Staveley water and wastewater
A briefing note – January 2024

Introduction

This is intended as a briefing sheet about the work the Clean River Kent Campaign (CRKC) has done and where discussions have got to with United Utilities (UU) and other agencies about dealing with wastewater in Staveley and in the river Kent.

We hope that you, your family/colleagues will be able to attend the Drop In that UU is organising on **Wednesday 31st January 2024, in Staveley Village Hall, 12.30pm to 6.00pm**.

Thank you!

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1 Raw sewage in our environment is not only disgusting, but also an environmental and a health hazard. Over 300 local people signed the recent petition demanding action from United Utilities (UU).

2 We have two aims:
- There should be no sewage in the river Kent.
- There should be no sewage in the streets of Staveley.

No sewage in the river Kent

3 After years of community campaigning, UU has finally publicly committed to upgrade the Staveley Wastewater Treatment Works (WwTW) by 2030. Wastewater will be treated to a 21st century standard.

4 This will support the improvements required to restore the unique ecological status of the river Kent as a Site of Special Scientific Interest (SSSI), and to ensure that the river supports a range of water-based leisure pursuits including swimming, kayaking and angling.

5 As yet we have no details of the scheme but expect to hear more detail on 31 January.

6 Untreated sewage is discharged into the river Kent e.g. when the WwTW capacity is insufficient to treat the volumes delivered through the sewerage system. At present we

know that this happens on 1 day in every 2, the 4th worst performance of all the WwTWs in the North West.

7 Our investigations show that an increase in the river level to 0.43m at the Gowan at Staveley gauge will result in raw sewage being discharged at the WwTW 9 out of 10 times. This rise in the river level is by no means always associated with increased rainfall, but it may be a proxy for the ingress of fresh water into the sewerage system.

8 In many parts of the country, including Staveley, the sewerage system is "combined". This means that, in addition to sewage, the combined sewerage system also collects groundwater[1] and surface water[2] both of which are "fresh water". Unfortunately, this means that the WwTW is in effect having to treat excess volumes of diluted sewage because of fresh water entering the sewerage system rather than flowing directly into the river.

9 UU are exploring the possibility of reducing surface water by encouraging households and businesses to use "smart water butts".

10 Of course, CRKC is in favour of water butts. But we are concerned that, even if every building was provided with one, the water butts would catch only a small proportion of the total rain falling on Staveley. The total volume of fresh water entering the combined sewerage system would not be reduced by very much.

11 This may seem surprising, but it could be explained if the major source of fresh water entering the combined sewerage system is groundwater rather than surface water. The water butts would help a little, but reducing the volume of groundwater is likely to be more effective.

12 Groundwater appears to be a major contributor to the combined sewerage system. It is therefore vital to understand where this is entering the system and how the flow can be prevented or at least reduced. Investigations by both UU and the Lead Local Flood Authority which is Westmorland & Furness Council (W&F Council) are underway.

13 This work is crucial for two major reasons:
- To explore options of diverting at least some of the fresh water and thereby reduce the volumes requiring treatment at the WwTW
- To reduce the risk of sewage backing up on to Staveley streets.

14 We will have the opportunity on 31 January to discuss this with UU together with W&F Council who will also be at the Drop In.

[1] Groundwater is fresh water located in the subsurface pore space of soil and rocks. It is also water that is flowing within aquifers below the water table.
[2] Surface water is water located on top of land, forming terrestrial waterbodies including rivers and lakes. It can come from roofs, patios, gardens and hard standing.

No sewage in Staveley streets

15 The improvements to the WwTW should be designed to eliminate the need to discharge untreated sewage into the river. However, this work alone will not achieve our second aim of no sewage in the streets.

16 This occurs when the volume of water in the sewerage system is unable to enter the WwTW and backs up until it emerges through manholes in the village. Our observations indicate that this happens when there is an increase in the river level usually to around 1.0 m at the Gowan at Staveley gauge, although sometimes it can happen at 0.75 m.

