

Survey: Capacity and skills for implementation of Schedule 3 of the Flood and Water Management Act (2010)

The Department for Environment, Food and Rural Affairs (Defra) has commissioned research to explore the extent and depth of SuDS knowledge across potential approval bodies and the construction industry in England. As outlined in Defra's [review for implementation of Schedule 3 of the Flood and Water Management Act 2010](#) (January 2023) successful implementation of Schedule 3 and SuDS requires professionals with the skills and knowledge to deliver SuDS.

This research is being undertaken by a collaboration of WSP, CIWEM and CIRIA. The primary objective of this work is to understand the availability of the skills required to plan, design, approve, construct, inspect and maintain SuDS and what training and support is required to ensure SuDS is delivered in line with good practice and mandatory SuDS Standards. The work previously undertaken by Defra on the [Recommendations to Update Non-Statutory Technical Standards for SuDS](#) (WT15122, in 2021) has been used to inform the skills that may be required to implement Schedule 3 and comply with the Standards.

We would appreciate it if you could complete the survey from an organisational perspective, considering collaboration with other functions in your organisation to form the SuDS Approval Body (SAB) or deliver the SuDS scheme. Recognising that it may be helpful to obtain input from different departments, at different levels of seniority in the council we can accept multiple responses from those working within unitary authorities or county councils.

The results will be aggregated anonymised and used to inform the implementation of Schedule 3. The data will be retained by WSP for a maximum of 2 years following the completion of the research. Please find WSP's privacy notice [here](#).

The survey should take between 20 and 30 minutes to complete and it is voluntary (you will not be contacted by phone). Recognising that it may be beneficial to work with colleagues on completing the survey a PDF version of the survey can be downloaded [here](#). Please contact paul.shaffer@ciwem.org if you have any queries about this survey, or research or require the survey in large print. Any queries about schedule 3 should be sent to: schedule3@defra.gov.uk

The closing date for the survey is **Monday 20th March 2023**.

Your input will help with the implementation of Schedule 3 and delivery of high-quality SuDS.

Many thanks for your time.

Defra and the project team

	Question	Answer options	Logic/notes
Audience – all general screening			
1.	Do you agree to participate in the survey? The data collected will be used to inform the implementation of Schedule 3 of the Flood and Water Management Act 2010	Yes No	Mandatory If no → end of survey Q48. (Needed for GDPR)
2.	What is the role of your organisation in the delivery of SuDS?	<i>Single tick box</i> a. Potential SuDS Approval Body (SAB) - i.e. unitary authority, or county council b. Developer and/or practitioner - i.e. those commissioning and designing SuDS, engineers, landscape architects and contractors c. Other - i.e. RMAs, District or Borough Council, regulators, supply chain members	Mandatory Approval → Q3 Developer and/or practitioner → 45 Other → Q76
Audience - Questions for Developers and/or practitioners			
Information about your organisation			
3.	What type of organisation are you?	<i>Drop down list see appendix 1</i>	Mandatory Assume all "Other (please specify)" includes a text/comment box can these all be word limited to 10 words/70 characters
4.	What is the name of your organisation? (Responses will be anonymous).	<i>Free text box</i>	Mandatory
5.	How many full time equivalent (FTE) staff is involved in the SuDS delivery process within your entire organisation? Please type in a number using numerals (we recognise this is an estimate).	<i>Free text box - numerals</i>	Mandatory If we can only accept numerals that would be good

	Question	Answer options	Logic/notes
6.	Have you considered the size and shape of the workforce involved in SuDS delivery once Schedule 3 is implemented?	Yes No	If yes → Q49 If no → Q50
7.	If yes, how many FTEs do you foresee requiring to support SuDS delivery within your organisation once Schedule 3 is implemented? Please type in a number using numerals (we recognise this is an estimate).	Free text box - numerals	If we can only accept numerals that would be good
8.	Please provide any further details about availability of skills in your specific organisation in preparation for the implementation of Schedule 3.	Free text box	Please limit words to 70 words if possible
	The process for delivering SuDS schemes		
	<p><i>The survey will explore the skills that are required for the delivery of SuDS. This will focus on the planning, design, approval, construction, inspection/enforcement, maintenance and adoption roles.</i></p> <p><i>The skills required will also relate to the Standards for SuDS. The Recommendations to Update Non-Statutory Technical Standards for SuDS (WT1512) are used to inform the skills required for the standards. It is possible the main standards will include:</i></p> <ul style="list-style-type: none"> • Runoff destinations • Everyday rainfall • Extreme rainfall • Water quality • Amenity • Biodiversity • Design of drainage for construction, operation and maintenance 		

