# NRA Motorway Maintenance and Renewals Contracts (MMaRC): Experience to date

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**15th October 2014**

Plan Design Enable

# Content of Presentation

- Introduction and Background
- Mobilisation
- Contract Requirements
  - Routine Maintenance
  - Incident Response
  - Winter Service
  - Renewals
- Quality and Performance
- Other  Elements
- Summary

# History / Development

- NRA decision to centrally contract maintenance of the network
- Strategic decisions:
  - 3 networks
  - 7 NRA provided depots
  - Winter Service – full risk transfer within contracts.

- MMaRC contracts
  - Awarded in Q2/Q3 2013
  - 5 year term - option to extend by +1 +1
  - Lump Sum Duties & instructed works

- MCAAS contract
  - Awarded in Q3 2013 to Atkins
  - 4 year term – option to extend
  - Administration, design, audit and inspection services on MMaRC & PPP Schemes

# Introduction and Background

- First generation maintenance contracts;
- Deliver service interfacing with 22 Local Authority Areas;
- Balance between scale and market value;
- 3 Network Areas – A, B and C;
- Geographical split;
- In place until 2018/2020.

| Motorway / Dual carriageway network | Length |
|---|---|
| **Total Length of Dual & motorway network** | **1,224 km** |
| - PPP | 328 km |
| - MMaRC | 744 km |
| - Local Authority | 152 km |

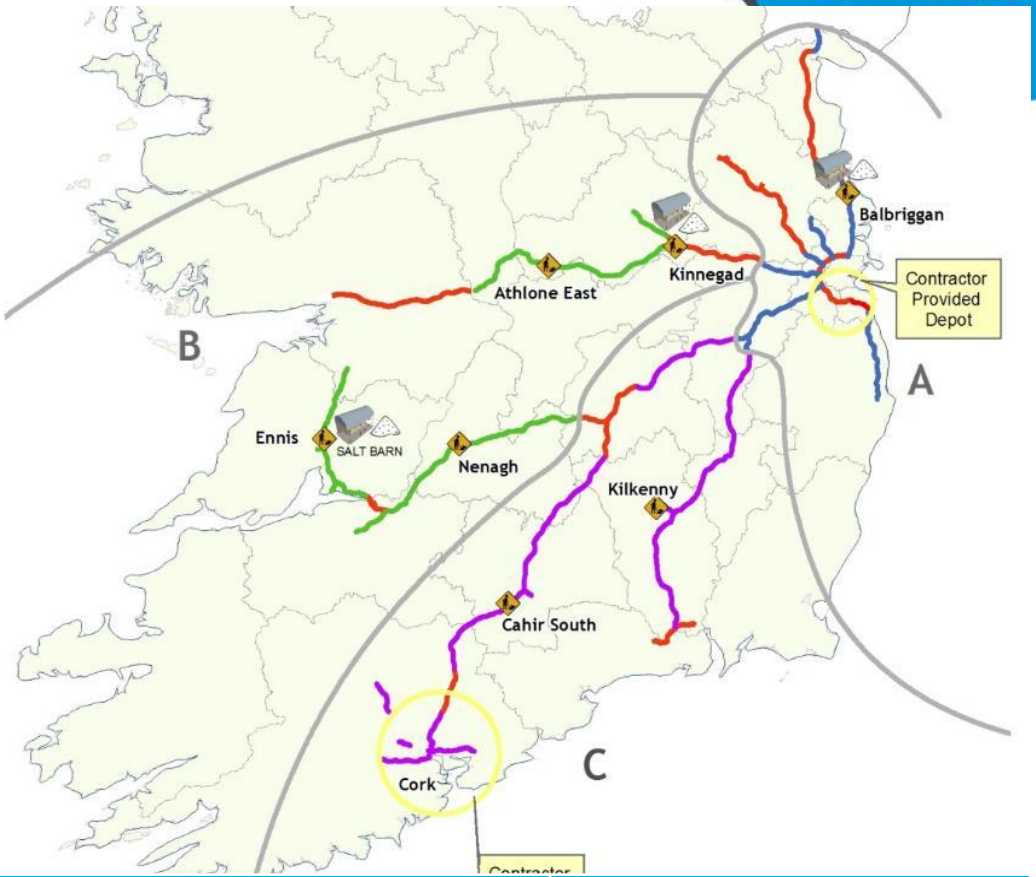
# Overview

MMaRC Boundary

Generally fenceline to fenceline;

