# Norwich Western Link

# Environmental Statement

# Chapter 12: Road Drainage and the Water Environment

# Appendix 12.1: Drainage Network Water Quality Assessment

# Sub Appendix D: Spillage Risk Assessment Data

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Document Reference: 3.12.01d

Version Number: 00

Date: March 2024

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## Tables

# 1 HEWRAT assessment of risk from accidental spillage to surface waters and groundwater receptors

1.1.1 **Table 1.1** to **Table 1.3** below provide a full summary of the input parameters and results for each individual outfall and basin assessed.

**Table 1.1 – Baseline Parameters**

| Outfall / Basin Reference | Easting | Northing | Waterbody Type | Road Type | Urban or Rural | Location (response time for emergency services) |
|---|---|---|---|---|---|---|
| Basin 1 | 614655 | 315477 | Groundwater | A | Rural | > 1 hour |
| Basin 2 | 613575 | 315054 | Groundwater | A | Rural | > 1 hour |
| Basin A1067 | 614049 | 315775 | Groundwater | A | Rural | > 1 hour |
| Basin 3 | 612448 | 315185 | Groundwater | A | Rural | > 1 hour |
| Basin 4 | 612732 | 315018 | Groundwater | A | Rural | > 1 hour |
| Basin 5 | 610391 | 312599 | Foxburrow Stream (a tributary of the River Tud) | A | Rural | > 1 hour |
| Basin 6 | 609786 | 312599 | River Tud | A | Rural | > 1 hour |

**Table 1.2 – Junction Parameters**

| Outfall / Basin Reference | Junction Type | AADT DS 2041 | % Heavy Goods Vehicles | Length of highway drained (m) | Spillage Factor (no/$10^{32}$HGVkm/year)) |
|---|---|---|---|---|---|
| Basin 1 | No Junction | 47,120 (Proposed Scheme) | 5 (Proposed Scheme) | 290 | 0.29 |
| Basin 1 | Roundabout | 47,120 (Proposed Scheme) | 5 (Proposed Scheme) | 120 | 3.09 |
| Basin 1 | Side Road | 47,120 (Proposed Scheme) | 5 (Proposed Scheme) | 20 | 0.93 |
| Basin 1 | No Junction | 16,486 (NDR Scheme) | 4.6 (NDR Scheme) | 1100 | 0.29 |
| Basin 1 | Roundabout | 16,486 (NDR Scheme) | 4.6 (NDR Scheme) | 350 | 3.09 |
| Basin 1 | Roundabout | 20,752 (NDR Scheme) | 3.6 (NDR Scheme) | 50 | 3.09 |
| Basin 2 | No Junction | 47,120 | 5 | 1550 | 0.29 |

| Outfall / Basin Reference | Junction Type | AADT DS 2041 | % Heavy Goods Vehicles | Length of highway drained (m) | Spillage Factor (no/$10^{32}$HGVkm/year)) |
|---|---|---|---|---|---|
| Basin A1067 | No Junction | 47,120 | 5 | 270 | 0.29 |
| Basin A1067 | Roundabout | 47,120 | 5 | 30 | 3.09 |
| Basin A1067 | Side Road | 47,120 | 5 | 20 | 0.93 |
| Basin 3 | No Junction | 47,120 | 5 | 680 | 0.29 |
| Basin 4 | No Junction | 47,120 | 5 | 1930 | 0.29 |
| Basin 5 | No Junction | 47,120 | 5 | 1600 | 0.29 |
| Basin 5 | Side Road | 47,120 | 5 | 50 | 0.93 |
| Basin 6 | No Junction | 47,120 (Proposed Scheme) | 5 (Proposed Scheme) | 400 | 0.29 |

| Outfall / Basin Reference | Junction Type | AADT DS 2041 | % Heavy Goods Vehicles | Length of highway drained (m) | Spillage Factor (no/$10^{32}$HGVkm/year)) |
|---|---|---|---|---|---|
| Basin 6 | Side Road | 47,120 (Proposed Scheme) | 5 (Proposed Scheme) | 20 | 0.93 |
| Basin 6 | Roundabout | 17,155 (A47 Scheme) | 2 (A47 Scheme) | 600 | 3.09 |

**Table 1.3 – Results**

| Outfall / Basin Reference | Existing Measures Risk Reducing Factor | Proposed Measures Risk Reducing Factor | Annual probability of serious pollution incident (without mitigation) | Is risk greater than 1%? | Annual probability of serious pollution incident (with mitigation) | Is risk greater than 0.5%? |
|---|---|---|---|---|---|---|
| Basin 1 | 1 (Proposed Scheme)<br>1 (NDR Scheme) | 0.6 (Proposed Scheme)<br>0.6 (NDR Scheme) | 0.06% | No | 0.04% | No |
| Basin 2 | 1 | 0.6 | 0.03% | No | 0.02% | No |
| Basin A1067 | 1 | 0.6 | 0.01% | No | 0.01% | No |
| Basin 3 | 1 | 0.6 | 0.01% | No | 0.01% | No |
| Basin 4 | 1 | 0.6 | 0.03% | No | 0.02% | No |
| Basin 5 | 1 | 0.6 | 0.03% | No | 0.02% | No |

| Outfall / Basin Reference | Existing Measures Risk Reducing Factor | Proposed Measures Risk Reducing Factor | Annual probability of serious pollution incident (without mitigation) | Is risk greater than 1%? | Annual probability of serious pollution incident (with mitigation) | Is risk greater than 0.5%? |
|---|---|---|---|---|---|---|
| Basin 6 | 1 (Proposed Scheme)<br>1 (A47 Scheme) | 0.6 (Proposed Scheme)<br>1 (A47 Scheme) | 0.01% | No | 0.01% | No |