



## HORNING STATEMENT OF FACT

ISSUE DATE: August 2023

### Summary

A conventional sewerage network in the Riverside area of Horning has proven to be unsustainable due to changes in ground conditions and prevailing hydrology in the area. Ground conditions in this area are the cause of structural failures of both the public sewerage network managed by Anglian Water and privately-owned drainage network. Soil in the area is predominantly peat over laying crag (sand and gravel), which is porous and has low cohesion and as such is subject to continual movement. This results in displaced pipe joints and collapse due to lack of ground support. This is endemic in the area and will affect both the public sewerage and private networks. When combined with the permanently high-water table this results in a high level of groundwater infiltration.

Also, in times of river flooding much of the area is underwater resulting in inundation to the public and private foul water drainage networks through multiple and various points. It should be noted that much of this excess surface water ingress is not intentionally connected but enters the system through defects and overland flooding.

### Horning Knackers Wood Water Recycling Centre (WRC)

The river flooding and groundwater infiltration into the network results in the WRC being flow non-compliant. However, an assessment of legitimate flows to the WRC based on the potable water supplied to the area and the population it serves, shows the WRC would be compliant with its permit without the excess surface water ingress. If circumstances allowed for the foul water sewerage network to operate within the intended parameters, the WRC would be compliant with its permit.

### Historic Investigations and Works

DATE	INVESTIGATIONS AND WORKS BY ANGLIAN WATER
2000	Groundwater/surface water Infiltration along Ferry View Road found that large scale groundwater/surface water inundation was present as a result of damage to private laterals.
2002	CCTV survey was undertaken.
2014	Sewer rehabilitation scheme completed.
2015	Excess flows still an issue at Ferry View Terminal Pumping Station.
2016	Survey identified infiltration into both public and private systems together with surface water connections.
2017	Horning Flooding Assessment undertaken – conclusion; continued settlement of the ground leads to more operational issues.
2018	Horning Road sewer collapse, refurbishment of subsided sewer on Ferry Road completed Feb 2018.
2018	Requests made to property owners to remove surface water connections.
July 2021	CCTV surveyed the sewers connecting in Ferry View Road and Ferry Road.
Aug 2021	Further survey work in Ferry View Road.
2022 – Jul 2023	Works undertaken to address infiltration and surface water inundation has included: <ul style="list-style-type: none"> <li>extensive repairs on a manhole on Ferry View Road to prevent persistent infiltration.</li> </ul>

DATE	INVESTIGATIONS AND WORKS BY ANGLIAN WATER
	<ul style="list-style-type: none"> <li>• We identified and contributed to the repair of a private lateral drain that was found to be disconnected and was being inundated by river water.</li> <li>• On Ferry Cott Lane and Ferry Road three manholes have been internally sealed to prevent infiltration into the network.</li> <li>• Re-laid 60m of new sewer from Ferry View</li> </ul>

### **Rainfall Data**

From the investigations completed it is likely that the amount of rainfall is not the most significant influence on the sewerage system. There are some direct surface water connections to the foul water network, however, the impact of these is insignificant compared to the impact of river/ground water infiltration.

### **Groundwater Levels**

The groundwater level is directly linked to the river level. Much of the public sewerage network is below the low water level of the river and the surrounding soil type is porous

### **Highway Drainage**

The road gully on Ferry Road is connected to the foul sewer. Various discussions have taken place with the Norfolk County Council as Local Highway Authority and Lead Local Flood Authority, North Norfolk District Council as Local Planning Authority, businesses and the Environment Agency regarding its removal. The highway at this location is unadopted and the ownership of the gully has not been established.

### **Long-term Flooding Vulnerability**

Climate change observation and predictions indicate increases in high river levels and the frequency of high flow conditions. This will expose more of the FW networks to surface water inundation and may also increase ground movement around pipework, leading to more points of infiltration.

### **Next Steps**

Despite the investigations and works undertaken by Anglian Water to date, the WRC remains uncompliant with the Dry Weather Flow permit for the WRC. Anglian Water will continue to operate and maintain the public sewerage network in Horning and will respond to loss of services as appropriate. We will continue to discuss with the Environment Agency and look at other possible interventions in relation to WRC compliance and the operation of the public sewerage network.

Remaining works to be undertaken:

- Ferry View Road:
  - Inspect and repair any damaged lateral connections
  - Patch repair to be installed to prevent infiltration at joint in sewer
  - Ferry View Road Pumping Station - Raise cover level and install new sealed cover of wet well
- Ferry Road:
  - Disconnect surface water road gully from the foul system to ensure it flows out to the Broads

Our Water Recycling Long Term Plan (WRLTP) outlined a scheme, then proposed in business plan, to increase dry weather flow (DWF) at Horning Knackers Wood WRC. However, this will not improve the existing issues of infiltration. Consequently, we have not committed to the increase of DWF at the WRC, as we need to understand the impact of the infiltration removal work to be able to correctly design for the increase in capacity. The Drainage and Wastewater Management Plan 2025-2050 (DWMP) identifies a medium term need to apply for a new permit, once all infiltration removal solutions have been pursued. Anglian Water is continuing to investigate potential solutions at the WRC to realise the strategies identified in the DWMP

However, as the issues are predominantly related to river flooding, it involves assets outside of our ownership and prevailing environmental conditions that compromise standard drainage techniques / practices. Therefore, there is no immediate engineering solution available to Anglian Water that can provide effective mitigation of the impact of the excess surface water ingress. Furthermore, Anglian Water does not have the remit under Water Industry Act 1991 to entirely fund all solutions.