Comhairle Contae Mhaigh Eo
Mayo County Council

Lagan
OPERATIONS & MAINTENANCE

TII
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

rps MAKING COMPLEX EASY

ARUP

# A Collaborative Approach To The TII VRS Regional Term Maintenance Pilot Contract

Comhairle Contae Mhaigh Eo
Mayo County Council

ROSCOMMON
Comhairle Contae Ros Comáin
Roscommon County Council

SLIGO
COUNTY COUNCIL
COMHAIRLE CHONTAE SHLIGIGH

Comhairle Chontae Liatroma
Leitrim County Council

Damien Glackin

Executive Engineer, Road Design Office
MAYO COUNTY COUNCIL

# Agenda

1. Introduction
2. Location
3. Form of Contract
4. Works requirements
5. Progress to date
6. Collector App
7. Lessons learnt

# Introduction:

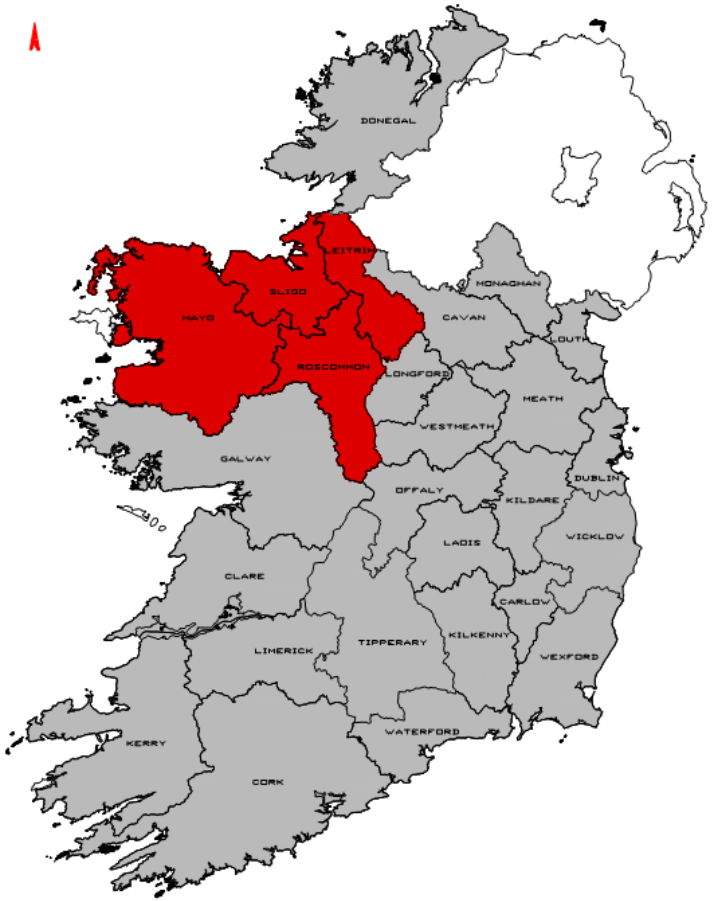
- Vehicle Restraint Systems Regional Term Maintenance Pilot Contract is a 2 year contract which commenced in September 2019

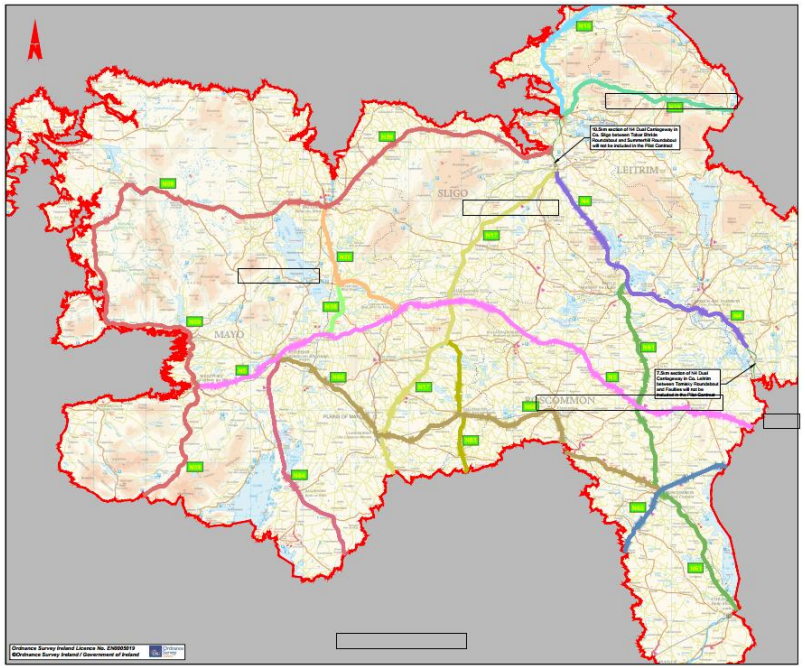
- VRS Regional Term Pilot Contract was developed by TII to explore how a VRS maintenance management regime would work in Ireland

