Supplementary written evidence from Stormwater Shepherds UK

Thank you for allowing me to contribute to the River Water Quality Inquiry earlier this week held by the Environmental Audit Committee; I was very grateful for the opportunity. I'm not sure if I made the points that I planned to make and I hope you will allow me to submit this written list of those points.

1. Highway outfalls cause pollution every time it rains. On roads where the average traffic density exceeds 30,000 vehicles per day, this pollution is unacceptable and should be controlled using a Permit.

2. The pollution from road runoff is toxic so, unlike sewage pollution (domestic sewage) it cannot be broken down by micro-organisms in the water environment. It is toxic to many of those organisms so it builds up in the sediment and affects the entire eco-system of the river.

3. The Environment Agency has the power to serve notice on the highway authority insisting that they apply for a Permit for a specific outfall that is causing pollution. The Permit would contain details of the level of treatment that must be applied to the runoff in the outfall. These powers are in the Environmental Permitting (England and Wales) Regulations 2016. They have never served such as notice on Highways England.

4. The pollutants of concern in road runoff are Copper, Zinc, Poly Aromatic Hydrocarbons, microplastics (tyre-wear particles) and suspended solids. These pollutants are present in some of the runoff in levels far exceeding that in raw sewage.

5. Poly Aromatic Hydrocarbons include organic compounds such as Benzo[a]Pyrene. These compounds are Priority Hazardous Substances (PHS) due to their carcinogenic, mutagenic and bio-accumulative properties. They also affect the reproductive success of aquatic species. The Environmental Quality Standards Directive requires that the causes of such pollution with PHSs are identified and that emissions should be dealt with at source. It goes on to say that pollution from these substances should be phased out and ceased.

6. The Environment Agency and Highways England know that these outfalls cause pollution and they know where they are. The EA has taken no action to make highway authorities and Highways England install treatment devices at these outfalls in recent years. HE have their own programme of installing devices at high risk outfalls but they have installed only 5 treatment schemes per year over the last 6 years and they have at least 2,500 high risk outfalls (they have 25,000 outfalls in total).

7. The EA does not assess the treatment schemes that HE designs and installs so they are often too small to be effective and they are not maintained in accordance with the

design criteria for maintenance. If they are left un-maintained, many manufactured treatment devices will stop working within a couple of years.

8. In the UK we have an extensive array of treatment devices that can reduce pollution in road runoff by about 50% passively and cost-effectively. These treatment devices are well proven and many of the manufactured devices are made in the UK. So increased treatment at outfalls could be good news for UK manufacturers too.

9. Good design of the treatment scheme is essential and some of the HE schemes are not designed well. The treatment device must be big enough to treat all sub-annual rainfall events so that most of the pollution is captured. These schemes can cost up to £500k to design and install so it is a false-economy to install an under-sized device that will not work.

10. Highways England have the money to complete some of this work in their Designated Environment Fund. However, other highway authorities have no money to retro-fit these treatment devices to their highway outfalls. Some authorities are using innovative funding methods to install some devices, using Sustainable Drainage Systems that deliver multiple benefits for local people and wildlife. But stormwater management has no reliable, secure funding stream and it would be good to consider options for Stormwater Utility Charges applied perhaps via Water & Sewerage Company charges, via Council Tax or via some other mechanism. Germany and some US States have very effective Stormwater Utility Levies in place which allow them to deal with stormwater pollution effectively.

11. The potential impact of the Poly Aromatic Hydrocarbons in this runoff on 'River Swimmers' is unknown. There is research on exposure to Benzo[a]pyrene but I cannot find any research into the health effects of swimming in rivers polluted with these compounds.

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