

Great Yarmouth Surface Water Management Plan - Options Appraisal Summary

PROBLEM IDENTIFIED:

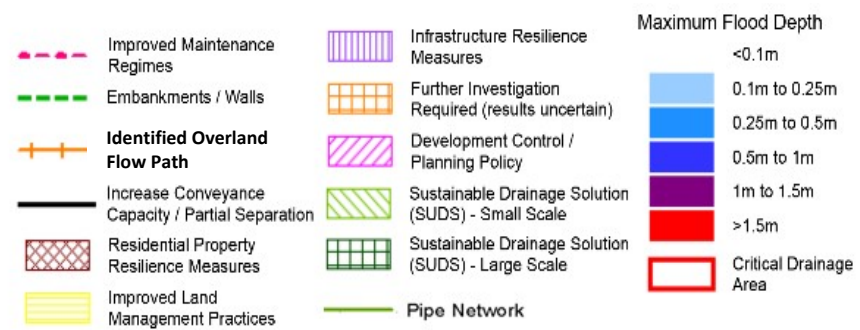
This CDA is located in the Northgate area of Great Yarmouth. Surface water flows generally from high ground in the centre of the CDA to lower ground adjacent to the river and coastline. Northgate CDA and the region are in general classified as being at low risk of groundwater flooding. Flood zone 3 extends from the north west portion of the CDA and occupies 25% of the total CDA area. Surface water options to mitigate flood risk are represented below, the area is constrained by urban expansion and infrastructure.

Critical Drainage Area

Northgate



LEGEND



Great Yarmouth Borough



PREFERRED OPTIONS SUMMARY:

Options Summary	Available Option	Preferred
Do Nothing		
Do Minimum		
Improved Maintenance		
Planning Policy		
SUDS (Source Control - Small Scale)		
SUDS (Large Scale - Flood Storage)		
Separate Surface Water and Foul Water Sewer Systems		
De-culvert / Increase Conveyance		
Identified Overland Flow Routes		
Community Resilience		
Infrastructure Resilience		
Other - Improvement to Drainage Infrastructure		
Other or Combination of Above		

Flood Risk Source

Surface Water	Yes
Groundwater	No
Ordinary Watercourse	No
Fluvial	Yes
Tidal	Yes

Validation

Historic Events	Yes
Site Inspection	Yes

**GREAT YARMOUTH SURFACE WATER MANAGEMENT PLAN
SURFACE WATER OPTIONS**

HIGH LEVEL CONSTRUCTION COST ESTIMATE

Critical Drainage Area ID: Northgate

Description	Unit Type	Unit Measure	Unit Rate	Quantity (approx)	Cost (rounded)	Assumptions
SUDS - Small Scale	Water butts & rainwater harvesting	m ³ of stored volume	£1,188	105	£125,000	
SUDS - Small Scale	Road side Rain Garden	m ² area	£21	3500	£72,000	3.5km of road - 1m wide rain gardens on one side
SUDS - Large Scale	Ponds and wetlands	m ³ Detention Volume	£40	10000	£403,000	St Georges Park / Town Wall Park
Partial separation and diversion of pipes			£1,100	180	£198,000	180m of 900mm pipe at £1100 / m (including headwalls, outlet, manholes and an allowance for working in a Priority 1 Road)
Improved maintenance						No capital cost - assumed to be paid for by revenue budgets
Property level resilience	Improved resilience and resistance measures	per property protected	£5,000	12	£60,000	
Infrastructure resilience	Temporary or demountable flood defences - collective measure	per property protected	£27,806	1	£28,000	Protection of North Quay underpass
				TOTAL	£886,000	

NOTES:

The following standard assumptions have also been applied:

The costs are the capital costs for implementation of the scheme only.

Costs do not include provisions for consultancy, design, supervision, planning process, permits, environmental assessment or optimum bias.

No provision is made for weather (e.g. winter working).

No provision is made for access constraints.

Land acquisition costs are not included

No operational or maintenance costs are included.

No provision is made for disposal of materials (e.g. for flood storage or soakaway clearance).

These should be considered as approximate order of magnitude costs only.