Re: Winchelsea Beach foul flooding

Thank you for your letter dated 25th November, requesting an update on the floods at Winchelsea Beach. I apologise for the delay in responding to you.

Our Catchment Planning Manager has provided a detailed assessment of our progress at Winchelsea Beach, as set out below.

The system served

The pumping station at Morlais Ridge receives wastewater from 328 permanent residential properties, a population of around 900. The peak foul flow from these properties equates to around 4 l/s. The pumping station can pump at 13 l/s in dry weather. The system was designed to convey domestic wastewater, but not surface water.

There are a number of caravan parks in Winchelsea Beach which connect to the sewerage system draining to Morlais Ridge WPS. It is estimated that these total around 700 caravans and when fully occupied the total population may increase by 2800 people. However, this does not mean that the wastewater flow would increase by 400% as water usage at caravans is likely to be less than permanent homes and holiday makers are likely to be out during the day. The evidence we have from pump monitors and reports from customers is that in dry weather even in the height of summer the system is reliable.

Surface and Groundwater Water Infiltration

However, in prolonged wet weather the system suffers from additional flows into the network. There are four likely mechanisms of additional flow and we have been studying these over the last 10 years to build an understanding of the complexity of the system. Firstly, there are connections from roofs, patios and roads which direct the rainfall runoff straight into the sewerage system. Our surveys show that this doesn't appear to be a significant issue, though some properties with mis-connected rainwater have been identified and modifications discussed with customers. The fact that a short summer rainfall event does not cause issues would appear to support that these connections are not widespread.

Secondly, there is the potential for groundwater to enter the system through poorly jointed pipes. Winchelsea is very low lying relatively to tide level and in winter as groundwater levels increase pipes may become effectively submerged. Any leaking joints or poorly constructed manhole chambers then suffer from groundwater infiltrating into the sewer system and thereby putting additional strain on the pumps at Morlais Ridge.

Thirdly, and we believe from the work we have undertaken over the last 10 years, a significant contributor of additional flows, is rainwater which soaks into the soil then infiltrates into the sewerage system through leaking joints even when the groundwater table itself is low.

Finally, if rainfall is prolonged and the soil becomes saturated surface ponding can and does occur and this can enter the system at the ground surface through leaking manhole covers or through kitchen waste gullies.

These flow mechanisms can affect the entire system both public sewers and private laterals and privately owned and maintained systems.

The problem has been ongoing for a number of years and despite the work undertaken to date by Southern Water on the public sewerage system and some of the privately owned systems the problem continues, which demonstrates how complex and difficult to solve this is.

What we have done

Southern Water is responsible for around 4.5km of public sewer connected to Morlais Ridge pumping station. However, the privately owned lateral drains and systems are greater in length than the public system, particularly when taking account of the privately owned systems on the caravan parks. The pumping station at Morlais Ridge is at the lowest point in the system and all flow gravitates to that point and the flow conveyed forward is limited by the capacity of the pumping station. It is because of these factors that Southern Water is seen as the cause of the issue though in reality this is a system wide problem requiring collaborative work, particularly with the caravan park owners, which we have been leading on.

In the last 10 years since this issue very much came to a head in the wet winter of 2012/13, Southern Water has focussed much time and effort in understanding the capability of the public sewerage system for which it is responsible.

The pumps at Morlais Ridge are regularly maintained and are available and reliable in times of need.

95% of the public sewerage system has been surveyed by closed circuit TV cameras to understand the structural integrity of the public system. The 5% of public sewers not surveyed are at a level higher than the highest groundwater levels and are therefore not prone to infiltration. Around 50% of the public system deemed to be most at risk of sewer leaking has been re-surveyed using a relatively new technique brought in from the USA called electroscan. These surveys identify sewers which although structurally sound, have the potential for letting water in at poor pipe joints.

Following the surveys, 1.1km of public sewer with defects likely to allow infiltration into the system, has been sealed.

Further electrocscan surveys of the public sewerage system and parts of the private system in caravan parks were undertaken in 2022 and these identified a further 1.1km of repairs required. Of these 700m are on the public sewers and 400m in private systems. 740m of this has recently been completed.

Due to the wet weather experienced in November the remaining 370m has been delayed though we are hopeful that this will be completed before the end of January 2023. The majority of the repair work uses a ‘no-dig’ technology to keep disruption to residents to a minimum. Disappointingly there is one length of public sewer with significant defects which is in private land but the customer will not allow us onto the property to repair. We will be working with the customer to understand the reasons for this and hopefully agree a way round those concerns.

The private systems

In addition to the physical surveys of public and private sewers, we have discussed with land-owners the private drainage systems serving the caravan parks in Winchelsea to better understand the extent, performance and integrity of these systems. We have surveyed all private systems in these parks to map the location and connectivity of drains and also lifted covers to get an indication of the flow in these systems.

Where defects have been identified we have alerted caravan park owners of the need to make repairs and we have been advised these repairs have been made. We have surveyed a sample number of individual properties in the village to better understand the integrity of private lateral drains and to understand where roof drainage connects to. Some sewer structural issues have been identified which we have offered to address at no cost to the property owner. We have also identified properties in the sample where the roof drainage connects directly to the public wastewater system, we have discussed with property owners the need to disconnect the guttering so the rainwater is diverted to land or water butts and will be following up with property owners to enable the delivery of this.

We have had meetings with the two largest caravan park owners to understand how they manage surface water on their parks. Following these discussions we have recommended more detailed surveys of their systems due to concerns about the method of drainage. The caravan parks have been very open and helpful with allowing these surveys to proceed and we have been undertaking this work on their systems, at our own cost, during December.

Land drainage

We believe the current practice of holding land drainage ditches high throughout the year is adversely impacting the holistic drainage system. This is leading to more saturated ground and greater surface ponding and greater potential for inundation and infiltration into the sewerage system, both public and especially private drains in the caravan parks. We have previously discussed this with those responsible for land drainage but this has not yet led to any change to the way the ditches are maintained. We have a meeting with the Environment Agency to discuss this and to understand the constraints in this system.

Operational response

As stated in the above, although not all additional flow arises from the Southern Water owned system following the extensive repairs carried out, Morlais Ridge is the low point in the system so it is where the problem manifests itself.

Southern Water therefore responds to high levels in the network, which our sensor alerts us to and we take action to continue to ensure customers will still be able to use the wastewater service. The only effective response is to assist the output of the pumping station by relieving excess flows through tankering. We know this is disruptive and we would not be doing this if there were an alternative. Responding to previous customer concerns we have moved the tanker point to an off-road location adjacent to the caravan park to minimise disruption (previously we closed part of the public road) to the shops and wider location community.