Technical note

1. Setting Dike (_sett)

1.1 TuFLOW Version: 2008-08-AJ-iDP

1.2 A 4m x 4m grid cell sized model was created for Setting Dike. Drains and ditches were represented using z-lines (and read as GULLY lines in TuFLOW) to capture possible flow routes on the approach from the west. A 2m x 2m model was also created but wasn't run due to limited RAM on our computers.

1.3 All high resolution model files can be found in the modelling folder called "Modelling High Res" where all Setting Dike model files have the affix:

_sett Setting Dike

.tcf files: Q005_sett_4m.tcf

Q025_sett_4m.tcf

Q100_sett_4m.tcf

GIS files used for the Setting Dike high resolution modelling can be found by opening the .wor files associated with each .tcf run file:

.wor files Q005_sett_4m.wor

Q025_sett_4m.wor

Q100_sett_4m.wor

\Waltx-fs-01\Water\Projects\WBHSWP\CALCS\Modelling\Modelling High Res\TUFLOW\
2. **Setting Dike**

2.1 Most of the runoff towards Setting Dike is from the west with the main flow route being drains/ditches at Hagg's Farm, Haltemprice Farm and through to Willerby Carr Farm (south of Cottingham). The model shows ponding at Willerby Carr Farm with flood depths of up to 500mm. Some of the flood water ends up flowing into Setting Dike from the left bank. Upstream of the culvert entrance at Setting Dike, there is out of bank flow towards the school area (the culvert has not been modelled in this study and it would be worthwhile to ascertain its impacts here).

![Figure 2.1: Flow routes towards Setting Dike & Flood Depths at Willerby Carr Farm](image-url)
2.2 Approximate flow into Setting Dike from Willerby Carr Farm (left bank) is tabulated in Table 2.1 and Figure 2.2 below (estimated from a PO line along the left bank of Setting Dike).

![Figure 2.2: Flow into Setting Dike from Willerby Carr Farm on the left bank](image)

<table>
<thead>
<tr>
<th>Return Period</th>
<th>Flow into Setting Dike (left bank) (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5yr</td>
<td>14,811</td>
</tr>
<tr>
<td>25yr</td>
<td>17,474</td>
</tr>
<tr>
<td>100yr</td>
<td>19,494</td>
</tr>
</tbody>
</table>

Table 2.1: Flow (m³) into Setting Dike from Willerby Carr Farm on the left bank