



Retrofitting of new TII standards on the National Road Network

Motorway Maintenance and Renewals Contracts (MMaRC)

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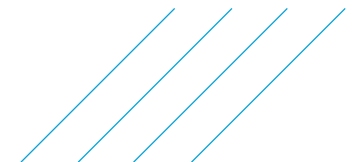
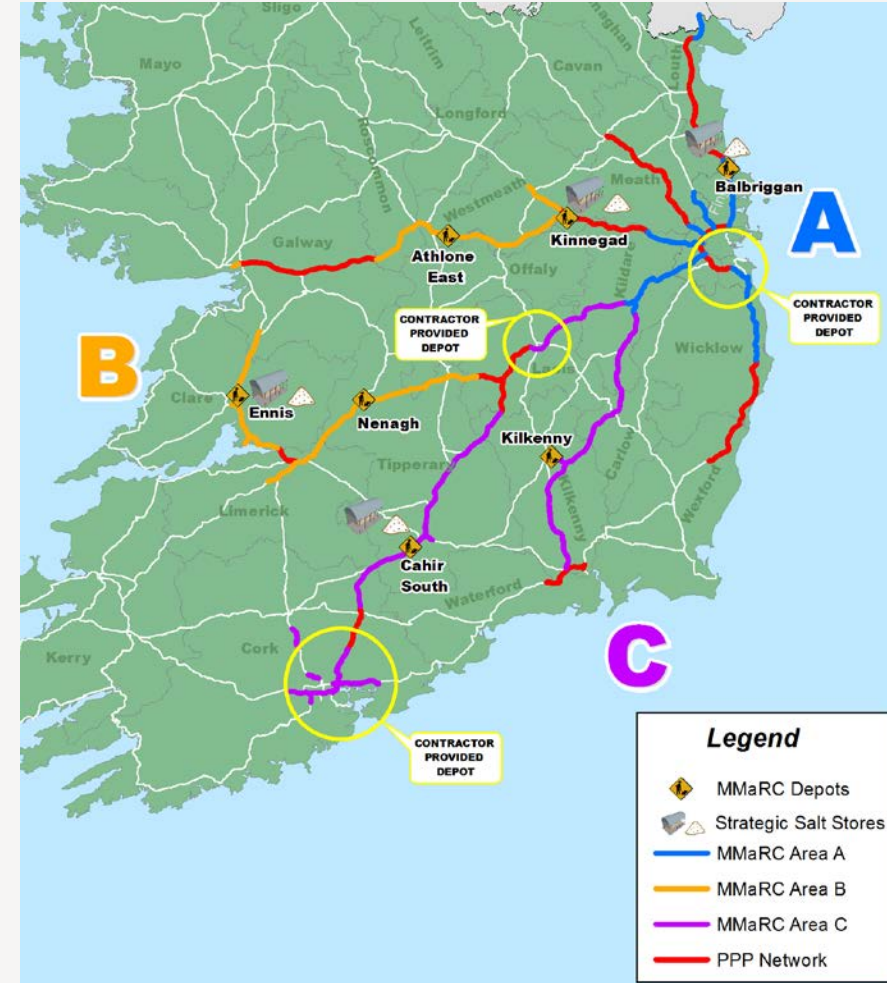
27th September 2018



MMaRC Contract Overview

MMaRC		Network Operator	Length
A	Heavy traffic urban	Globalvia Sacyr Jons [GSJ]	160 km
B	Lighter traffic rural	Colas Roadbridge JV [CRJV]	256 km
C	Mixed urban/rural	Egis Lagan Services [ELS]	328 km
		Total	744 km

› MMaRC Contracts commenced 2013



New TII Standards

- › TII do not generally retrospectively apply updated standards;
- › MMarC Contract reporting mechanisms ensure data is collected from all incidents;
- › 2017 – 4,975 incidents recorded by the three network contractors, including approximately 1,250 collisions;
- › Analysis of the data can contribute to decision making on undertaking retrofitting to new standards;
- › Upgrades and improvement works are undertaken subject to risk analysis and prioritisation;
- › Improvement works undertaken in MMarC include:
 - › Drainage & Rolling Crowns;
 - › Bridge Parapets;
 - › Public Lighting;
 - › Timber post and rail fencing.



Drainage & Rolling Crowns

- › Analysis to over 120 sites was carried out in accordance with NRA IAN 09/13;
- › If a water film depth issue was present = rectify;
- › Improvement works included drainage works & rolling crowns;
- › TII designed and installed 21 rolling crowns across the MMaRC network;
- › The guidance included in NRA IAN 09/13 has been incorporated directly into DN-GEO-03031.



Drainage & Rolling Crowns

Rolling crown under
construction on M18



Bridge Parapets

- › There have been bridge parapet strikes in Ireland where N2 aluminium parapets have not performed as anticipated resulting in additional risk to road users;
- › TII undertook risk assessments of bridges with N2 aluminium parapets along the motorway network to rank and prioritise parapets for upgrade where the risk of being impacted is high and where the consequences of a strike are severe;
- › The MMarC Contractors have an ongoing works programme based on these risk assessments;
- › The upgraded parapets have a H2 containment level which will contain a higher percentage of road vehicles (13t vehicle v 1.5t vehicle);
- › There are a total 20 bridges where parapets upgrades are completed or are ongoing, totalling over 4,500m of new H2 parapet.