Mainline, slip roads, roundabouts, overbridges;

Approx 30 - 70m from yield line on side road




| MMaRC | Network Operator | Length |
|---|---|---|
| A | Globalvia Sacyr Jons [**GSJ**] | 160 km |
| B | Colas Roadbridge JV [**CRJV**] | 256 km |
| C | Egis Lagan Services **[ELS]** | 328 km |
| | **Total** | **744 km** |

# Details of Contracts / Contractors

| | Network A | Network B | Network C |
|---|---|---|---|
| **Contractor** | GSJ Maintenance Ltd | Colas Roadbridge | Egis Lagan Services |
| **Initial Start** | May / June 2013 | May / June 2013 | June 2013 |
| **Interfaces** | 4 PPP's and 8 Local Authorities | 4 PPP's and 9 Local Authorities | 3 PPP's and 9 Local Authorities |
| **Staff** | 40 | 33 | 66 |

# Lump Sum Contracts


Lump Sum Activities: €18.16m per annum

# Depots

- Seven NRA Depots – Balbriggan (A), Athlone (B), Ennis (B) , Kinnegad (B), Nenagh (B), Cahir (C), and Kilkenny (C).

# Depot Facilities

- Brine Tank: 20,000 litre capacity
- Salt Barns: Demand based - typically approx 2,400 - 4,000 tonnes
- Workshop: Maintenance pit; compressed air facilities; storage areas.
- Resilience Salt barns:
  - Ennis – 15,000 tonnes
  - Kinnegad – 12,000 tonnes
  - Balbriggan – 20,000 tonnes
- Resilience Salt barns – provided approx 7,350 tonnes to various Local Authorities over the past 12 months.

# Mobilisation

- Large element of that related to mobilisation for Winter Service Requirements, but other elements too:
  - Plant
  - Systems – front and back end
  - Incident Response Facilities – IRU's
  - Fit out depots
  - People
  - Baseline survey and development of Routine Maintenance Management System (RMMS)
  - Maintenance Programme

# Contract Requirements

## MMaRC Contract Documents

### Volume A – Service Requirements

### Main Parts:

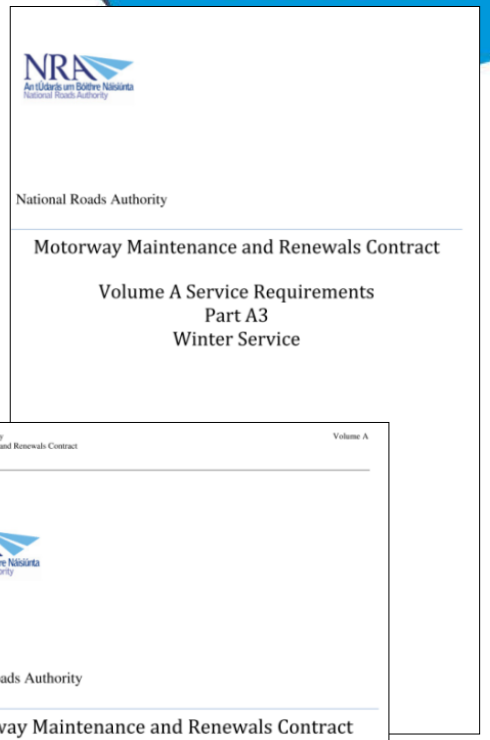
- Part A2 – Inspection and Maintenance Requirements
- Part A3 – Winter Service
- Part A4 – Incident Response Service

