

## Project Data Sheet

### PROJECT

Urban Creep

### CLIENT



- Sewerage
- Rivers
- Coastal
- SUDS
- Land Drainage
- Hydraulic Modelling
- Flood Risk Assessments
- Drainage Area Planning
- Asset Management
- Flood Alleviation
- Flooding Investigations
- Feasibility Study
- Drainage Design
- Environmental Aspects
- Inundation Modelling
- Surface Water Management



**SUDS & Flood Management  
Initiative of the Year**

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It has long been known that "urban creep" is a growing problem but there were relatively few studies quantifying the problem. UKWIR commissioned RAA to undertake this study into "Urban Creep" with the objectives of providing data on the degree and rate of "urban creep" and also to develop a methodology for modelling the degree of urban creep within hydraulic models so that future projections of the impact of urban creep on CSO spills, pumping costs, treatment costs and flooding could be determined..

This Study used the latest generation of remote sensing data which comprised high resolution, multi-spectrum aerial photography which Infoterra Ltd used in conjunction with other data including Lidar surveys to compile a "Land Cover Classification Map". The study utilised this data for five 100km<sup>2</sup> study areas, in Leicester, Maidstone, Chester, Norwich and Newcastle upon Tyne. Infoterra were also able to supply data from between 4 years and 7 years previously for each of these study areas, again using aerial photography to identify the changes which had occurred (down to 0.2m) in relation to roofs, artificial hard surfaces and vegetation.

RAA used this data to undertake a comparison of these changes (urban creep) by firstly removing any changes which have been due to growth. A complex sampling strategy was developed to sample this data according to drainage system type, soil type, house type, house footprint area, depth of front gardens and perhaps most importantly by socio-demographic factors. This resulted in excess of 8,500 actual samples after the more extreme values have been removed. From this work RAA have been able to draw conclusions about what the amount of urban creep has been over the past few years according to a variety of different factors and also develop a methodology for predicting future urban creep.