

Future Trend: Urban Creep

Trend definition and relevance to DWMP

Urban creep is the gradual increase in impermeable surfaces that drain rainfall into the combined foul and surface water sewerage network. It is commonly driven by small-scale changes to the built environment, such as paving over gardens, creating driveways and the loss of green spaces. Although these changes occur incrementally, their cumulative effect can significantly increase the volume and rate of surface water entering our combined and surface water networks¹, thereby increasing the likelihood of sewer flooding and storm overflow spills during wet weather. Future planning should also recognise that the extent of further urban creep may be constrained in some catchments where impermeable cover has already reached high levels, while in others, the impacts may be moderated by de-paving, greening initiatives or wider nature-based interventions.

Within the DWMP, responding to an upward trend in urban creep is likely to require increased investment in system-wide capacity, alongside ongoing measures to reverse the trend, including through the retrofit and wider implementation of sustainable drainage systems (SuDS).

Trend description, uncertainty and potential impact on our region

Example of urban creep: paved-over front gardens



Source: Thames Water, 2026

- In London, and increasingly elsewhere, planning policies promoting re-greening, sustainable drainage and improved stormwater management mean that previous urban creep assumptions are likely to be conservative². For this trend, we assume no further increase in impermeable areas will be connected to combined sewers³ in London, and there is potential for these areas to reduce over time. However, as evidence for this trend is still limited, reductions in urban creep are not included in the DWMP28 baseline assessment.
- Within our foul-only sewer catchments⁴, no new impermeable connections are assumed. Any that occur are treated as misconnections, consistent with CIWEM Urban Drainage Group (UDG) guidance⁵, with misconnection rates assumed to remain stable over the planning period.
- For our surface water sewer catchments in the Thames Valley⁶, the impacts of urban creep cannot yet be quantified with sufficient confidence for inclusion in DWMP28. Further analysis is planned in future DWMP cycles to improve understanding and reduce this uncertainty.
- The Environment Agency's national surface water flood maps assume a high proportion of runoff from urban areas, irrespective of the underlying drainage system. This effectively represents a high urban creep scenario, providing a conservative estimate of surface water flood risk in some catchments.

Stage of DWMP used	
Risk assessment	✓
Plan development	✓
Impact/Importance	
Short term (2035)	Low
Medium term (2045)	Low
Long term (2055)	Low
Example PIs affected by this trend	
	External flooding
	Good ecological and/or chemical status: Public sewerage
	Storm overflow performance



References

- 1 Foul sewer networks are not directly affected by urban creep, as they are not designed to receive surface water runoff. However, they can be impacted by surface water misconnections, where runoff is incorrectly connected to the foul sewer. Water companies, including Thames Water, are investigating and remediating these misconnections to reduce unnecessary flows and improve network performance.
- 2 The occurrence of retrofitted SuDS, particularly in brownfield developments, which enable negative urban creep, is monitored by the Mayor of London at Greater London Authority's London Sustainable Drainage Action Plan and the Greater London Authority's (n.d.) London Retrofit SuDS Map. Available at: apps.london.gov.uk/suds/#10/51.5072/-0.0731 (Accessed: 17 August 2026).
- 3 Combined sewer systems convey both wastewater and stormwater in a single sewer. They account for approximately 9% of the Thames Water sewer network by length (calculation based on data from Thames Water Utilities Ltd. (2025), Annual Performance Report 2025–26 APR Tables, Table 7C. Data downloaded March 2025), with extensive combined sewer systems serving much of inner London.
- 4 Foul sewer system convey wastewater only. They account for approximately 87% of the Thames Water sewer network by length, (calculation based on data from Thames Water Utilities Ltd. (2025), Annual Performance Report 2025–26 APR Tables, Table 7C. Data downloaded March 2025).
- 5 Code of Practice for the Hydraulic Modelling of Urban Drainage Systems 2017, CIWEM, November 2017: CIWEM Urban Drainage Group Code of Practice for Hydraulic Modelling (S7.3.6).
- 6 Surface water sewers convey stormwater only. In many catchments across our region, particularly in the Thames Valley, a dedicated surface water drainage system is not required because the ground is naturally permeable, allowing rainwater to soak into the ground.