### Volume A – Annexes

### Volume B – Form of Tender and Schedule

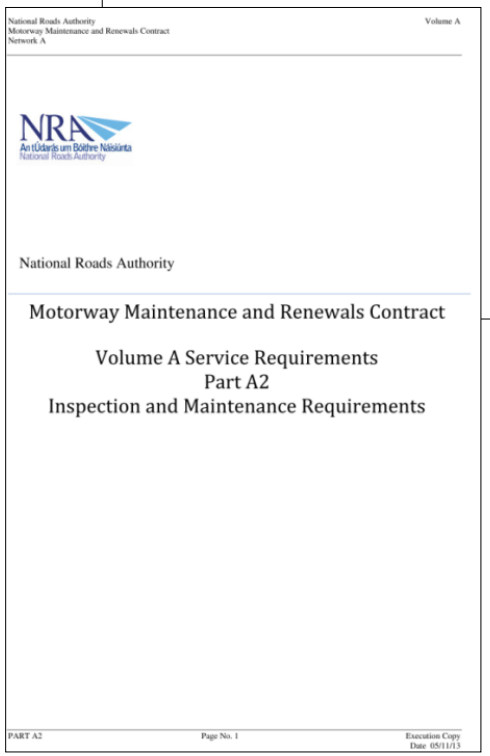
### Volume C – Pricing Documents

### Volume D – Network Information


National Roads Authority

Motorway Maintenance and Renewals Contract

Volume A Service Requirements
Part A3
Winter Service


National Roads Authority
Motorway Maintenance and Renewals Contract
Network A

Volume A

National Roads Authority

Motorway Maintenance and Renewals Contract

Volume A Service Requirements
Part A2
Inspection and Maintenance Requirements

PART A2 Page No. 1 Execution Copy Date 05/11/13

# Core Elements of the MMaRC Contract

- Routine Maintenance – Landscaping, Litter, Drainage
- Inspection and Maintenance of the Assets
- Winter Service
- Incident Response
- Renewals
- Others Elements:
  - Quality and Performance Management – KPI's
  - Certification Requirements
  - Reporting
  - Asset Inventory

# Routine Maintenance

**Part A-2 includes the requirements for:**

- Baseline Inspections (identify defects) and Routine Maintenance Management System (RMMS);
- Daily Safety Patrols;
- 28-day Safety Inspections;
- Other inspection requirements;
- Remediation of Defects:
  - Category 1 Defects to be remedied within 28 days, or 7 days for road restraint systems;
  - Category 2 Defects to be programmed by the Contractor and are subject to an Employer Instructed Works Order (EIWO);


# Routine Maintenance

- Detailed Inspections & Maintenance Frequencies outlined
  - Daily Patrol
  - Detailed Inspections
  - Yearly and fortnightly programmes
- Grass Cutting
- Litter picking / Sweeping and Cleaning / Graffiti removal
- Public Lighting inspections
- Road restraint systems, fences, walls, environmental barriers;
- Drainage / Studs and Markings
- Hedge cutting / Landscaping
  - dealing with invasive species
- Largely lump sum duties.


# Routine Maintenance

- Routine Maintenance Management System (RMMS) – asset database
  - Inventory
  - Data Collection
  - Defects
  - Inspection Requirements scheduled
  - Driver of all activities on network
    - Acts as a scheduling tool – defect logged on the system – defect then goes into a works order;
    - If lump sum activity – needs to be completed within a certain time period (7/28 days);
    - If EIWO works – Employers Representative & NRA will decide on priority or indeed if works should go ahead.
  - Detailed Asset Inventory – provided to the NRA.

