and case study information (with reference details). Alternatively, please email paul.shaffer@ciria.org.

Comment 1 (max 500 characters)

Comment 2 (max 500 characters)

* 118. Interception (the prevention of runoff from the first 5mm of rainfall) is a good practice concept promoted in The SuDS Manual but not required by the NSTS. Please select the statements you agree with (can be more than one).

- [ ] We are always asked to deliver Interception
- [ ] We are sometimes asked to deliver Interception
- [ ] We are never asked to deliver Interception
- [ ] We try to deliver Interception wherever we can (provide detail below)
- [ ] Interception would be impossible to deliver for most sites (provide detail below)
- [ ] Interception is difficult to deliver without simple tools to facilitate planning and design for it
- [ ] Interception would help deliver multiple benefits

Specify here (max 70 characters)

119. Please use the text box to provide further details. Either a case study demonstrating delivery of Interception (with reference details) or detail explaining how and why Interception is difficult to deliver. Alternatively, please email paul.shaffer@ciria.org. (Max 500 characters)

* 120. Do you consider the current NSTS are appropriate and achievable (for controlling runoff from development)?

- ( ) Yes – I would not like to see these criteria changed
- ( ) No – the criteria should be changed (provide detail below)
- ( ) Maybe – changes to the criteria should be considered (provide detail on what you consider should change below)

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121. Please use the text boxes to provide more detail on your views of the appropriateness of NSTS and any changes you would like to suggest.

Comment 1 (max 500 characters)

Comment 2 (max 500 characters)

Delivering SuDS that provide multiple benefits

There are 12 questions in this section.

* 122. What multiple benefits do you consider SuDS should provide (in addition to hydraulic control required by NSTS)? Please select all that apply.

- [ ] None
- [ ] Management of water quality
- [ ] Improvements to biodiversity (biodiversity net gain)
- [ ] Other (please specify - max 70 characters)
- [ ] Improvements to amenity
- [ ] Provision of rainwater harvesting
- [ ] Climate resilient development (adaptation and mitigation)

123. Please suggest the level of influence the following factors have on achieving SuDS that provide multiple benefits. With 5 having a high level of influence.

	1 - Low influence	2	3	4	5 - high influence
A developer that appreciates the value of SuDS that provide multiple benefits	○	○	○	○	○
A competent design team committed and able to deliver SuDS that provide multiple benefits	○	○	○	○	○

	1 - Low influence	2	3	4	5 - high influence
Early consideration of the site characteristics and layout	○	○	○	○	○
Pre-application discussions with those that approve the drainage submission	○	○	○	○	○
Compliance with Non-statutory Technical Standards for SuDS (NSTS)	○	○	○	○	○
Experience and knowledge of those assessing/evaluating schemes within the local authority	○	○	○	○	○
Drainage submission follows guidance in the CIRIA SuDS Manual	○	○	○	○	○
Drainage submission complies with Local Plan Policy	○	○	○	○	○
Drainage submission complies with local drainage/flood risk policy	○	○	○	○	○
Drainage submission complies with local green infrastructure or biodiversity policy	○	○	○	○	○
Drainage submission complies with local authority SuDS guidance (SPD etc)	○	○	○	○	○
The requirement to complete a drainage submission proforma by the developer or practitioner	○	○	○	○	○

	1 - Low influence	2	3	4	5 - high influence
The requirement to complete a (construction) verification report by the developer or practitioner					
Drainage submission complies with other standards (please specify)					
Drainage submission refers to other guidance (please specify)					
Drainage submission includes consideration of responsibilities for long term operation and maintenance of the proposed SuDS					

Specify here (max 70 characters)

124. If necessary, please use the text boxes to provide more detail about the factors that influence the delivery of SuDS that provide multiple benefits.

Comment 1 (max 500 characters)

Comment 2 (max 500 characters)

* 125. Should the NSTS be updated to include requirements for SuDS to provide multiple benefits?

- Yes
- No

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126. If you answered yes, and assuming guidance is provided, how would you like to see the updated NSTS and requirements for multiple benefits introduced? Please select all that apply.

- [ ] Update and re-issue the NSTS
- [ ] Update the National Planning Policy Framework (NPPF) with reference to meeting updated NSTS
- [ ] Update the Planning Practice Guidance with reference to meeting updated NSTS
- [ ] Update Local Plan Policy documents with reference to meeting updated NSTS
- [ ] Update Local Design Guide with reference to meeting updated NSTS
- [ ] Link Biodiversity Net Gain requirements to updated NSTS

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127. If you answered no, please select an option.

- ○ There is no need to strengthen requirements for SuDS to provide multiple benefits.
- ○ The requirements for SuDS to provide multiple benefits should be included elsewhere (please specify).

Specify here (max 70 characters)

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128. If necessary, please use the text box to provide more detail about updating the NSTS to provide multiple benefits. (Max 500 characters)

* 129. Generally speaking, are there significant differences between the quality of the approved drainage submission and what gets delivered on site?

- ○ Yes
- ○ No

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130. Please use the text box to provide more detail on what the differences are and how they arise? (Max 500 characters)

131. What approaches are being used to agree maintenance obligations? (Max 500 characters)

* 132. Can you suggest examples of planning submissions, or completed developments that demonstrate the opportunities and challenges of delivering SuDS that provide multiple benefits? Alternatively, please send an email to paul.shaffer@ciria.org.

- Yes
- No

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133. Case study details (max 500 characters)

Planning reference:	
Name of development:	
Street or postcode:	
Scale of development (area/houses):	
Type of development:	
Built (yes/no):	
Provides multiple benefits (yes/no):	
Demonstrates challenge (yes/no):	
Please provide details	

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Final comments

152. Please use the text box to provide any other additional comments. (Max 500 characters)

153. Thank you for taking the time to complete the survey.

Your response will help inform the research into developing recommendations to update the Non-Statutory Technical Standards for SuDS.

We may need to obtain some further information, particularly around any case studies, or examples. If you would be willing for us to contact you to follow up the survey please leave your contact details below. Your details will only be used for this purpose of this research. Alternatively, please email paul.shaffer@ciria.org.

Name	
Email Address	
Phone Number	