- Determine how effective it would be in managing and maintaining TII's VRS Asset

# The selected Location:

The selected region includes all VRS's on national roads in Counties Mayo, Roscommon, Leitrim and Sligo



# The selected Location Routes:

## 6 Primary
## 7 Secondary Routes

| County | Leitrim | Mayo | Roscommon | Sligo |
|---|---|---|---|---|
| **Routes** | N4** | N5 | N4 | N4** |
| | N15 | N17 | N5 | N15 |
| | N16 | N26 | N60 | N16 |
| | | N58 | N61 | N17 |
| | | N59 | N63 | N59 |
| | | N60 | N83 | |
| | | N83 | | |
| | | N84 | | |

** not be included as part of this pilot

10.5km section of dual carriageway on the N4 in Sligo between Tobar Bhríde Roundabout and Summerhill Roundabout

7.5km section of dual carriageway on the N4 in Leitrim between Tomisky Roundabout and Faulties

Task Service Areas <u>covered under MMaRC.</u>

# The selected Location Routes:

## VRS Tender Data per Route

| Route No. | Route Length (KM) | No. of VRS | Length of VRS (m) |
|---|---|---|---|
| N04 | 75.10 | 102 | 14,637 |
| N05 | 122.10 | 176 | 27,088 |
| N15 | 31.80 | 24 | 1,813 |
| N16 | 40.30 | 63 | 4,562 |
| N17 | 73.90 | 112 | 12,724 |
| N26 | 29.80 | 28 | 3,837 |
| N58 | 11.30 | 1 | 67.00 |
| N59 | 186.10 | 124 | 10,646 |
| N60 | 89.80 | 18 | 1,169.00 |
| N61 | 74.20 | 48 | 6,664 |
| N63 | 27.50 | 4 | 652 |
| N83 | 27.00 | 0 | 0 |
| N84 | 43.10 | 7 | 1404 |
| | **832** | **707** | **85,263** |

# Form of Contract

**PW-CF11 – Public Works "Term Maintenance and Refurbishment Contract"**

- Specifically created for term maintenance contracts where urgent maintenance requirements are envisaged.

- RPS developed the contract procurement documents based upon TII Signs Maintenance Contracts. Includes a performance payment mechanism.

# Contract

## Tender Assessment and Award Criteria

| Most Economical Advantageous Tender | |
|---|---|
| **Criterion** | **Evaluation Marks** |
| **Price (30%)** | **300** |
| Notional Tender Total (from Volume B) | 300 |
| **Quality (70%)** | **700** |
| Resources | 200 |
| Quality Control | 300 |
| Methodology | 200 |
| **Total** | **1000** |

# Contract

- Competition run through TII's Vehicle Restraint Systems Framework in June 2019, with Tender deadline 5th July 2019.
- Lagan Operations & Maintenance Ltd (LO&M Ltd), deemed the most economically advantageous tender.
- LO&M Ltd, appointed as maintenance Contractor in September with works commencing October 2019.

