
Project	Telford & Wrekin Level 2 SFRA	Date	4 th March 2008
Note	Site Visit 21/02/2008	Ref	WBTWCS
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1 *Introduction*

1.1 On the 21st February 2008 Halcrow visited the Hurley Brook/Ketley Brook and the Crow Brook to facilitate the hydraulic modelling exercises that will follow for the Level 2 SFRA. This Technical Note is a brief summary of the site visit and findings.

2 *Ketley Brook*

2.1 Ketley Brook forms an upstream tributary of the Hurley Brook. The reach of this watercourse to be modelled extends from SJ 67320 10130 to SJ 66728 12671 (where it meets the Hurley Brook). There is currently a new housing development being constructed at the upstream extent. Atkins has written a report about the flood risk in this area, which the EA thinks the Council has, and if so will be required to assist the study.

2.2 The first structure on Ketley Brook is the culvert under the M54. This is a 1m diameter circular culvert (picture 001 Appendix A). Downstream of this culvert there is a flow baffle (pictures 003-005 Appendix A) (SJ 67305 10252). The base of this appears to be just above the low flow conditions for the brook. Immediately downstream of this is a balancing pond (pictures 006, 007 Appendix A). Water from the pond flows out over a spill at the eastern side (picture 008) (SJ 67195 10276). The spill incorporates a drop of approximately 1.75m, downstream of which the channel becomes an artificial concrete channel (picture 009). At the downstream end of the artificial channel there is an inflow from the drains on the Ketley Dingle Interchange (M54 junction 6) (SJ 67112 10404). The watercourse then reverts to natural channel and flows towards the Sinclair Ironworks.

2.3 Information from the EA (based on the submitted consent for modification of the culvert) has indicated that Sinclair Ironworks has diverted a culvert (which originally flowed under the site) and replaced it as it was in poor condition. The culvert is now a 1950mm diameter pipe with an invert of 102.180m and is located at SJ 67100 10500. It was not possible to examine the inlet as it lies within the Sinclair Ironworks site and permission to enter the site had not been obtained. The culvert emerges north of Holyhead Road (A518) (pictures 10-12 Appendix A) (SJ 66950 11063). The watercourse emerges from two

culverts, a circular culvert 1m in diameter and a box culvert 1m by 2m. The watercourse flows onward to a flood storage area where it sinks into a drop culvert (pictures 13-21 Appendix A) (SJ 66885 11361). The drop culvert appears to be 2.5m deep with a plan of 2m by 2m, with two 450mm diameter culverts exiting it. The brook eventually emerges at its confluence with the Hurley Brook (pictures 22-27 Appendix A) (SJ 66728 12671).

3

Hurley Brook

3.1

The reach of Hurley Brook to be modelled extends from SJ 65703 10808 to SJ 66650 13650. At the upstream extent Hurley Brook emerges from a culvert under a new housing development site (picture 43 Appendix A). The channel is artificial at this point. It then proceeds under Limekiln Lane (pictures 42, 44-46) (SJ 65754 10828) before flowing in a natural channel for a short distance and then entering a culvert (SJ 65879 10927). It was not possible to view the entrance to this culvert due to lack of permission to enter the site. The watercourse proceeds under Telford football ground before emerging for a short distance near Arleston Lane (pictures 36-41) (SJ 66334 11431). Along this stretch the brook exits and enters through culverts of 1m in diameter. From examining OS maps of the area the brook then appears to emerge in Haybridge Industrial Estate, though this will be verified during a second site visit. N.B. second site visit has confirmed that this is just a drain and not part of the Hurley Brook. The brook then appears to sink again and proceed to the confluence with the Ketley Brook (pictures 22-27 Appendix A) (SJ 66728 12671). The watercourse then proceeds north passing under Leegate Avenue (pictures 33-35 Appendix A) (SJ 665555 13375) and Queensway (A442) (pictures 29-31 Appendix A) (SJ 66522 13447) before reaching the downstream modelled extent (picture 28 Appendix A) (SJ 66650 13650).