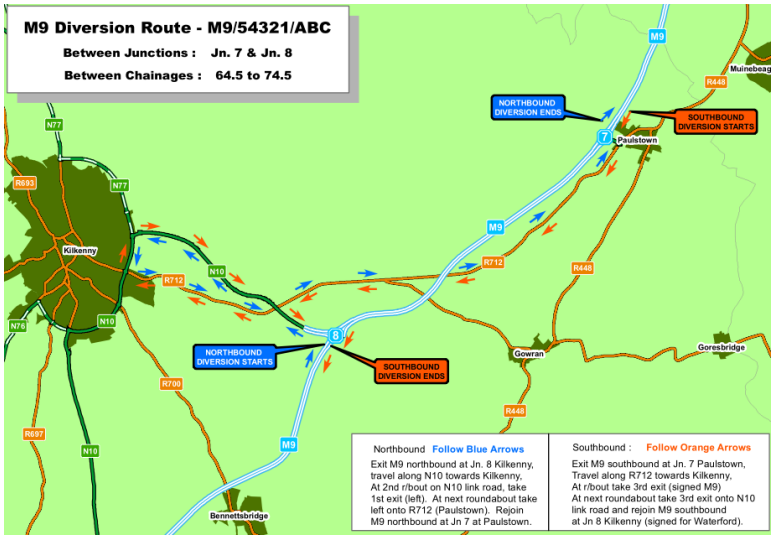
# Incident Response

**Part A4 of Contract includes the requirements for:**

- Incident Response;
- Requirement for an Incident Response Plan, including:
  - Resources and Equipment;
  - Liaison and Management of Communications during an incident;
  - Interface with Motorway Traffic Control Centre (MTCC);
  - Standard Diversion Routes;
- Provision of Support Response;
- Provision of Vehicle Recovery;
- Reporting:
  - Used for the identification of incident clusters on the Network;
- Incident Categories – Category 1 to 4.

# Incident Response

- Response times as per contract
- Support response if required
- Diversion routes established
- Emergency Services lead the incident
- Liaison with MTCC (Motorway Traffic Control Centre)
- Record keeping

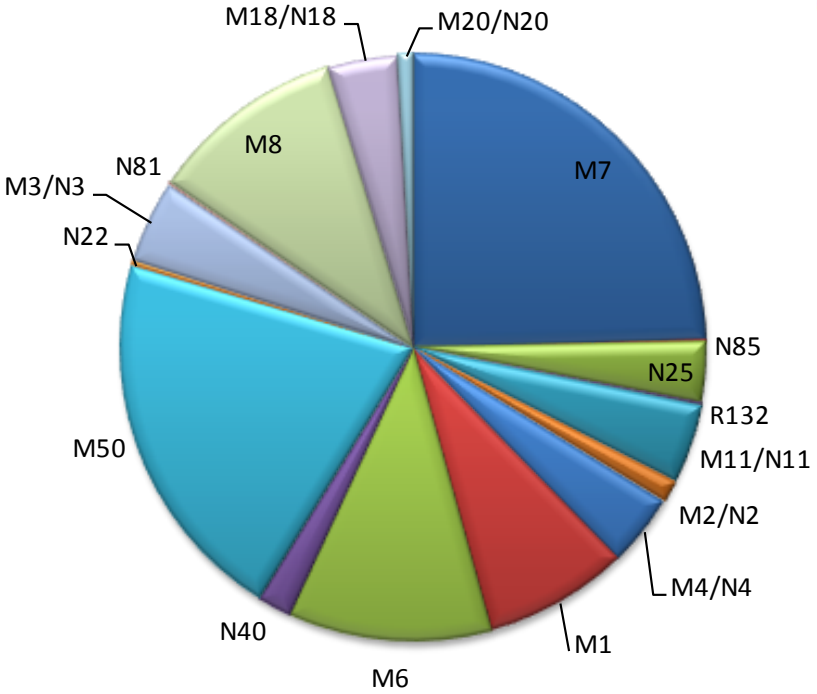



| Network | PEAK<br>Mon to Fri<br>06:00 – 10:00<br>15:00 – 19:00 | OFF-PEAK<br>Mon to Fri<br>10:00 – 15:00<br>19:00 – 22:00<br><br>Sat to Sun<br>06:00 – 22:00 | NIGHT<br>Mon to Sun<br>22:00 – 06:00 |
|---|---|---|---|
| A | 30 minutes | 45 minutes | 1 hour |
| B | 1 hour | 1 hour | 2 hours |
| C (Cork City Environs) | 30 minutes | 45 minutes | 1 hour |
| C (ex Cork City Environs) | 30 minutes | 1 hour | 2 hours |

# Incident Response

## Year to date*

| | Number | Collisions |
|---|---|---|
| Cat 1: | 3466 | 145 |
| Cat 2: | 1137 | 426 |
| Cat 3: | 837 | 276 |
| Cat 4: | 51 | 39 |
| Total: | 5491 | 886 |




- Example: Peak response time in Network A (30 mins) → 97% achieved
- Performance in relation to these activities are recorded against Key Performance Indicators under the contract.


