# Chapter 7 Water

| Water Summary | | |
|---|---|---|
| **Key messages of policy** | | |
| • LTP policies and programme needs to ensure water purity is protected and enhanced.<br>• Various flood risk management strategies and River Basin Management Plans are relevant to the area. | | |
| **Environmental baseline** | | |
| Environmental description | Baseline condition | Future trend without LTP3 |
| Biological and chemical water quality | increased 6% and 4% respectively to 96.4% and 98% between 1995 and 2006 | No issues identified that would worsen water quality |
| Nutrient water quality | 46.8% are still poor/ bad quality due to phosphates and 26.7% nitrates | Many nutrient pollutants relate to agriculture which will be the major driver in improvement. |
| Flooding | | |
| **Environmental issues and opportunities** | | |
| Description of issue | Implications/ opportunities for LTP3 | |
| Run off from roads and surface water quality | The transport network contains drainage systems that connect to surface water systems. No evidence of significant issues at present, but acknowledge that through LTP3 surface water resources need to be protected. | |
| **Data gaps** | | |
| Description | Action | |
| None | | |
| **Draft objectives** | | |
| SEA 11 Enhance the network's resilience to climate change e.g. reduce the risk of flooding. | | |

## 7.1 Stage A1: Key messages of policy context analysis

7.1.1 Stage A1 of the SEA, see Annex 1, has identified the key relevant plans, programmes and environmental protection objectives relating to water. The key messages of policy context are:-

- LTP policies and programme needs to ensure **water purity** is protected and enhanced.
- Various **flood risk management strategies** and **River Basin Management Plans** are relevant to the area.

## 7.2 Stage A2: Environmental Baseline

### Water Resources

#### Rivers

7.2.1 The three principal rivers in Derbyshire are the Derwent, Trent and the Dove and form part of the River Humber river basin district[1] i.e. Derbyshire's rivers eventually discharge into the North Sea via the River Humber. The largest tributaries are rivers Wye, Amber and Erewash. There are three catchment areas in Derbyshire; Derbyshire Derwent; Dove; Lower Trent and Erewash. Derbyshire's main rivers and tributaries are shown in Figure 7.1.

#### Man-made features

7.2.2 There are a number of man-made reservoirs across Derbyshire which are major features and visitor attractions, such as Ladybower, Derwent and Carsington. There are also four navigable or partially navigable canals; Peak Forest; Erewash; Chesterfield; and Trent and Mersey canal. There are other sections of disused canals such as Cromford Canal and Derby Canal which contain sections in water. Man-made water features are also shown on Figure 7.1.

[1] Environment Agency Draft River Basin Management Plan: Humber River Basin 2009 (Amended)

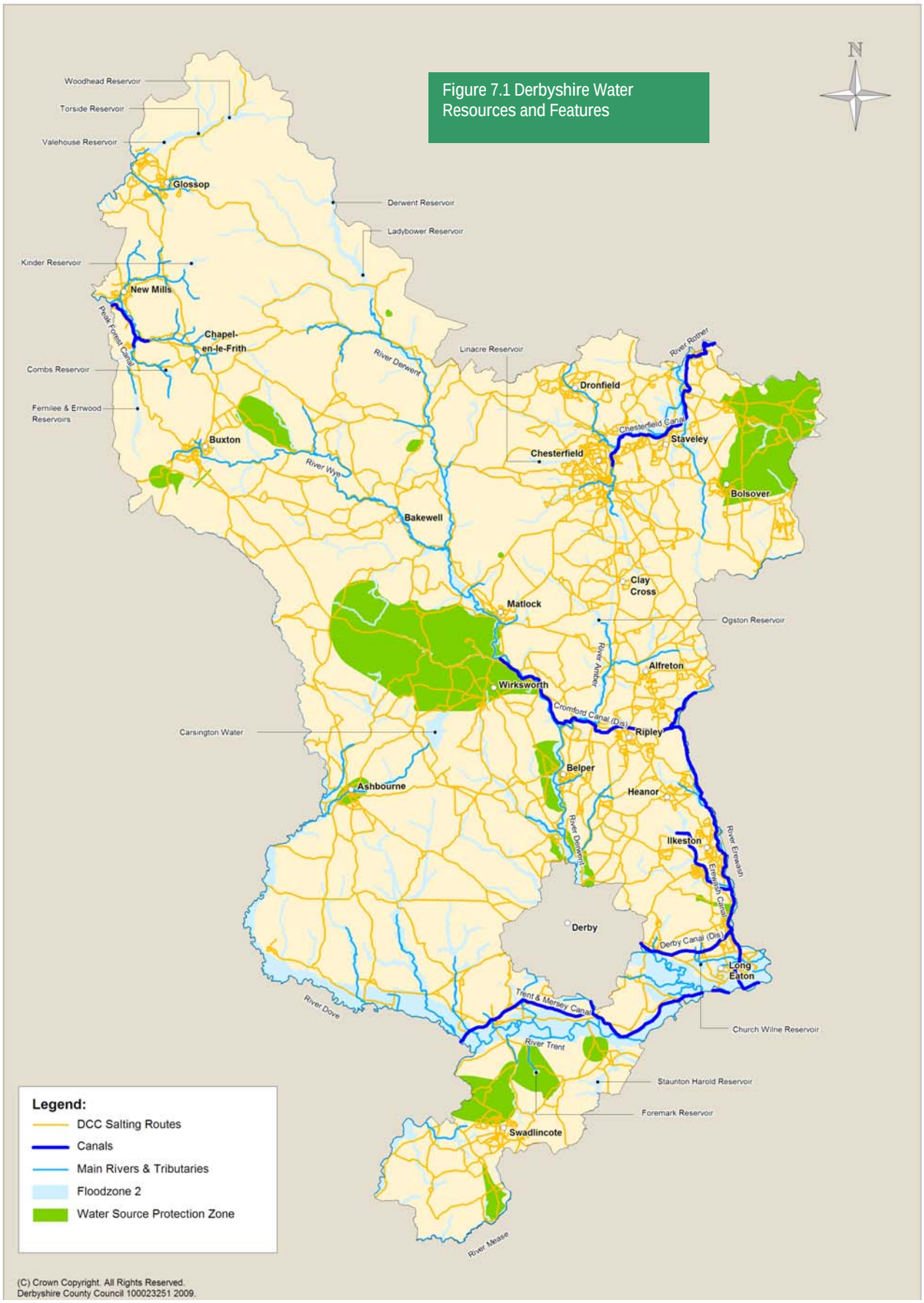
Figure 7.1 Derbyshire Water Resources and Features
N
Woodhead Reservoir
Torside Reservoir
Valehouse Reservoir
Glossop
Derwent Reservoir
Ladybower Reservoir
Kinder Reservoir
New Mills
Peak Forest Canal
Chapel-en-le-Frith
Combs Reservoir
River Derwent
Linacre Reservoir
River Rother
Dronfield
Fernilee & Errwood Reservoirs
Buxton
River Wye
Chesterfield Canal
Staveley
Chesterfield
Bolsover
Bakewell
Clay Cross
Matlock
Ogston Reservoir
River Amber
Alfreton
Wirksworth
Cromford Canal (Dis)
Ripley
Carsington Water
Belper
Ashbourne
Heanor
River Derwent
Ilkeston
River Erewash
Erewash Canal
Derby
Derby Canal (Dis)
Long Eaton
River Dove
Trent & Mersey Canal
Church Wilne Reservoir
River Trent
Staunton Harold Reservoir
Foremark Reservoir
Swadlincote
River Mease
Legend:
DCC Salting Routes
Canals
Main Rivers & Tributaries
Floodzone 2
Water Source Protection Zone
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### Groundwater