3.2

At this time there does not appear to be any hydraulic modelling issues with these stretches of watercourse. Halcrow require the Atkins report for the Lawley site in order to appropriately progress the hydrological analysis.

4

Crow Brook

4.1

The reach of Crow Brook examined on site extends from SJ 68590 11510 to SJ 67940 14880. This is the reach which we planned to model, based on an examination of the existing Flood Zone information and where refinement is therefore required. However, through the course of the site visit it has been concluded that the Crow Brook is likely to have been diverted from its natural course. Figure B.1 in Appendix B shows the Flood Zones following the original channel path, and a line showing where the channel is thought to have been diverted to. We hope to gather data on the diversion, as well as how the

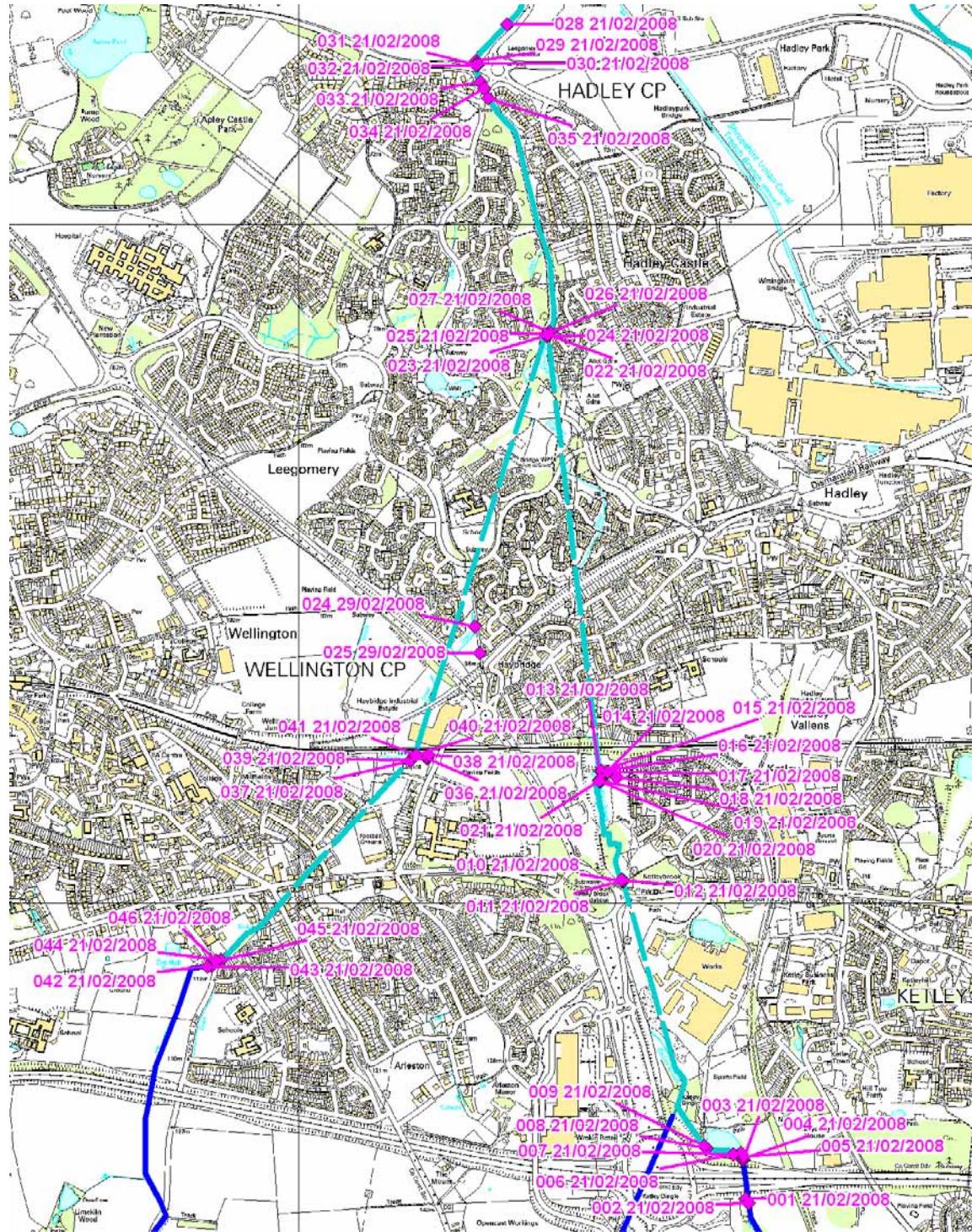
two watercourses interact, in order to appropriately model the situation on the ground. Our approach to modelling this watercourse will need to be signed off by the Environment Agency.

