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TR010056

6.4 Environmental Statement Appendix 13.6 Spillage Risk Assessment

Planning Act 2008

APFP Regulation 5(2)(a)
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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6.4 Environmental Statement
Appendix 13.6 Spillage Risk Assessment

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C01	May 2021	Application Submission

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1 Introduction

1.1 Purpose of this document

1.1.1 This document is to report on the risk (likelihood and consequence) to the water environment from accidents and spillages on the highway, and to determine the acceptability of this.

2 Appendix D assessment of accidental spillage

2.1 Method

2.1.1 Assessment of accidental spillages of polluting substances from roads has been carried out using Appendix D as prescribed in the Design Manual for Roads and Bridges (DMRB) LA 113 Road drainage and the water environment (LA 113) to ensure provision of appropriate drainage design measures where the risk of a serious pollution incident is more frequent than the 1% annual exceedance probability (AEP) (or more frequent than 1 in 100-year return period).

2.1.2 Assessments have been undertaken for each road drainage area (sub-catchment scale).

2.1.3 The results of the assessment are reported as ‘pass’ or ‘fail’. The risk of an acute pollution incident due to accidental spillage or vehicle fire is considered proportionate to the risk of a heavy goods vehicle (HGV) road traffic collision. Thus, the percentage of HGV’s on a given road is the main parameter used in assessment of the risk of serious pollution accidents.

2.1.4 Other parameters considered include the type and length of road, two-way annual average daily traffic (AADT) flow and emergency services response time depending on whether a site is in an urban, rural or remote setting. If the accidental spillage is less than or equal to 1% AEP (or 0.5% AEP for sensitive watercourses), the risk is considered acceptable.

2.1.5 Vehicle numbers from the design year 2039 AADT flows have been used to account for future growth.

2.2 Results

2.2.1 Detailed results of the spillage risk assessment the summary values are presented in Table 2-1 and Table 2-2, respectively. The accidental spillage risk assessment results show that, without consideration of the drainage scheme, there would be no discharge with a serious spillage risk more frequent than the 1% and 0.5% AEP (1 in 100-year and 1 in 200-year return period) thresholds.

2.2.2 The level of risk to the water environment is therefore acceptable in accordance with LA 113.

Table 2-1 Spillage risk assessment results

Catchment ID	Road reference	Road Length (m)	Junction type	2-way AADT	%HGV	Spillage factor (ppsl (%))	Probability factor of accidental spillage (Pspl (%))	Probability of pollution incident (Pinc (%))	Risk?
2	A417	1700	No junction	57206	7.94%	0.29	0.00082	0.00037	No
3c	A417	400	No junction	57206	7.94%	0.29	0.00019	0.00009	No
3a	A417	950	No junction	57206	7.94%	0.29	0.00046	0.00021	No
5a, 5b, 5c	A436 (north) & New AB Roundabout	880	Roundabout	12162	4.93%	3.09	0.00060	0.00027	No
6,8	A417	450	Slip road	57206	7.94	0.83	0.00062	0.00028	No
7b	A436 Junction	960	Roundabout	12162	4.93%	3.09	0.00065	0.00029	No
9	A417	500	No junction	52626	6.87%	0.29	0.00019	0.00009	No
10	A417	610	No junction	52626	6.87%	0.29	0.00023	0.00011 – protected area	No
11a, 11b, 11c	A417	1150	Roundabout (precautionary as on side road)	52626	6.96%	3.09	0.00756	0.00340	No

Table 2-2 Spillage risk assessment summary values

Acceptable risk (normally 1%, or 1-in-100 year)	Do individual outfall risks need to be identified?	Highest individual risk	Can the highest individual risk be reduced?
1.00%	No	0.00340	No