	Question	Answer options	Logic/notes
	<p><i>In answering the availability of skills for SuDS delivery in your organisation please give consideration to the likely configuration of the organisation and the ability to collaborate with other internal functions.</i></p> <p><i>Readily available – means available within the function coordinating the SuDS approval and adoption process.</i></p> <p><i>Available within organisation – means available within organisation, but collaboration is required.</i></p> <p><i>Recruitment needed – not available to the organisation.</i></p> <p>Training needed – available in the organisation, but training is needed.</p> <p>Not necessary – skillset not considered necessary.</p>		
9.	<p>It is possible that some of the skills and functions required for SuDS delivery are available within other parts of the organisation e.g. ecologists and asset inspectors. Please indicate the existing availability of the skills in your organisation.</p>	<p>Tick boxes for: Readily available; Available within organisation; Recruitment needed; Training needed; Not necessary; Don't know</p> <ul style="list-style-type: none"> a. Drainage design b. SuDS design c. Landscape design d. Hydrological assessment e. Hydraulic design f. Hydraulic modelling g. Civil engineering h. Highway engineering i. Water quality management j. Spatial planning k. Geotechnical assessment l. Landscape assessment 	

	Question	Answer options	Logic/notes
		m. Environmental assessment n. Ecological assessment o. Carbon assessment p. Urban design q. Engagement and communication r. Building control/compliance s. Sewerage connectivity t. SuDS construction u. SuDS maintenance v. Contract management w. Legal services x. Partnership management y. Obtaining funding z. Economic assessment aa. Quantity surveying bb. Surveying cc. Geology dd. Horticulture ee. Other (please specify)	
	Planning		
10.	In relation to planning/pre-application activities what is the existing availability of professionals and skills in your organisation to provide knowledge of:	<i>Tick boxes for: Readily available; Available within organisation; Recruitment needed; Training needed; Not necessary</i> a. Complying with regulations (planning, environmental and building regulations) b. Traditional (non-SuDS) drainage approaches c. Drainage design (importance of levels; flow routes; discharge options)	

	Question	Answer options	Logic/notes
		d. SuDS principles (close/on surface; source control; SuDS Mgt Train; conveyance; storage, flow control) e. Integration of SuDS in development (sub catchments; pollution control; discharge options) f. Designing of SuDS components (functionality; ease of construction and maintenance) g. Design and construction good practice (net-zero carbon) h. CDM and Health and Safety principles i. Developing management and maintenance plans	
	Design process		
11.	In relation to compliance with standards on drainage destination what is the existing availability of professionals and skills in your organisation to provide knowledge of:	<i>Tick boxes for: Readily available; Available within organisation; Recruitment needed; Training needed; Not necessary</i> a. Options for the drainage hierarchy b. Hydrology and hydraulics (runoff, conveyance and infiltration) c. Influence of topography, watercourses and development layout on runoff management d. Geotechnical principles e. Estimation of runoff f. Managing runoff; sub catchments; flow control; storage; exceedance g. Inclusion of harvesting rainfall (RWH, irrigation etc) h. Developing appropriate management and maintenance plans	

	Question	Answer options	Logic/notes
12.	In relation to compliance with standards on managing everyday rainfall what is the existing availability of professionals and skills in your organisation to provide knowledge of:	<p><i>Tick boxes for: Readily available; Available within organisation; Recruitment needed; Training needed; Not necessary</i></p> <ul style="list-style-type: none"> a. The sensitivities of receiving watercourses b. The application and use of common greenfield runoff estimation methods c. Approaches to limit runoff discharges d. Approaches to manage frequent (i.e. everyday) rainfall and deliver interception e. Approaches to manage various peak flow runoff rates f. Approaches to manage the volume of runoff g. Developing appropriate management and maintenance plans 	
13.	In relation to compliance with standards on managing extreme rainfall what is the existing availability of professionals and skills in your organisation to provide knowledge of:	<p><i>Tick boxes for: Readily available; Available within organisation; Recruitment needed; Training needed; Not necessary</i></p> <ul style="list-style-type: none"> a. The sensitivities of receiving watercourses b. The calculation/assessment of runoff estimates from different catchments c. Greenfield runoff estimation methods d. Application of uplifts for climate change and/or urban creep e. Managing runoff in sub-catchments and estimation of storage volumes f. Approaches to manage various peak flow runoff rates 	

