

# National Road Network of Ireland Flood Risk Assessment

## Contract Brief

Roads are essential to economic performance and for connecting communities. Flooding of the road network can cause considerable disruption and possible death.

The National Roads Authority (NRA) has commissioned JBA Consulting to carry out an assessment and management study of flood risk at a structural level on the national road network.



## Overview

This project will provide a risk based tool and evidence base to ensure that the risk posed by fluvial, pluvial and coastal flooding of the national road network is better understood and more effectively managed.

The key outputs of this project will be:

- Delivery of flood outlines based on fluvial, coastal and surface water flood modelling
- Updated model run and flood map of extreme surface water flooding in the vicinity of the road network using detailed LIDAR DTM source
- A strategic flood risk metric analysis to identify the areas potentially at greatest risk from flooding at the national level
- A detailed assessment of flood risk for 30 sites where elevated risk has been identified
- The development of a Decision Support Protocol to manage and mitigate risks

## Methodology

The project is following the RIMAROCC framework for flood risk identification and management (ERA-NET, 2010). The generic framework can be used to mitigate threats, reduce vulnerabilities and minimise the consequence of flooding.

## Strategic Tool; Flood Risk Metrics

To visualise impacts JBA has investigated and developed new methods of querying flood depth and velocity grids to present hazard (see right).

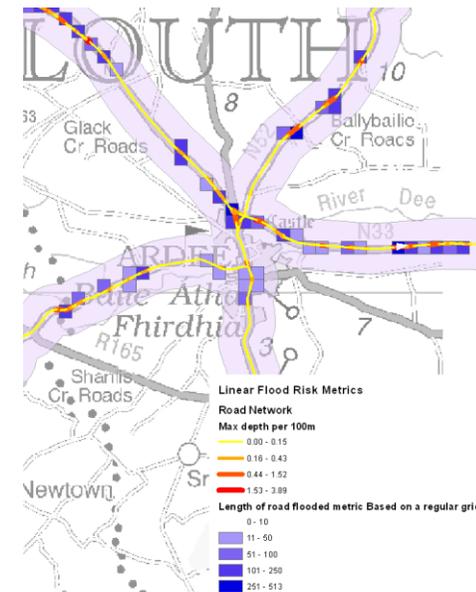
## Risk Management & Mitigation

A more detailed flood risk assessment will be undertaken for 30 locations at significant risk.

The detailed assessment will take into consideration:

- Depth distributions
- Velocity and/or hazard rating distribution
- Estimates of road disruption based on traffic volumes and potential delays
- These will be assessed considering the flood risk to the highway, road users and assets such as bridges

A protocol for realistic mitigation strategies will be collated based on a combination of the detailed flood risk assessment at the 30 sites and through building up an understanding of the road network, traffic volumes and vulnerability.



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