- 4.2 At the upstream extent of the reach the Crow Brook emerges from a culvert into a natural channel (pictures 47-48 Appendix A) (SJ 68590 11510). The brook flows in a north eastern direction before entering two 400mm diameter culverts under Sommerfeld Road (pictures 54-55 Appendix A) (SJ 68723 11759). When the brook emerges the water is a red-orange colour (pictures 49-51, 53), denoting possible water quality issues, possibly due to contamination emerging from the ground, inside the culvert, or interaction with the wetland area to the east (picture 52 Appendix A) (SJ 68746 11951). The brook flows north for a short distance before entering a culvert (SJ 68772 12096). It was not possible to inspect this culvert as it was on a site and permission to enter had not been obtained. The culvert emerges again at Trench Pool (pictures 56-57, 60-63 Appendix A) (SJ 68774 12341), a large raised reservoir. Water from Trench Pool overflows at the eastern end (pictures 58-59, 64 Appendix A) (SJ 68491 12486), and it is at this point where it is assumed that the channel diverts from the old path where the Flood Zones currently exist (Figure B.1 in appendix B).
- 4.3 When following the assumed 'old path' and looking for possible places where the Crow Brook may emerge from the culvert, it was observed that site 61900 Land adjacent Oakland House, Hortonwood, was already being developed (picture 65 Appendix A) (SJ 68872 13641). This site also incorporates a reach of watercourse which drains east to west. The interaction of this with either the old or new Crow Brook is not known, and needs to be understood from any existing data on the diversion, to inform how it should be appropriately modelled.
- 4.4 The 'old' reach of the Crow Brook reappears near Horton Lane (pictures 66-68, Appendix A) (SJ 68800 14393). The brook flows in a north westerly direction before entering a culvert near Moorhead (SJ 68218 14863), it then emerges downstream of Humber Lane (pictures 69-70) (SJ 68078 14859). It is assumed that this channel now just acts as drainage for surrounding fields, and does not drain the wider upstream catchment.
- 4.5 It needs to be understood if the old channel resumes as natural channel near Horton Lane, or if there is a culverted section upstream of this. Halcrow requires the Environment Agency's view on the current drainage situation of this watercourse to inform how this will be modelled. At present the Flood

