

14.4 FLOODING FROM INADEQUATE DRAINAGE

- 14.4.1 The Government recently concluded consultation on a new strategy for flood and coastal erosion risk management, *Making Space for Water*. The intentions include, amongst other things, the implementation of Integrated Urban Drainage Management. A range of bodies currently have responsibility for various aspects of drainage or sources of flooding, but there is currently no requirement to view the problem as a whole. Integrated urban drainage pilots are to be set up to determine the best way to tackle urban flooding in a joined-up manner.
- 14.4.2 The Government's first response to the consultation indicates that '*the role of the transport network will also be considered*', which implies that in some circumstances a broader role may be necessary. This will need to be taken into account in maintenance planning as the strategy develops (www.defra.gov.uk).
- 14.4.3 Given the relative predictability of areas susceptible to the risk of flooding, it should be possible to identify the location, scale and nature of such contributions and to include these in the operational plan. Records of drainage systems particularly susceptible to obstruction, and requiring more frequent maintenance, will also be important.
- 14.4.4 In planning for increased risk of flooding from inadequate drainage authorities should:
- undertake a risk assessment to identify sections of highway at greatest risk and/or the greatest consequences;
 - consult with local drainage authority;
 - implement targeted programme of improvement.

***New Paragraph
Added 14 May 2009***

- 14.4.5 Following flooding in June and July 2007, Sir Michael Pitt was asked by the Government to conduct an independent review of the flooding emergency that took place. The Pitt Review: Lessons Learnt from the 2007 Floods was published in June 2008 and it contains 92 recommendations, some of which are relevant to highway maintenance issues, with particular reference to a need to collate and manage the main flood risk management and drainage assets (over and underground), including a record of their ownership and condition. The report may be downloaded from the following website.

***Website Amended
27 April 2012***

<http://webarchive.nationalarchives.gov.uk/20080906001345/cabinetoffice.gov.uk/hepittreview.aspx>

***New Paragraph
Added 13 August 2010***

- 14.4.6 The Flood and Water Management Act received Royal Assent on 8th April 2010. The Act aims to improve both flood risk management and the way we manage our water resources. The Act creates clearer roles and responsibilities and instills a more risk-based approach. This includes a new lead role for local authorities in managing local flood risk (from surface water, ground water and ordinary watercourses) and a strategic overview role for all flood risk for the Environment Agency (EA). The Act may be downloaded from the following website:

**Website Amended
27 April 2012**

<http://www.legislation.gov.uk/ukpga/2010/29/contents>

14.5 SUBSIDENCE, HEAVE AND HIGH TEMPERATURES

- 14.5.1 The affect of high temperatures on running surfaces is likely to be the main consideration for the highway maintenance service and one that often needs attention. High temperatures can damage bituminous surfaces both by reducing skidding resistance and increasing susceptibility to rutting. Sanding of surfaces can mitigate the effects of the former but there is little that can be done to deal with the latter, other than in the design of the surfacing material. In very extreme conditions concrete roads can suffer acute damage as a result of expansion beyond design predictions resulting in 'pop outs' and may need complete reconstruction.



- 14.5.2 Although these issues are most effectively addressed through the design process, authorities should be aware from inventory, inspection and other information, the relative risks to parts of the network from excessive heat, and should establish priorities for treatment based on this assessment.
- 14.5.3 Increased dryness of soil is already causing problems with root growth of trees in the highway. Hammersmith and Fulham Council experienced considerable increase in subsidence claims in 2003-04 from £100,000 to £500,000. The Cambridgeshire study noted that an adaptation measure to avoid road subsidence and surface damage is tree felling. Trees remove moisture from the soil and if close to the road actually cause deformation of the road. Although this is not under consideration, it is an indication that radical measures may be necessary.