# Works requirements

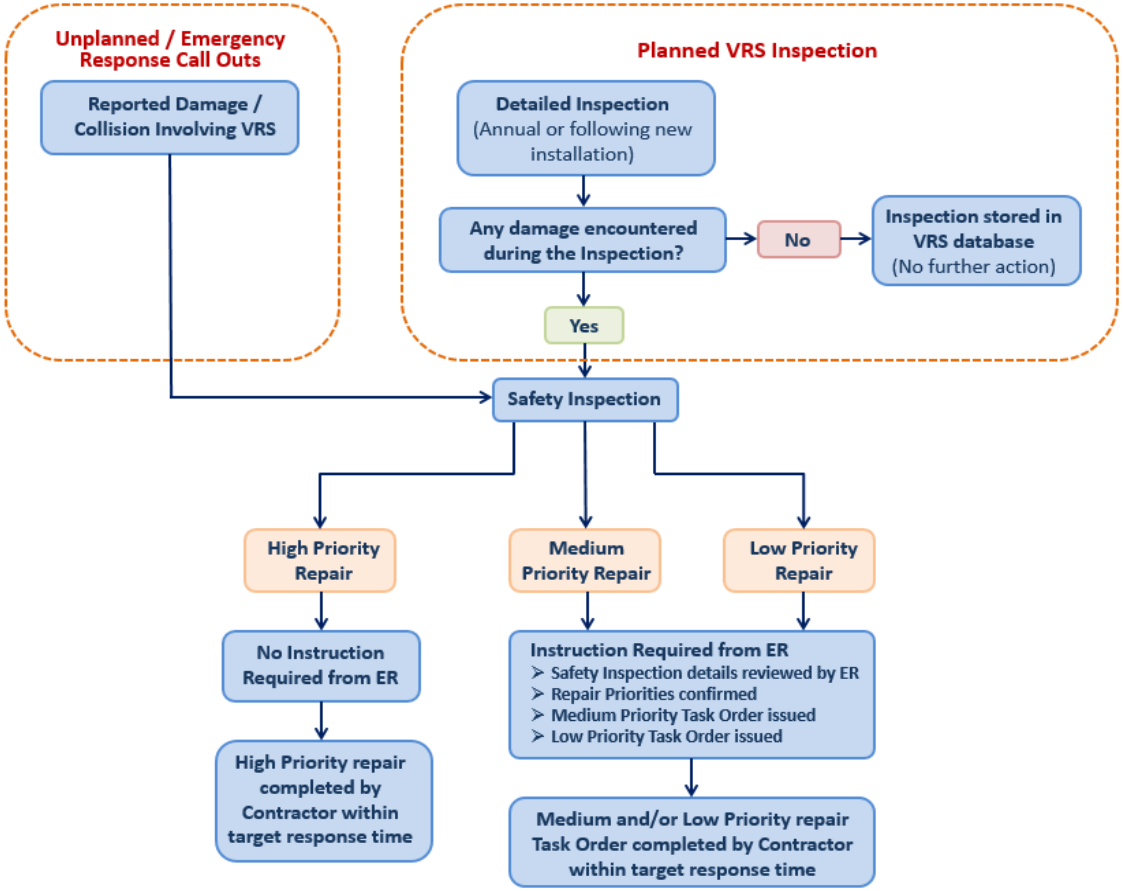
- **Detailed Inspections**
  - Annual Inspection of all VRS on the network
  - First detailed inspection is the VRS inventory survey
  - Using TII VRS Collector App Inspection Template

- **Safety Patrols**
  - National Primary – Fortnightly for the first quarter, monthly thereafter
  - National Secondary – Monthly

- **Safety Inspections**
  - Unplanned visits to new collision sites
  - Investigate complaints and reported damage

# Works requirements

- **VRS Inspection Flowchart**



# Works requirements

- **Description of Repair Priority**

| Repair Priority | Description |
|---|---|
| **High** | VRS can no longer reasonably function and should be addressed within 1 week of the inspection as they pose an immediate risk |
| **Medium** | VRS should function adequately under a majority of impacts and should be addressed within 6 months of inspection |
| **Low** | Should not affect the barriers ability to perform and should be addressed within 9 months of inspection |

# Works requirements

- **Database Population and Maintenance**
  - Populated using the TII VRS Inspection Templates (Detailed & Safety Inspections) on the TII VRS Collector App
  - Details of all defects or damage identified during an inspection recorded
- **VRS Labelling**
  - Provide unique ID for every VRS inspected
  - Regular intervals – maximum 50m
  - Front face of beam or traffic side of posts – readily seen from moving vehicle
  - Robust adhesive, black numerals on light grey background
  - Concrete barrier – number plate type label

