**A68 Pathhead to Tynehead Junction Improvement Scheme**

**Risk of Serious Accidental Spillage**

RL = road length in km  
SS = serious accidental spillage rate (from DMRB Vol. 11, Part 10, Annex I, Table D.1)  
AADT = annual average daily traffic  
%HGV = percentage of heavy goods vehicles  
\( P_{acc} \) = probability of a serious accidental spillage in one year over a given road length  
\( P_{pol} \) = The risk reduction factor (from DMRB Vol. 11, Part 10, Annex I, Table D.2)

### EXISTING ROAD CONFIGURATION (2004 AADT FIGURES)

<table>
<thead>
<tr>
<th>Mainline &gt;100m from Junctions</th>
<th>A68</th>
<th>Side Road D6458</th>
<th>Side Road U60</th>
<th>Side Road U77</th>
<th>Side Road U78</th>
<th>Side Road Lay-by</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL</td>
<td>1.440</td>
<td>RL 1.000</td>
<td>RL 0.100</td>
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<tr>
<td>SS</td>
<td>0.29</td>
<td>SS 0.93</td>
<td>SS 0.93</td>
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<td>SS 0.93</td>
</tr>
<tr>
<td>AADT</td>
<td>9075</td>
<td>AADT 9075</td>
<td>AADT 519</td>
<td>AADT 21</td>
<td>AADT 90</td>
<td>AADT 56</td>
</tr>
<tr>
<td>%HGV</td>
<td>8</td>
<td>%HGV 8</td>
<td>%HGV 8</td>
<td>%HGV 8</td>
<td>%HGV 8</td>
<td>%HGV 20</td>
</tr>
</tbody>
</table>

\[
P_{acc} = RL \times SS \times (AADT \times 365 \times 10^{-6}) \times (\% \text{ HGV} \div 100)
\]

\[
P_{pol} = 0.6
\]

\[
P_{pol/\text{year}} = \sum P_{acc} \times P_{pol}
\]

\[
P_{pol/\text{year}} = 0.000216 \quad \Rightarrow \quad \text{Return Period 1 in 4639 years for Mainline}
\]

The DMRB indicates that the acceptable risk of a pollution incident should normally be 1 in 100 years for discharges to aquifers and to reaches of sensitive watercourses.

06 February 2007