Highways Code of Practice – Appendix 2

RISK ASSESSMENTS FOR HIGHWAY INSPECTION

Risks applicable to highway inspections appertain to both the items to be inspected and the risks inherent to the inspectors in undertaking the inspections.

In regard to the items to be inspected, any item with a defect level which corresponds to, or is in excess of, the stated defect investigatory level is to be assessed for likely risk.

The procedure for risk assessment is as follows:

- **Risk Identification** – an inspection item for which the defect investigatory level is reached or exceeded is to be identified as a risk.

- **Risk Evaluation** – all risks identified through this process have to be evaluated in terms of their significance, which means assessing the likely impact should the risk occur and the probability of it actually happening.

- **Risk Impact** – the impact of a risk occurring shall be quantified on a scale of 1 to 5, assessed as follows :

  1 - little or negligible impact
  2 - minor or low impact
  3 - noticeable impact
  4 - major, high or serious impact
  5 – extremely high or dangerous impact.

  The impact is quantified by assessing the extent of damage likely to be caused should the risk become an incident. As the impact is likely to increase with increasing speed, the amount of traffic and type of road are clearly important considerations in the assessment.

- **Risk Probability** – the probability of a risk occurring should also be quantified on a scale of 1 to 5 assessed as follows:

  1 - very low probability (up to 20%)
  2 - low probability (21% - 40%)
  3 - medium probability (41% - 60%)
  4 - high probability (61% - 80%)
  5 - very high probability (over 80%)

  The probability is quantified by assessing the likelihood of users, passing by or over the defect, encountering the risk. As the risk is likely to increase with increasing vehicular or pedestrian flow,

the network hierarchy and defect location are, consequently, important considerations in the assessment.

- **Risk Factor** - the risk factor for a particular risk is the product of the risk impact and risk probability and is therefore in the range of 1 to 25. It is this factor that identifies the overall seriousness of the risk and consequently therefore the appropriateness of the speed of response to remedy the defect. Accordingly, the priority response time for dealing with a defect can be determined by correlation with the risk factor as shown in the risk management table.

- **Risk Management** - having identified a particular risk, assessed its likely impact and probability and calculated the risk factor, the risk management procedure for determining the timescale in rectifying the defect can be shown in the form of a risk matrix as follows :

Probability **Impact**	**Very Low (1)**	**Low (2)**	**Medium (3)**	**High (4)**	**Very High (5)**
Negligible (1)	1	2	3	4	5
Low (2)	2	4	6	8	10
Noticeable (3)	3	6	9	12	15
High (4)	4	8	12	16	20
Extreme (5)	5	10	15	20	25

The shading in the matrix identifies the priority response. Accordingly, the risk factor, priority response and defect category can be tabulated in a simple format as follows :

Risk Factor	**Priority Response**
25	**1 (2 Hour)**
15 - 20	**2 (2 Hour)**
9 - 12	**3 (10 Day)**
5 - 8	**4 (35 Day)**
1 - 4	**5 (35 Day)**