*** Up to 9th October 2014**

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# Winter Service

- Winter Period: 1st October to 15th May
- Winter Service Plan
- Performance  Requirements for Winter Service
- Vaisala weather forecasting system - Manager
- Treatment Matrices
- Contractor to issue daily treatment notification, update and treatment reports

# Winter Service – Preparation for Season

A number of other events, training, familiarisation, vehicle delivery, installation exercises progressed over the course of the early part of the season / in advance of the season commencing, such as the following:

- Winter Audit of Facilities / Procedures / Systems in place;
- Snow Desk exercise;
- Vehicle Audits – to ensure they meet specification;
- Vehicle Route Familiarisation;
- Brine Tank Installation / Training;
- Vaisala (Weather Information Service) Training;
- Salt Deliveries;
- Weighbridge commissioning.


# Winter Service - 2013 / 2014 Season

- Period: 1st October 2013 – 15th May 2014;
- Spread on 60 nights in total – some times up to 3 / 4 runs per day;
- Salt used: 14,371t – across the 3 networks;
- Minimal snow;
- Minimal use of ploughs;
- Many marginal nights.

# Renewals

- Carried out initial Baseline Survey of all assets on the Network
- Inputted details of these into the RMMS
- Remedy these defects
  - Road Restraint Systems – addressed all Cat 1 defects across network; re-tensioned wire rope;
  - Drainage features – gullies, channels, filter drains, outfalls etc;
  - Potholes – pavement defects, overlay/inlay requirements;
  - Public Lighting – inspection requirements (10/20 days), repairs (as required);

# Renewals

- Defects - Contractual Requirements
  - Category 1 Defects
    - Road Restraint Systems – 7 days;
    - Potholes – certain size;
    - Public Lighting – inspection requirements under lump sum contract
    - Signs – missing / obstruction / damage
    - Studs - loose, % missing
    - Structures - frequency
    - Road markings - reflectivity
    - Covers / gratings

# Renewals

- Improvement works - Pavement Schemes
- Pavement overlay / inlay / strengthening requirement identified.
- Both HRA and SMA schemes completed / currently progressing:
  - N25 Carrigtwohill to Little Island - 8km
  - N40 / N28 Upgrade - 8.8km
  - M7 (Newbridge and Portlaoise) - 12km / 23km
  - M9 Kilcullen Link – 13.5km
  - M11 Bray – Shankhill – 10.5km
  - N20 2 + 1 Scheme - 8.1km
  - M4 - Jn 6 westbound slip - 0.3km
  - HD 28 sites:
    - M11 Jn 7 / M6 Jn 12
    - N4 - Jn 16 / N52

# Renewals

- Drainage – filter drainage remediation works / collection systems
  - Approx 60 - 70km completed to date
  - GPR surveys of system in places to prioritise works - permeability assessment
- Fencing – boundary issues
- Road Safety Inspections
  - Ghost driver measures installed
- Road Studs
- Road Markings
- Tree removal from clear zone e.g. Portlaoise / Newbridge
- Others

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# Renewals

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# Quality & Performance

- **Accreditation** of Quality, Environmental and Safety systems to EN ISO 9001, EN ISO 14001 and OHSAS 18001 within 12 months of the Starting Date – all achieved.
- **Quality Certificates** for high level plans (Quality Plan, Landscaping Maintenance Plan, Winter Service Plan, Incident Response Plan)
- **Certificates** for: Design; Design Check; Road Safety Audits; Temporary Works; Traffic Management; Method Statements, etc.
- **Monthly Key Performance Indicators (KPI's)** to measure the Contractors performance.
- **Quality Management Points** system.
- **Auditing** of the Contractors performance/compliances;

# Other - Innovation Introduced

- Filter drain refurbishment – use of planer and paver – increased output significant – drove costs per linear metre downwards.
- Pothole repair – hot box approach to pothole repairs on network using propose-built machinery.
- Flexible reach equipment for treatment of weed on pavements / channels / kerb / paviors.
- Drain / Verge / Median cleaning bespoke machinery.
- Raking / Harrowing of filter drains – use of specialist bespoke machinery.
- Herbicide spray systems for fast and accurate application to reduce duration of traffic management installations.