	Question	Answer options	Logic/notes
		g. Approaches to manage the volume of runoff h. Approaches to manage drainage exceedance i. Developing appropriate management and maintenance plans	
14.	In relation to compliance with standards on water quality what is the existing availability of professionals and skills in your organisation to provide knowledge of:	<i>Tick boxes for: Readily available; Available within organisation; Recruitment needed; Training needed; Not necessary</i> a. Sensitivities of receiving watercourses b. Complying with regulations and industry approaches c. Sources of urban pollutants and their mitigation d. Interdependencies with the standard on managing everyday rainfall e. The SuDS approach (use of source control and the SuDS Mgt Train) f. Assessing water quality risks (ie SuDS Manual Simple Index Approach) g. Designing SuDS components for water quality treatment h. Managing nutrient neutrality i. Developing appropriate management and maintenance plans	
15.	In relation to compliance with standards on amenity what is the existing availability of professionals and skills in your organisation to provide knowledge of:	<i>Tick boxes for: Readily available; Available within organisation; Recruitment needed; Training needed; Not necessary</i>	

	Question	Answer options	Logic/notes
		<ul style="list-style-type: none"> a. The influence of topography, watercourses and development layout on runoff management b. Interactions of standards on managing rainfall and water quality on amenity c. Good landscape design practice d. Integration of SuDS into developments and public space e. Delivering accessibility and Health and Safety f. Delivering multiple benefits and visual character g. Developing appropriate management and maintenance plans 	
16.	<p>In relation to compliance with standards on biodiversity what is the existing availability of professionals and skills in your organisation to provide knowledge of:</p>	<p><i>Tick boxes for: Readily available; Available within organisation; Recruitment needed; Training needed; Not necessary</i></p> <ul style="list-style-type: none"> a. Complying with planning and relevant regulatory frameworks b. The influence of topography, watercourses and development layout on runoff management c. Interactions of standards on managing rainfall and water quality on biodiversity d. Integration of SuDS into developments and public space e. Good biodiversity conservation and ecological design practice f. Managing ecological connectivity and impacts on habitats g. Contributing to Biodiversity Net Gain (BNG) and other biodiversity scoring mechanisms (e.g. Urban 	

	Question	Answer options	Logic/notes
		Green Factors, and Green Infrastructure Standards/Framework) h. Delivering ecological value and multiple benefits from SuDS i. Developing appropriate management and maintenance plans	
	Construction and inspection		
17.	In relation to compliance with standards on construction what is the existing availability of professionals and skills in your organisation to provide knowledge of:	a. Complying with planning and relevant regulatory frameworks and standards b. The influence of topography, existing site consideration, infrastructure/services and geotechnics on SUDS construction c. Good practice of SuDS construction and programming d. CDM and Construction Method Statements e. Correct specification of products and materials f. Correct installation of SuDS components g. Managing impacts of construction on SuDS (pollutants, erosion, siltation, soil quality, loading) h. Handover and appropriate inspection processes	
	Maintenance		
18.	In relation to maintenance and adoption activities what is the existing availability of professionals and skills in your organisation to provide knowledge of:	<i>Tick boxes for: Readily available; Available within organisation; Recruitment needed; Training needed; Not necessary</i> a. Complying with planning and relevant regulatory frameworks and standards	

	Question	Answer options	Logic/notes
		<ul style="list-style-type: none"> b. Maintenance requirements and schedules for SuDS components c. Evaluating and working to maintenance schedules d. Good practice landscape and biodiversity management e. SuDS performance monitoring f. Managing extreme events from SuDS (flooding and pollution) g. Complying with waste management requirements h. Contract management i. Commuted sum calculation 	
19.	If necessary, please use the text box to provide more detail about the skills required to deliver SuDS and implement Schedule 3.	<i>Free text box</i>	<i>Please limit words to 70 words if possible</i>
	Approaches to developing SuDS skills and capacity		
	Concerns about the potential skills gap for the implementation of Schedule 3 are recognised by government. Please could you answer the following set of questions to help inform approaches to improve skills for SuDS implementation with your organisation.		
20.	Please rate the effectiveness of the following approaches your organisation has used to improve SuDS competency and skills within your organisation. (0 = not used, 1 = very ineffective, 5 = very effective)	<i>Tick box for options 0 - 5</i> <ul style="list-style-type: none"> a. Collaborating with other parts of the organisation b. Recruiting additional staff c. Using agencies d. On-the job training e. Apprenticeships f. External training 	<u>Mandatory</u>
21.	Giving consideration to the time required and affordability for training please rate the effectiveness of the following approaches to upskill the people in your organisation. (1 = very ineffective, 5 = very effective)	<i>Tick box for options 1 – 5</i> <ul style="list-style-type: none"> a. Free (and recorded) webinars b. e-learning modules (short, self-paced, with virtual instructor led Q&A and discussion) 	<u>Mandatory</u>