# Works requirements

- **VRS Labelling**


# Works requirements

- **Vegetation Removal**
  - Ensure that the working widths of VRS remain free from obscuration by vegetation
  - Inspect vegetation between March & August
  - Carry out vegetation removal between September 1st and February 28th/29th (Wildlife Act 1976 Clause 40)

- **Repair of VRS**

  Repairs identified through:
  - Contractor's inspections / patrols
  - TII's RSI inspections
  - Emergency Call-Outs
  - Local Authority Requests

# Progress to date:

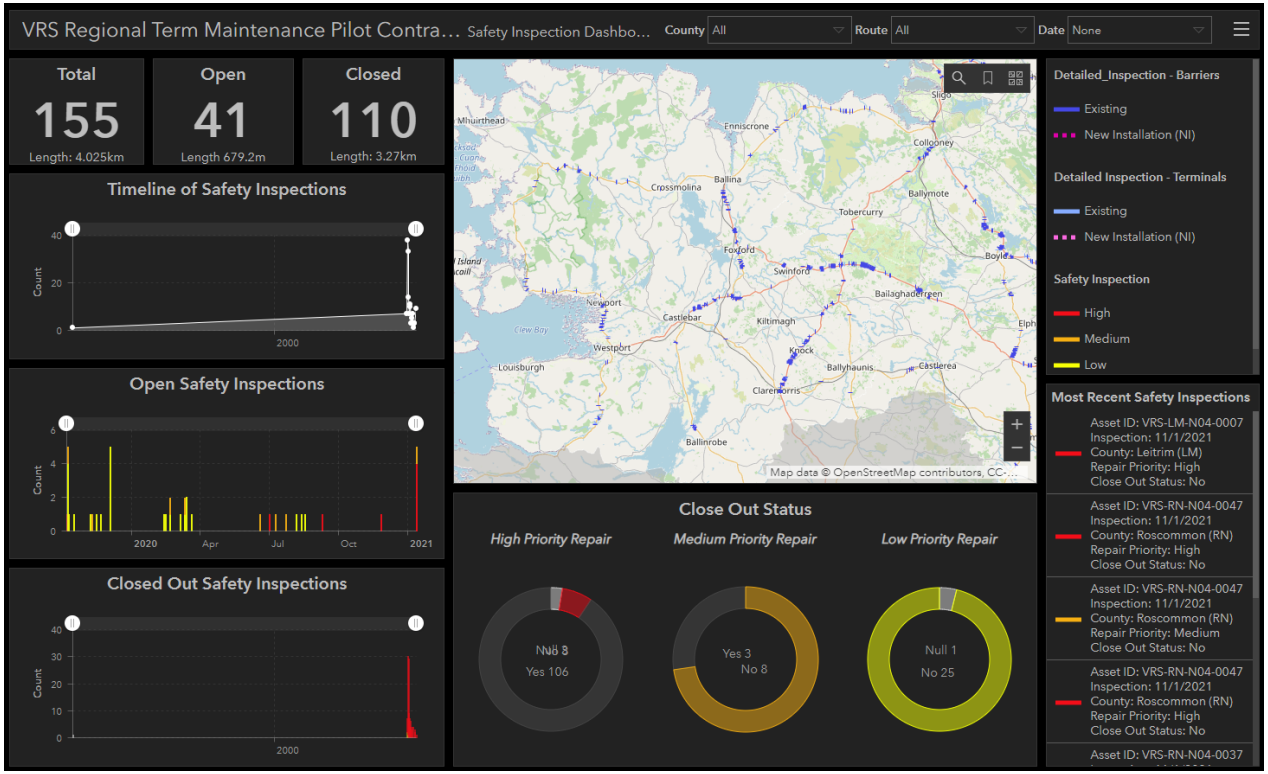
## Over the first year

- 105 VRS repairs completed with 25 end terminals also replaced equating to a length of 3km
- Detailed inspection of 835 VRS Assets with a total length of 169,200m and 1467 end terminals
- Monthly Safety patrols carried out on all routes. These patrols have identified new impacts and repairs required resulting in repair timelines being improved and target response times being achieved - 1 week for high priority repairs.
- Vegetation removal: 60,000 $m^2$ completed at early stage in year 1 to allow detailed inspection and to ensure working widths available.
- A new labelling system was developed. 95% complete. These labels will make it easier for LA personnel to identify and report damaged VRS's.
- One task order was issued in year 1 of the contract; replacement of two existing non-compliant barriers on the N59 in West County Sligo.