# Other - Innovation Introduced

- Development of oil treatment spray systems on vehicles to facilitate treatments over longer surface areas from the safety of the vehicle;
- In-house teams for barrier repair works;
- Use of pre-wet salt on contract / capability for full wet treatment;
- Road sweeper – very large size possible due to economies of scale.
- Adoption of Appendix H in relation to salt spreading:
  - Salt distribution issues to consider (calibration of machines)
  - Traffic Levels
  - Define Losses after spreading

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# Other – Environmental Issues

- Minimise salt usage where possible.
- Dealing with Noxious / Non-native / Invasive Species. Addressing issues in relation to:
  - Japanese Knotweed / Ragwort
  - Buddleia / Rhubarb / Winter Helitrope
  - Hogweed / Others
  - Removal of Gorse
- Manual Prepared to identify treatment measures
  - Spray – multiple times / over multiple seasons / time of year dependent;
  - Cut / Pull/ Bury / other approaches
- Ash Die Back
  - 12 occurrences to date on the Network - M6, M7, M8, M9, M18, N85.

**PHYSICAL CONTROL**

| Method | Season | Follow up | Comment |
|---|---|---|---|
| Combined digging and spraying | Can take place in winter. | Chemical control may be required over 5 years. | See below |
| Chemical control followed by excavation | Chemical control when non-persistant herbicide is 'active' Excavation two weeks later. | Monitor site of excavation regularly. | See below |
| Deep burial / Disposal to landfill | Following excavation | Monitor site of burial site regularly. | See below |

**CHEMICAL CONTROL**

| Method | Season | Follow up | Comment |
|---|---|---|---|
| Glyphosate - based plant protection product | May and late September / early October | Chemical control may be required over 5 years. | Glyphosate breaks down in the soil relatively quickly. Glyphosate has the disadvantage of being potentially damaging to non-target plants - care required during application of herbicide. |
| 2,4-D Amine based plant protection product | May and late September / early October | Chemical control may be required over 5 years. | 2, 4-D Amine has the advantage of being selective and specific to broad-leaved plants. |

**Comments:** Japanese Knotweed is a robust, herbaceous perrienial plant with hollow bamboo-like stems. It forms yellow cream flowers in late June or August. Its stems are green with red spots in summer and turn brown during winter. Japanese Knotweed is highly invasive and extremely difficult to eradicate completly. All control measures will require follow-up in subsequent seansons. Excavation should only be considered where construction requires it. Rhizome growth (rootstock) may extend up to 7m horizontally from the nearest growth. The current most widely recommended chemical for Japanese Knotweed control is glyphosate and it should be applied in late September or early August. Plants should also be treated early in the growing season (May) to stunt the growth of the plant. Plant protection products containing 2, 4-D Amine may be used on smaller infestations of the plant.

# Other – Public Lighting Assets

- Protocol to transfer the public lighting assets within the MMaRC Boundary from the Local Authority to the MMaRC Contractor / NRA;
- Requirement for asset information to facilitate this transfer:
  - Requirement for as built data in relation to network / system in place;
  - MPRN Numbers / injection points / requirement for circuit splits;
  - Payment records and other data.
- Process already commenced with a number of Local Authorities – transfer completed when information provided;
- Look towards 2020 target – National Energy Efficiency Action Plan 2009 - 2020 (NEEAP) – reduction in energy usage by 33%. Possible options:
  - Dimming technology;
  - LED lights;
  - Turn off / trimming
  - Other options.

# Other - Motorway Traffic Control Centre (MTCC)

- Incident Management
- Collate/report a large amount of information
- Marker plate signs already in place
- Information signs to be rolled out.
- Road space booking system
- Tracking of winter vehicles
- Early warning of safety issues
- Accident investigation

# Other - Low Drainage Assessment Areas

- As per IAN 09/13 - Geometric Design to Improve Surface Drainage
- Introduction of a number of Rolling Crowns / other measures to address locations on the Network that require intervention
- Number planned /ongoing on M7, M8, M9 and M18
- Follows requirements of Guidance Note :
  - Flow Path length
  - Water Film Depth thickness
  - Minimum Gradient
  - Accident History is a major determinant in the identification / prioritisation of the locations that require intervention.

# Other - Public Relations

- Responses to Ministers, TD's, Local Councillors
- Ongoing liaison with Local Authorities
- Meetings with An Garda Siochána, Fire Service, Defence Forces
- Dealing with Small Claims Court
- Dealing with claims/Irish Public Bodies - Insurance Requirements
- Statutory Requirements

# Summary

- Robust contract in place;
- New Contracts – with many requirements;
- Contracts working well to date;
- A lot more still to do.

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# Any Questions?


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