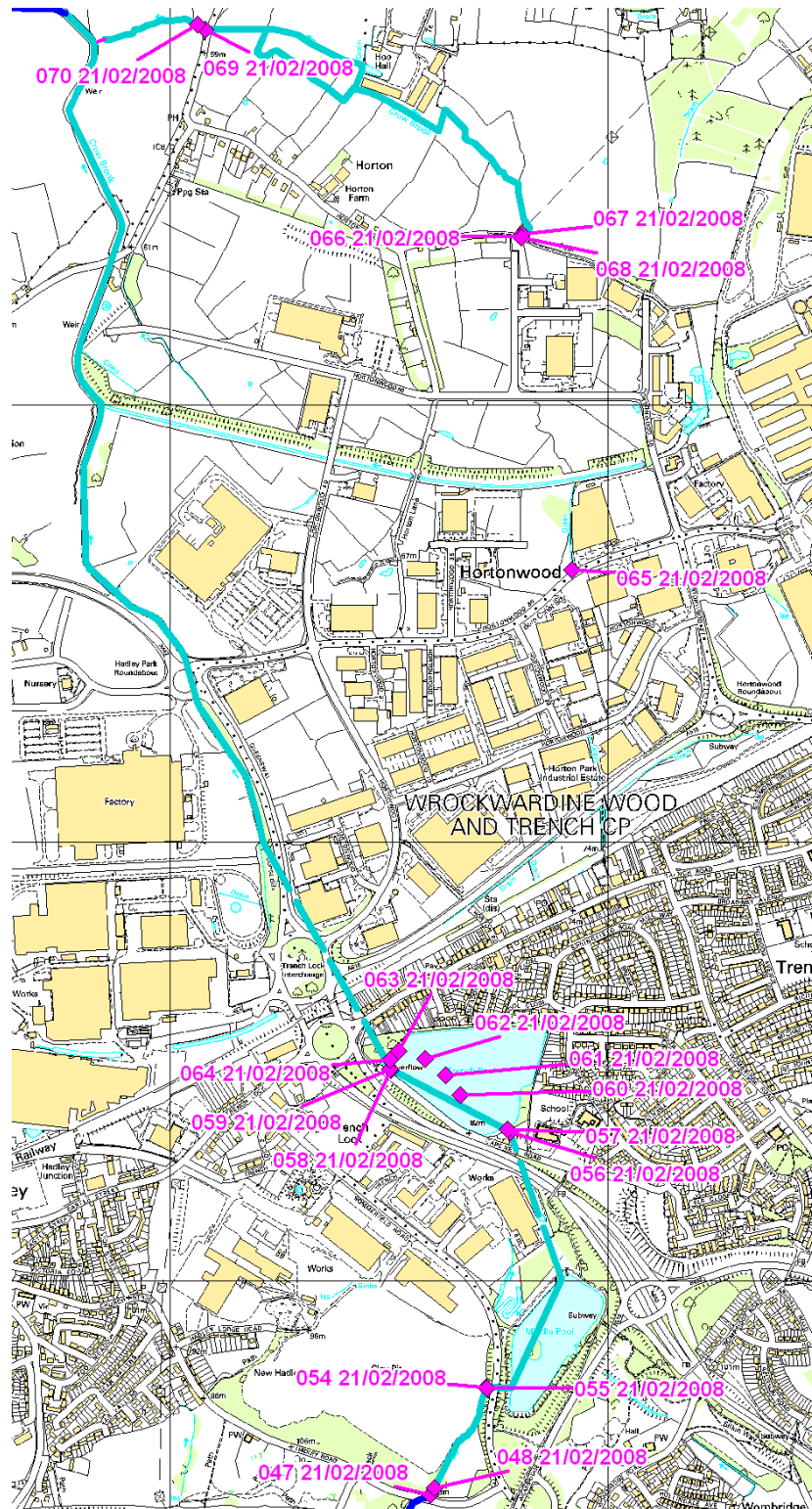
Zones for the old path are incorrect, while the new path of the channel does not have any Flood Zones. A model will be constructed to appropriately model the current drainage situation, which may result in the need to look at the Council's development sites again. From examining the OS maps of the area it does appear that the old channel has been severed from the new channel and does not connect to any other watercourses. Information on who created the channel diversion and drawings/information of the new channel will be required, as well as information on the interaction with the old channel. Ultimately agreement on how this watercourse is modelled will be required from the Environment Agency.

