Norwich Western Link

Environmental Statement

Chapter 12: Road Drainage and the Water Environment

Appendix 12.1: Drainage Network Water Quality Assessment

Sub Appendix A: Routine Runoff on Surface Water Quality Data

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Tables

1 HEWRAT assessment of pollution impacts from routine runoff to surface waters

1.1.1 **Table 1.1** to **Table 1.4** below provide a full summary of the input parameters and results for each individual outfall assessed.

Table 1.1 – Step one runoff quality parameters

Outfall Reference	Easting	Northing	Receiving Watercourse	AADT DS 2041	Climatic Region	Rainfall Site
Basin 5	610391	312599	Foxburrow Stream (a tributary of the River Tud)	47,120 (>10,000 – 50,000)	Warm Dry	Ipswich
Basin 6	609786	312599	River Tud	47,120 (Proposed Scheme) 17,155 (A47 DCO Scheme) (50 – 100,000)	Warm Dry	Huntington

Table 1.2 – Step two river impacts parameters

Outfall Reference	Base Flow Index (BFI)	Hardness (mg CaCO3/l)	Q95 Flow (m3/s)	Impermeable Area Drained to the Outfall (ha)	Permeable Area Drained to the Outfall (ha)	River Width (m)	Downstream Structure within 100m of Outfall?	Discharge in or within 1km U/S of a Designated Site?
Basin 5	0.9	High >200	0.0051	6.773	6.718	1.5	No	No
Basin 6	0.55	High >200	0.073	6.656 (1.991 Proposed Scheme) (4.665 A47 DCO Scheme)	7.005 (1.53 Proposed Scheme) (5.475 A47 DCO Scheme)	5	No	No

Table 1.3 – Step three mitigation parameters

Outfall Reference	Existing Measures	Treatment for Solubles (%)	Discharge Rate (l/s)	Settlement of Sediments (%)
Basin 5	N/A	70 Swale (50%) + Basin (20% - 50% reduction from 40%)	19	100 Swale (50%) + Basin (25% - 50% reduction from 50%)
Basin 6	N/A	35 Swale (80%) + Basin (20% - 50% reduction from 40%) No treatment in A47 DCO surface water drainage system so reduced to 35% to account for this.	18	50 Swale (80%) + Basin (25% - 50% reduction from 50%) No treatment in A47 DCO surface water drainage system so reduced to 50% to account for this.

Table 1.4 – Results

Outfall Reference	Step	Soluble Pollutants: Acute Impact Assessment of Copper	EQS Assessment: Annual Average Concentration of Copper (µg/l) due to Road Runoff	Soluble Pollutants: Acute Impact Assessment of Zinc	EQS Assessment: Annual Average Concentration of Zinc (µg/l) due to Road Runoff	Sediments: Chronic Impact Assessment of Sediment	Cumulative Assessment Required?
Basin 5	Tier 1 Step 2	Pass	0.52 (Pass)	Pass	1.18 (Pass)	Fail 81% settlement needed	No
Basin 5	Tier 1 Step 3	Pass	0.16 (Pass)	Pass	0.36 (Pass)	Pass	No
Basin 6	Tier 1 Step 2	Pass	0.08 (Pass)	Pass	0.23 (Pass)	Pass	No
Basin 6	Tier 1 Step 3	Pass	0.05 (Pass)	Pass	0.15 (Pass)	Pass	No