



# Recommendations to Update Non-Statutory Technical Standards for Sustainable Drainage Systems (SuDS)

## Research Summary

### Objectives

The National Planning Policy Framework (NPPF) requires new development, where possible, to include 'multi-functional' sustainable drainage systems (SuDS). Multi-functional in this context means SuDS that have been designed to maximise the benefits that can be achieved following design best practice. To prevent confusion, in this project we use the term 'multiple benefit'. These benefits include water quantity (peak flow and volume control), water quality, amenity and biodiversity.

The Non-Statutory Technical Standards (NSTS) (Defra, 2015) currently only specify water quantity design requirements, falling short of SuDS best practice.

This research project aimed to:

- Determine whether updating the current NSTS could support developers and local planning authorities to meet the requirements of the NPPF in full, and
- Provide recommendations to Defra as to what the updates should be.

### Approach

The research included:

- Investigating how stakeholders interpret and apply the current NSTS;
- Evaluating the suitability of current hydraulic design methods;
- Investigating how the current NSTS could be updated to improve the effectiveness the water quantity standards and consistency in their delivery;
- Reviewing current and evolving drivers, barriers and enablers for delivering multiple benefit SuDS; and

- Reviewing the implementation in Wales of Schedule 3 of the Flood and Water Management Act 2010.

Each part of this research took into account feedback received from stakeholders. Stakeholders in England included (but were not limited to) developers, local planning authorities, lead local flood authorities, Association of SuDS Authorities, Water and Sewerage Companies, design engineers, landscape architects, the Environment Agency, Natural England, academics/researchers, manufacturers of SuDS related products and professional bodies. Stakeholders in Wales included the Welsh Government and Welsh Local Government Association, representatives from developers in Wales, plus five local authorities that have SuDS Approval Body (SAB) responsibilities.

Stakeholders were engaged in the following ways:

- A Project Steering Group with representatives from most of the stakeholder groups listed above;
- An online survey to understand how the current NSTS are interpreted, levels of compliance and current enablers and barriers to SuDS delivery;
- Interviews with Welsh stakeholders to discuss the application of the statutory standards in Wales and learn lessons from the approach adopted in Wales;
- Focus group workshops to drill down into the feedback received from the online survey and to test the draft updated standards with stakeholders;
- A second online survey to gain feedback on the draft updated standards, focusing on clarity, deliverability and how easily designs could be approved on this basis.



## Outputs

There were two key outputs from this project:

1. Answers to the research questions listed below; and
2. Recommendations for an updated set of SuDS standards.

## Research Questions

The research answered the following questions:

1. How are the NSTS interpreted and applied currently and what influences any variation?
2. To what extent does local guidance and policy influence the outcomes?
3. What currently drives or constrains the requirements for and delivery of multiple benefits in SuDS (over and above hydraulic control)?
4. What are the implications of the range of methods and design approaches required by LLFAs and/or used by designers to meet the current criteria?
5. How could new guidance be used to deliver a more consistent design approach and more consistent outcomes?
6. Is there new evidence that supports modifying the current criteria, from a hydraulic perspective?
7. To what extent would modifications to the existing hydraulic standards drive the delivery of multiple benefits?
8. What lessons can we learn from implementation of Schedule 3 of the Flood and Water Management Act (2010) in Wales?
9. How could a requirement for multiple benefit SuDS deliver wider government policy and regulatory objectives?
10. What are the barriers, enablers and drivers for the inclusion and delivery of multiple benefit criteria?

## Recommended New Standards

On the basis of the research findings, the contractor has recommended that standards S1 to S6 in the current NSTS are replaced with six new standards. Feedback from stakeholders highlighted that standards S7 to S14 should also be reviewed (in particular with regards to construction and maintenance), but this was outside the scope of the project.

The recommended new standards cover the following:

**Standard 1:** Runoff destinations

**Standard 2:** Everyday rainfall

**Standard 3:** Extreme rainfall

**Standard 4:** Water quality

**Standard 5:** Amenity

**Standard 6:** Biodiversity

All six standards should be met for all new development on greenfield sites and re-development sites. The standards are complementary and the delivery of each standard should support and not compromise delivery of the other standards. A SuDS design that delivers multiple benefits will include a range of components; each of these components should contribute to the delivery of several if not all of the standards.

Each standard is accompanied by a set of clarifications that provide guidelines to support the interpretation, delivery and evaluation of the standard.

In addition to the standard and clarifications, it is also recommended that three key principles are applied when planning and designing schemes to meet the new standards. These are:

1. Use of 'a SuDS approach'
2. Early and integrated design
3. Embedding SuDS within the development planning process.



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## Additional Recommendations

The successful implementation of these new standards will require:

- Appropriate supporting guidance and tools (including new metrics for e.g. amenity)
- Alignment with and referencing within other national policy and guidance to maximise outcome value;
- Processes that facilitate the design, approval and adoption of integrated and multiple benefit SuDS that meet the new suite of standards; and
- Increased awareness and skill development of those designing and approving SuDS.

## Deliverables

The research findings and recommended updates to the NSTS and additional recommendations are presented in full in the Final Report and its accompanying eight annexes (as listed below).

## Annexes

- A. Evidence review
- B. Hydraulic analysis
- C. Online survey 1
- D. Online survey 2
- E. Focus groups
- F. Review of Welsh approach
- G. Case studies
- H. Review of the Planning White Paper

## Next steps

This research will be used by Defra to inform its drainage policy development.

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## Project Team

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