Appendix A

Hurley Brook Photo Location Plan (photo number and date of site visit)



Crow Brook Photo Location Plan (photo number and date of site visit)





001 Ketley Brook Culvert US Under M54



002 Ketley Brook US M54



003 Ketley Brook Culvert DS M54



004 Ketley Brook Culvert DS M54 Blind US



005 Ketley Brook Culvert DS M54 Blind DS



006 Pool On Ketley Brook



007 Pool On Ketley Brook



008 Overflow From Pool On Ketley Brook



009 DS Overflow From Pool On Ketley Brook



010 Ketley Brook DS Culvert DS A518
Holyhead Road



011 Ketley Brook DS A518 Holyhead Road



012 Ketley Brook DS A518 Holyhead Road



013 Ketley Brook Sink nr Wedgewood Crescent



014 Ketley Brook Sink nr Wedgewood Crescent



015 Ketley Brook Sink nr Wedgewood Crescent



016 Ketley Brook Sink nr Wedgewood Crescent



017 Ketley Brook Drain into Sink nr
Wedgewood Crescent



018 Ketley Brook Drain into Sink nr
Wedgewood Crescent



019 Ketley Brook Sink nr Wedgewood Crescent



020 Ketley Brook Sink nr Wedgewood Crescent



021 Ketley Brook Sink nr Wedgewood Crescent



022 Junction of Ketley Book and Hurley Brook



023 Junction of Ketley Book and Hurley Brook
Hurley Brook Culvert DS



024 Junction of Ketley Book and Hurley Brook
Ketley Brook Culvert DS



025 Junction of Ketley Book and Hurley Brook



026 Junction of Ketley Book and Hurley Brook



027 DS Junction of Ketley Book and Hurley Brook



028 Hurley Brook DS Extent



029 Hurley Brook DS A442 Queensway



030 Hurley Brook DS Culvert A442 Queensway



031 Hurley Brook DS Culvert A442 Queensway



032 Hurley Brook US Culvert A442 Queensway



033 Hurley Brook DS Leegate Avenue