	Question	Answer options	Logic/notes
		<ul style="list-style-type: none"> c. 1 or 2 day classroom-based training (instructor-led, virtual or in person) d. Structured training (mixture of self-paced and classroom based sessions) e. SuDS training videos f. Sessions to train the trainers g. Community of Practice (web platform with industry news and peer-to-peer learning) 	
22.	Please prioritise the importance of providing training on:	<p><i>Require respondent to move, or number the priority</i></p> <ul style="list-style-type: none"> a. SAB approval and adoption process b. Overview of SuDS design and approval principles c. Detailed SuDS design and approval d. SuDS construction and inspection e. SuDS maintenance f. SuDS masterclass – water quantity g. SuDS masterclass – water quality h. SuDS masterclass – amenity i. SuDS masterclass – biodiversity j. SuDS masterclass – design and approval for small sites 	
23.	Please indicate the importance of accreditation of training by a professional body (like CIWEM, ICE etc). (0 = N/A, 1 = very unimportant, 5 = very important)	<i>Tick box for options 0 – 5</i>	
24.	If necessary, please use the text box to provide more detail about approaches and training to improve SuDS skills and capacity to deliver SuDS and implement Schedule 3.	<i>Free text box</i>	<i>Please limit words to 100 words if possible</i>
Certification of competency for professionals			
25.	Do you consider certification of competency for approvers, practitioners/designers and contractors would be helpful?	<p><i>Tick boxes for Yes; No; Don't know.</i></p> <ul style="list-style-type: none"> a. SuDS approvers 	Mandatory

	Question	Answer options	Logic/notes
		b. SuDS practitioners/designers c. Contractors/constructors	<i>Can the answers refer respondent to appropriate question</i>
26.	If you said no, why not?	<i>Free text box</i>	Mandatory if possible <i>Please limit words to 70 words if possible</i>
27.	If you said yes to any of the above and giving consideration to the need to make the certification accessible/achievable please indicate what the minimum proof of competency should be required. Please select all that apply.	<i>Multiple tick box grid for: SuDS approvers; SuDS practitioners/designers; Contractors/constructors</i> a. Completion of appropriate accredited training b. Member of an appropriate professional body c. Continuous Professional Development record d. Curriculum Vitae e. Career report with three examples of SuDS delivery the applicant was materially involved in f. Report on achievement of agreed relevant mandatory SuDS competencies g. Assessment (exam or interview)	
28.	If necessary, please use the text box to provide more detail about certification to improve SuDS skills.	<i>Free text box</i>	<i>Please limit words to 70 words if possible</i>
	Apprenticeships		
29.	Do you consider apprenticeships within your organisation would help with SuDS skills and capacity?	<i>Tick boxes for Yes; No; Don't know.</i>	<i>Can the answers refer respondent to appropriate question</i>
30.	If you said no, why not?	<i>Free text box</i>	<i>Please limit words to 70 words if possible</i>
31.	If you said yes, what should this cover?	<i>Free text box</i>	<i>Please limit words to 70 words if possible</i>
32.	Please indicate the suitability of the apprenticeship level. (0 = N/A or don't know, 1 = very unsuitable, 5 = very suitable)	<i>Tick box for options 0 - 5</i>	

	Question	Answer options	Logic/notes
		a. Intermediate (Level 2, GCSE) b. Advanced (Level 3, A-level) c. Higher (Levels 4,5,6 and 7, Foundation degree and above) d. Degree (Levels 6 and 7, Bachelor's or master's degree)	
33.	If necessary, please use the text box to provide more detail about the role of apprenticeships to improve SuDS skills.	<i>Free text box</i>	<i>Please limit words to 70 words if possible</i>
	Thank you for taking the time to complete the survey. Your response will help inform the implementation of Schedule 3 and the delivery of SuDS.		

Appendix 1 – Developer and/or practitioner

Developer
Land buying agent
Multidisciplinary consultancy
Drainage engineering consultancy
Civil engineering consultancy
Landscape architect
SuDS design
Urban design/masterplanner
Ecologist
Contractor – construction
Contractor – maintenance
Highways engineering consultancy
Structural engineering consultancy
Geotechnical engineering consultancy
Cost consultancy
Surveyor
Other (please specify)

Appendix 2 – Other

Other RMA – Environment Agency
Other RMA – Sewerage undertaker
Other RMA – local highways authority
Other RMA – National Highways
Other RMA – Internal drainage board
District Council
Borough Council
Local Planning Authority
Natural England

Other asset management – railway
Other asset manager – Canal & Rivers Trust
Other asset manager – Riparian landowner
Supply chain - Product manufacturer/supplier
Supply chain - Modelling/software company
Wildlife trust
Rivers trust
Third sector
Other (please specify)

