Road & Infrastructure Pollution Summary 12/02/24

General Info:

- There are 23 waterbodies classified by the Env. Agency within the Upper Lee Catchment.
- This includes a number of priority chalk streams, such as the Mimram, Beane, Rib, Quin and Ash.
- Many of these singular rivers, are divided into two or more distinct waterbodies for classification purposes.

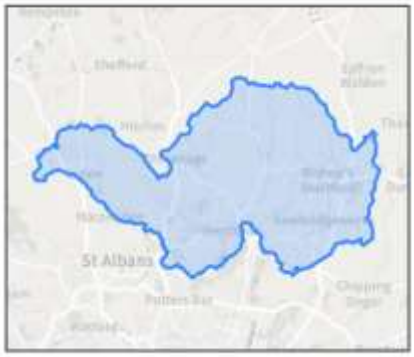

Figure 1 Upper Lee Catchment

- **None of the 23 waterbodies meet "Good Ecological Status" or "Good Chemical Status**" as prescribed by the Water Framework Directive (WFD) 2009 EU legislation.

Reasons for Failure:

- Per waterbody, there are multiple reasons for failure to meet WFD "good status" – including impacts and pressures like, changes to natural flows, invasive species, pollution and physical modification.

- Each reason for failure is attributed to a sector and/or activity in that waterbody area – for example, activities of the water industry, rural land management, recreation or urban & transport.

- **Pollution is a major pressure, impacting 22 out of 23 waterbodies in the Upper Lee Catchment.**

- Across the 22 waterbodies in the Upper Lee, the source of these pollutions is attributed to:

  - **Wastewater pollution** (e.g. sewage discharge, misconnected homes) – at least **25 individual counts over 14 waterbodies.**
  - **Agriculture and rural land management pollution** (e.g. farm infrastructure, poor livestock management) – at least **37 individual counts over 12 waterbodies.**
  - **Urban & transport pollutio**n (diffuse run off from towns, cities and roads) – at least **18 individual counts over 8 waterbodies**.

- **Diffuse pollution associated with hard infrastructure** - like tracks, roads and urban developments – combined across the Urban & Transport and Agriculture sectors – **there are at least 28 counts of pollution associated with hard infrastructure, across 10 individual waterbodies.**

Pollution from urban & transport alone, is confirmed to be causing :

1. **Sedimentation**
2. **Nutrient loading (phosphate)**
3. **Low dissolved oxygen**

On at least 10 individual waterbodies.

This in turn is causing Reasons for Failure under WFD, across the following measured elements:

- FISH – sedimentation (of spawning habitats), dissolved O_2 crashes and super oxygenation (fish kills and health), acute pollution events (fish kills and health)

- AQUATIC PLANTS – sedimentation (smothering plants, lack of photosynthesis), nutrient loading (excess algal growth, weakening root systems)

- INVERTEBRATES – sedimentation

Ecological status for surface waters

Table summarises the current ecological status of surface water bodies. Water bodies are classified as being at high, good, moderate, poor or bad ecological status or potential.

Ecological status or potential	Bad	Poor	Moderate	Good	High	Total
Number of water bodies	1	9	13	0	0	23
Number of water body elements	3	27	25	26	185	266

Chemical status for surface waters

Table summarises the current chemical status of water bodies. These are classified as being at good or fail.

Chemical status	Fail	Good	Total
Number of water bodies	23	0	23
Number of water body elements	44	375	419

Appendix – supplementary data/info taken from
https://environment.data.gov.uk/catchment-planning/OperationalCatchment/3493

Counts of pollution (and associated sector) causing failure under WFD:

- Beane upper – agri x10 counts
- Beane lower – agri x 4 counts
- Ash upper – wastewater x1 count
- Ash lower – wastewater x1 count
- Cannons brook – urban & transport x3 count, agri x3 counts
- Fiddlers brook – urban & transport x3 count, agri x4 count
- Great Hallingbury brook – urban & transport x1 count, wastewater x1 count
- Lee (luton to hertford) – wastewater x1 count
- Lee (Luton) – wastewater x3 count, urban & transport x5 count,
- Lee (Hertford to Fieldes Weir) – wastewater x1 count
- Little Hallingbury Brook – agri x2 counts
- Mimram upper – urban & transport x2 count, agri x4 counts
- Mimram lower – wastewater x1 count,
- Pincey brook – wastewater x1 count, agri x1 count
- Quin – agri x2 counts
- Rib lower – wastewater x2 count, agri x3 count
- Rib upper – wastewater x3 count, agri x2 count
- Stansted brook – none
- Stevenage brook – urban & transport x2 count, agri x1 count
- Stort (clavering) - Wastewater x4 count, agri x1 count
- Stort Bourne Brook – wastewater x2 count
- Stort (B'Stortford to Harlow) – wastewater x2 count, urban & transport x1 count
- Stort (Harlow to Lee) – wastewater x2 count, urban & transport x1 count