034 Hurley Brook DS Culvert Leegate Avenue



035 Hurley Brook US Culvert Leegate Avenue



036 Hurley Brook nr Arleston Lane



037 Hurley Brook nr Arleston Lane



038 Hurley Brook nr Arleston Lane



039 Hurley Brook DS US Culvert nr Arleston Lane



040 Hurley Brook US DS Culvert nr Arleston Lane



041 Hurley Brook US DS Culvert nr Arleston Lane



042 Hurley Brook US Culvert Limekiln Lane



043 Hurley Brook US Limekiln Lane



044 Hurley Brook DS Limekiln Lane



045 Hurley Brook DS Culvert Limekiln Lane



046 Hurley Brook DS Culvert Limekiln Lane



047 Crow Brook DS Culvert Hadley Road



048 Crow Brook DS Hadley Road



049 Crow Brook DS Sommerfeld Road



050 Crow Brook DS Sommerfeld Road



051 Crow Brook DS Culvert Sommerfeld Road



052 Crow Brook DS Sommerfeld Road
Interaction with Area nr Middle Pool



053 Crow Brook DS Culvert Sommerfeld Road



054 Crow Brook US Culvert Sommerfeld Road



055 Crow Brook US Sommerfeld Road



056 Crow Brook DS Culvert Capewell Road
Trench Pool Inflow



057 Crow Brook DS Capewell Road Trench
Pool Inflow



058 Trench Pool DS Overflow



059 Trench Pool DS Overflow



060 Trench Pool



061 Trench Pool



062 Trench Pool



063 Trench Pool



064 Trench Pool DS Overflow



065 Hortonwood Development Site Mound of Earth Over Location of Drain



066 Crow Brook DS Culvert nr Horton Lane



067 Crow Brook nr Horton Lane



068 Crow Brook US Culvert nr Horton Lane



069 Crow Brook DS Culvert Humber Lane



070 Crow Brook DS Humber Lane

Appendix B

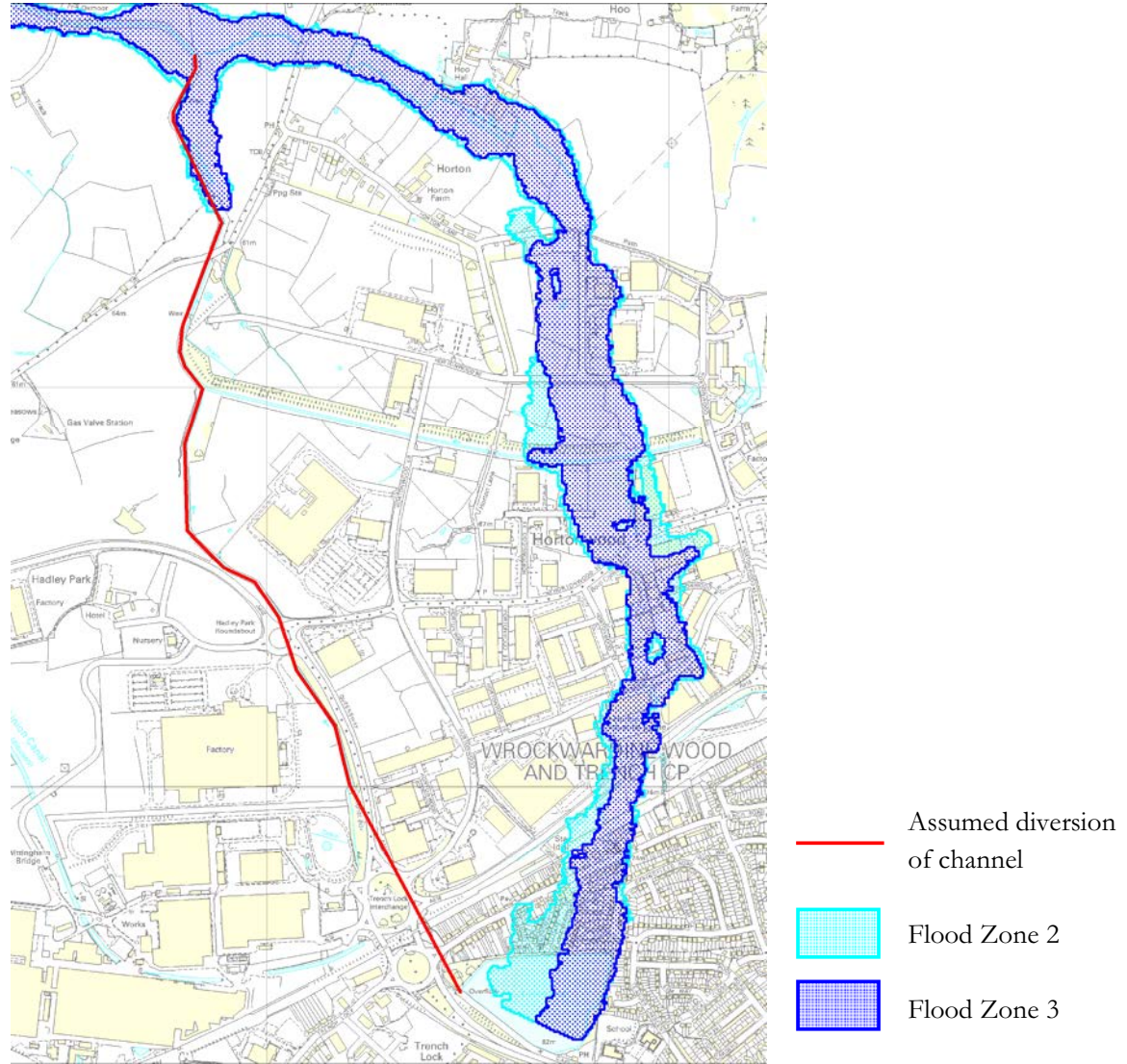


Figure B.1: Crow Brook flood zones and assumed channel diversion