17 Eliminating sewage in the streets will require more than an engineering solution at the WwTW; we need an integrated plan for Staveley, and there is likely to be more than one approach needed.

18 There has been discussion for some time about problems associated with a narrowing of the sewer pipe from 375mm to 300mm under the river Gowan and to 225mm under the river Kent. This would obviously limit the flow to the WwTW and could increase the risk of sewage backing up into the village.

19 Another approach is to reduce the volume of fresh water entering the combined sewerage system (as discussed at paras 8-13), thereby reducing the risk of sewage backing up.

20 We welcome the investment which UU propose for Staveley WwTW. We are also looking to UU to investigate (together with W&F Council) how the ingress of fresh water into the sewers and thus the overall volume reaching the WwTW can be reduced, and to explore other approached to preventing sewage discharges into our streets.

21 Staveley is an active local community, and since Storm Desmond we have investigated the problems with wastewater as well as the flood risks which we face. We live here, and we have been able to collect information which would not otherwise be available to UU.

22 We expect UU to share their hypotheses, their data, their calculations and their modelling with us, so that we can ensure that our priorities are met, that the investment is best value for the local community and for the river Kent, and crucially that it meets our two aims:

- There should be no sewage in the river Kent.
- There should be no sewage in the streets of Staveley.

23 The Drop In Event on 31 January (12.30-6.00 pm in the Village Hall) is a great opportunity to find out more about the plans which are being developed, and to have your voice heard. We hope you will come along to find out more and discuss the work underway by UU and their partners.

24 If you would like further information about CRKC and the event: http://www.sustainablestaveley.org.uk/our-projects/clean-river-kent-campaign/
If you would like to send us any information or questions ahead of 31 January, please email sheila.adam1@gmail.com

Some questions which we hope UU will be asked and will answer on 31 January 2024

1 Please describe the proposed scheme at Staveley WwTW. What will be the impact on:

- The treatment capacity – what will it be increased to?
- The frequency, duration, and volume of discharges of partially and untreated sewage
    - Into the river Kent
    - On to the streets in Staveley
- The quality of treated effluent eg the levels of nutrients and faecal bacteria, and oxygen availability
- The environment, bearing in mind that the river Kent is a Site of Special Scientific Interest (SSSI)
- Net carbon - to what extent can the impact on climate change be reduced?

2 There has been discussion over the years about the need to enlarge the sewage pipe which runs between Staveley and the WwTW

- Is UU taking this idea forward?
- If not, why not?
- If so, what will it involve?
- If there are no plans to tackle this, how do you propose to stop sewage discharges on to our village streets?

3 What is your current understanding of how best to reduce the ingress of fresh water into the combined sewerage system?

- What do you know about the sources of this water? Do you have an integrated map which we can look at?
- From what you know now, where would you prioritise early investment?
- What further information do you need, and how long will it take to get that?
- Exactly what plans do you have to tackle this?

4 Specifically on surface water we know that UU is promoting smart water butts. However, we understand that a water butt for every building in Staveley would achieve only a small reduction in the fresh water entering the combined sewer system. For example, if there were 1,000 x 210L water butts in Staveley, it would take only 7mm rain to completely fill them all.

- How much does this match your calculations?
- What impact do you think that smart water butts will make on sewage discharges at Staveley WwTW, and on sewage discharges in Staveley streets?

- What other practical measures are UU proposing to reduce fresh water entering the combined sewerage system in Staveley?

5 You obviously work closely with the EA. Staveley was seriously flooded in December 2015, and it is important that any proposals from UU to improve the management of wastewater do not increase the flood risk to either residents or businesses.

- Do you and the EA share data?
- If not, how do you manage the possible unintended consequences of altering water flows?
- If you do, do your shared calculations and models indicate any risks?
- What are the overall plans to reduce flooding in Staveley?

6 Your business plan for 2025-2030 (https://pr24.unitedutilities.com/) is very strong on environmental benefits.

- How will you assess these?
- What specific improvements can we expect in the river Kent by 2030?