Bridge Parapets

M9 Nore River Bridge



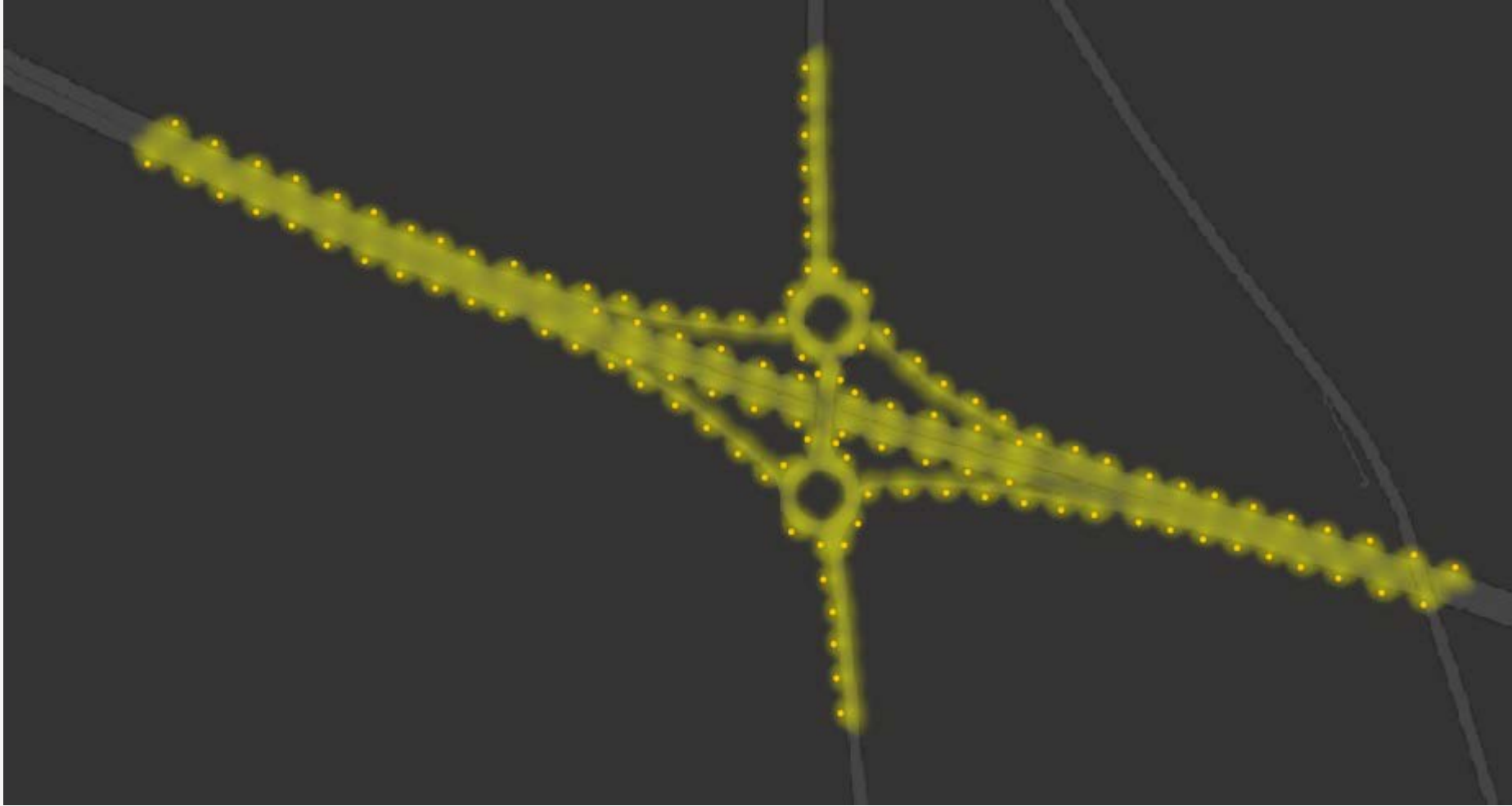
Public Lighting

- › DN-LHT-03038 introduced in August 2018;
- › Lighting now required for 60m in advance of conflict areas, and the mainline is not lit;
- › Majority of interchanges built since 2007 have smaller footprint lighting;
- › TII trial in Summer 2017 on 4 standard interchanges;
- › MMaRC contractor incident data at 76 similar interchanges over 2.5 years - 12 night-time collisions, 6 of which were located in areas which fall outside the lighting footprint required by the new standards;
- › Typical dumbbell interchange - 130 columns, costing €22k to €25k per annum in energy costs. Removing up to 100 surplus lights can save between €17K to €19K per annum;
- › Removal of surplus lighting is ongoing – 27 interchanges by end September 2018;
- › Total of 1,547 lights switched off;
- › The total saving on energy costs is 49% at these 27 interchanges;
- › Reduced lighting footprints will considerably help TII and Local Authorities in achieving their required 33% reduction in energy consumption by the year 2020.



Public Lighting

Typical Pre-2007
Motorway Junction
Large Lighting
Footprint



Public Lighting

Motorway Junction
With Surplus Lights
Removed



Timber Post and Rail Fencing

- › DN-REQ-03034 superseded NRA TD 19 in November 2015;
- › All fencing within the Clear Zone defined as a hazard, except fencing to SCD 300/20 and SCD 300/21;
- › Timber post and tension mesh;
- › Upgrade programme ongoing across the MMaRC network;
- › 27,000m of timber post and tension mesh fencing now installed in MMaRC areas;
- › Expected completion early 2019;
- › Works also ongoing across the PPP Project Road network.



Timber Post and Rail Fencing

New Timber
Post and
Tension Mesh
Fencing



Thank you

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