

AINSTY (2008) INTERNAL DRAINAGE BOARD
FLOOD INVESTIGATION REPORT UNDER PROVISIONS OF SECTION 19
OF THE FLOODS AND WATER MANAGEMENT ACT
TOCKWITH NEW ROW FLOODING

1. INTRODUCTION

Ainsty (2008) Internal Drainage Board is the Drainage Authority for this location and has a duty to investigate and report on the cause of flooding in its drainage district. This is a requirement under Section 19 of the Floods and Water Management Act 2010.

TOCKWITH NEW ROW FLOODING

Flooding has been occurring in relation to intense storms which have occurred over at least the last seven years which has led to property flooding within New Row, Tockwith. The watercourses concerned are 'ordinary watercourses' and are not maintained by the Ainsty (2008) Internal Drainage Board. The watercourses further drain numerous minor tributaries which provide land drainage to higher ground which is outside the Boards Drainage District. It is also possible the land drainage systems upstream have been improved over the years which result in quicker run off into the drainage system.

It is noted that this land drainage system drains a large area of land to the south which has a reasonably fast runoff because of the land topography which causes water to accumulate to the south of the road in an open ditch. The open ditch draining under the road to the North in a 300mm pipe.

This 300mm pipe appears to convey a significant flow under the Tockwith Road which on the north side discharges into a manhole. This flow is diverted in the manhole at 90 degrees to the east and joins the flow from New Row Cottages from a 225mm pipe. The discharge from the manhole is also a 225mm pipe which runs for a further 90 metres along the road to the east. The sewer then has a 90 degree bend to the north and enters an ordinary watercourse. This open watercourse flows north for approximately 85-90 metres before reaching the entrance of a 300mm culvert which then takes the flow east for 200 metres. This then discharges into the beginning of 'White Syke' which is an IDB maintained open watercourse.

Please see the attached map which has been provided by Harrogate Borough Councils Drainage Section.

In intensive rainfall conditions the drainage system at this location becomes overwhelmed resulting in flooding in New Row Cottages. In this investigation a number of possibilities are raised in the drainage system as contributing to the flooding following heavy rainfall events.

CONSTRAINTS

These include:

- The drainage system is noted to have various constraints restricting flow such as sharp bends and changes in pipe size which could slow flow conveyance down.
- The system may have pinch points which cause discontinuity in flow capacity which could cause flow to back up or even reverse flows to New Row.
- It is possible a Yorkshire Water raw water main installed in 1977 could have damaged the surface water culvert in the field.

It is therefore difficult to establish the scope of the works required without hydraulic modelling being carried out along with looking at the restrictions in the pipe (eg CCTV). The modelling being required to simulate high flow conditions to establish the true constraints on the system in regard to flooding. However hydraulic modelling and CCTV is expensive and currently not funded.

A number of meetings have been held but without a detailed technical report it is unclear what technical solution will resolve the matter.

LOCAL CHOICES

Local choices exist on the current situation which are:

- To establish funds to engage a consultant to review the drainage system and prepare a small strategic scheme to remediate the problem. To then seek funding to progress the scheme. The solution may be upgrading the system or diverting flood waters away from the property flooding or provide flood mitigation to protect the properties.
- A less strategic approach to try to address potential identified flow restrictions without hydraulic modelling which would appear to improve conveyance of flows to see if they resolve the issue.
- To seek funds to study and implement Property Level Protection for when floods occur such as Installation of flood gates on the properties affected.

CONCLUSIONS

To resolve this issue the Board would recommend that a study is required by a reputable consultancy. The scope of this study should include hydraulically modelling the problem taking into account the areas being drained. This along with investigating the condition of the existing pipes and culverts. To further conclude if the Yorkshire Water raw water main has damaged the surface water culvert. The study should then recommend improvements to reduce the flood risk of the properties and effective operation of the land drainage system. This study however will need to be funded to be able to be progressed. If the study work is not progressed it will remain uncertain on the actual requirements of the system to stop the flooding with an appropriate solution. It is possible that Flood Defence Grant in Aid (FDGIA) or a Levy payment could be achieved to conduct the study and to possibly implement the outcome. However it is likely a significant local funding contribution towards the work would be required. This being particularly difficult to progress when the scope and cost of work required resolving the matter, has not been established.