7.2.3 Groundwater also provides a third of our drinking water[2]. To protect these water sources, the Environment Agency has designated Groundwater Source Protection Zones, the location of these are shown on Figure 7.1.

### Surface Water Quality

7.2.4 Generally, water quality in Derbyshire has improved over the last ten years, particularly biological and chemical quality, which has increased 6% and 4% respectively to 96.4% and 98% between 1995 and 2006[3]. Although improvements have been made in relation to nutrients, 46.8% are still poor/ bad quality due to phosphates and 26.7% nitrates. The impact of nitrates on drinking water and also in causing eutrophication[4] has meant that the whole of the County is now designated as a Nitrate Vulnerable Zone[5]. 60% of nitrate pollution is caused by agriculture but other activities contribute to diffuse pollution, including [agriculture], forestry, mining, construction and urban life. Pollutants deposited on land, roads and spaces are washed into watercourses by rain. Examination of the Draft River Basin Management Plan for the Humber River Basin District 2009 (Humber RBMP) in relation to the Derbyshire Catchment Areas has not identified any particular issues relating to transport and its effects.

### Run-off from roads

7.2.5 Although the draft Humber RBMP doesn't specifically identify transport issues for the Derbyshire catchments, it does highlight run-off from roads [and other land-uses] as an issue to be tackled. There are 130,000 gullies draining Derbyshire's roads. We have referred to run off from roads in Chapter 4 where we identified that there has been only one known incident of road-runoff through LTP2 which is causing damage to a SSSI. There could be other instances of water pollution from traffic, caused by spillage, damaged drainage systems, surface water run-off, during floods, or road salting. We also have Environment Agency data about the quality of specific watercourses, but this does not suggest that poor water quality is due to pollution from roads. To try and identify the potential scale of the risk of pollution we have examined the length of road network carrying more than 25,000 vehicles a day within 300m of a watercourse; this was only 7.3km. By contrast this figure rises to over 200km for roads carrying between 5,000 and 25,000 vehicles a day.

### Summary of surface water quality

7.2.6 The information above suggests that the impact of the transport network upon water quality is likely to be small and therefore unlikely to be a strategic issue that we need to examine further. However, we will of course review this should data come to light that suggests otherwise.

### Flooding

7.2.7 The environmental baseline in relation to flooding is described in Chapter 6.

## 7.3 Stage A3: Environmental Problems and Opportunities

7.3.1 In this section we summarise the key issues or challenges for LTP3 that we have identified through the SEA Stages A1 and A2, which have identified the key messages of policy and an assessment of the environmental baseline.

| Issues/ Challenges | Implications/ Opportunity for LTP3 |
|---|---|
| Run off from roads and surface water quality | The transport network contains drainage systems that connect to surface water systems. No evidence of significant issues at present, but acknowledge that through LTP3 surface water resources need to be protected. |

[2] www.environment-agency.gov.uk
[3] Environment Agency 2006 River Quality Statistics
[4] Eutrophication is the enrichment of water by nutrients (such as nitrate or phosphate), causing an accelerated growth of algae and higher forms of plant life leading to an undesirable disturbance to the balance of organisms present in the water and to the quality of the water concerned.
[5] http://web.adas.co.uk/defra/

## 7.4 Stage A4: Developing SEA Objectives

7.4.1 The emerging SEA objective for water is as follows:

SEA 11 Enhance the network's resilience to climate change e.g. reduce the risk of flooding.