PARTIES INVOLVED

Cllr J Savage

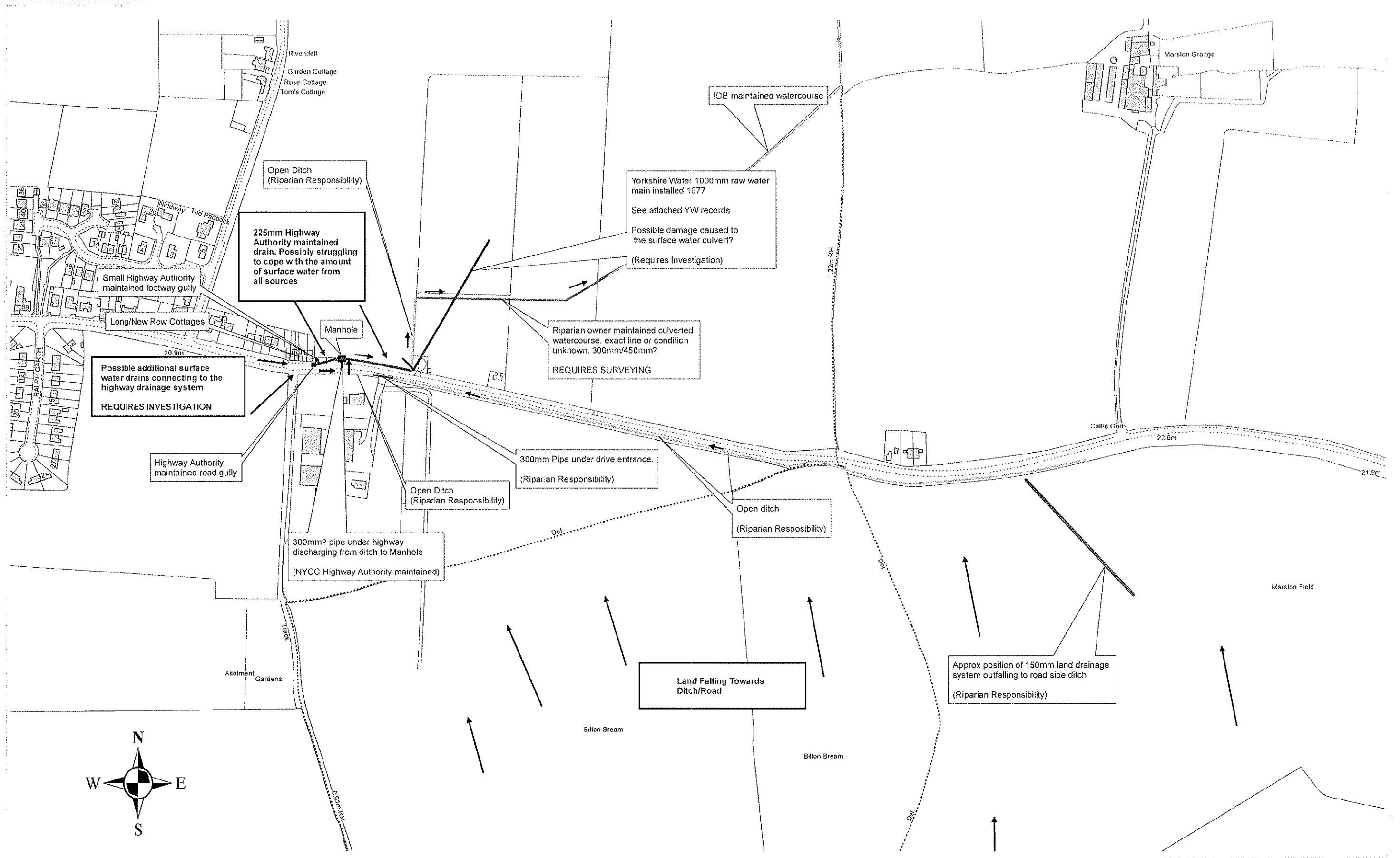
HBC – Harrogate Borough Council

HBCH – Harrogate Borough Council Housing

NYCC – North Yorkshire County Council & Highways Division

Ainsty (2008) Internal Drainage Board

EA – Environment Agency



New Row, Tockwith

not to scale