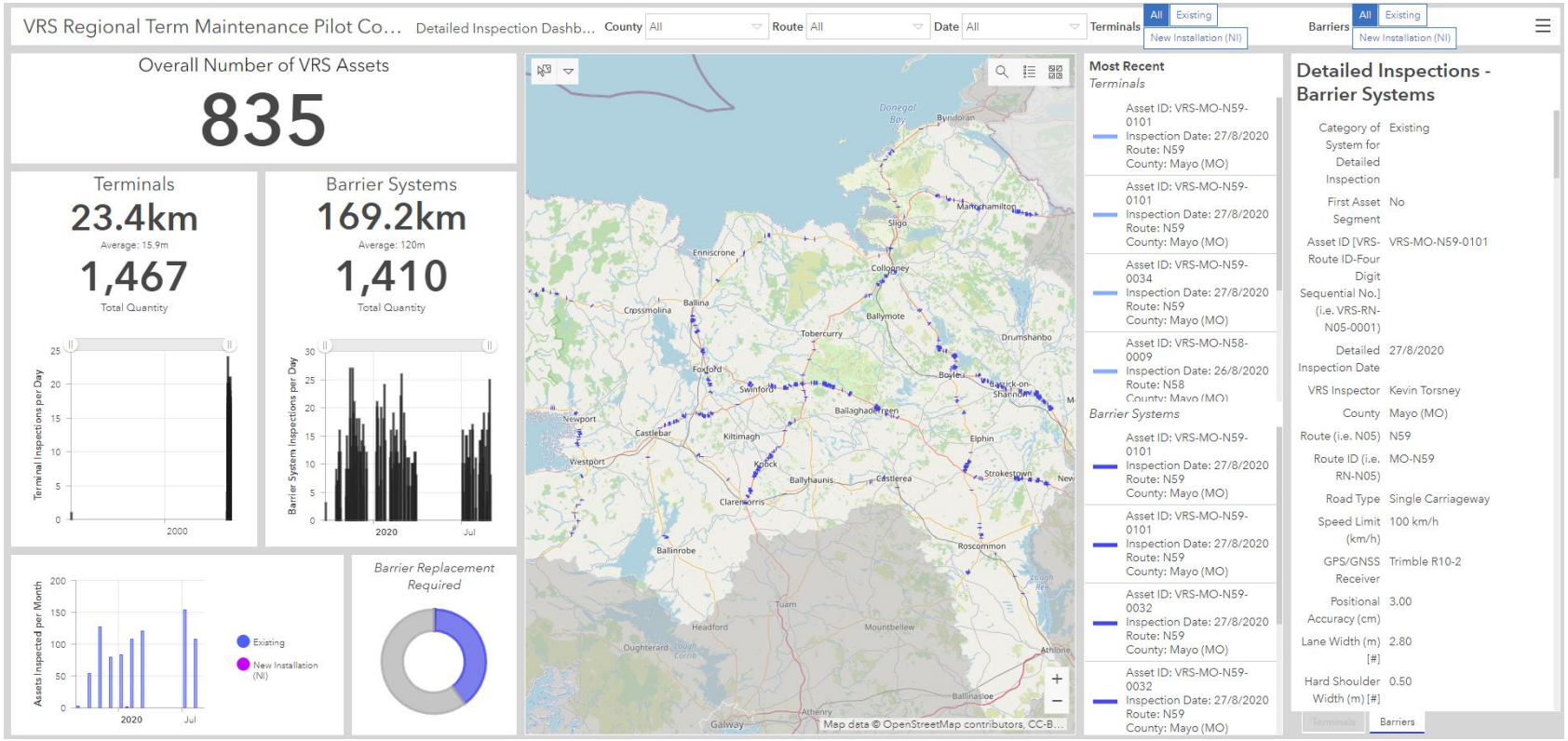
# Collector App:

Developed in conjunction with ARUP through ArcGIS mapping and analysis platform

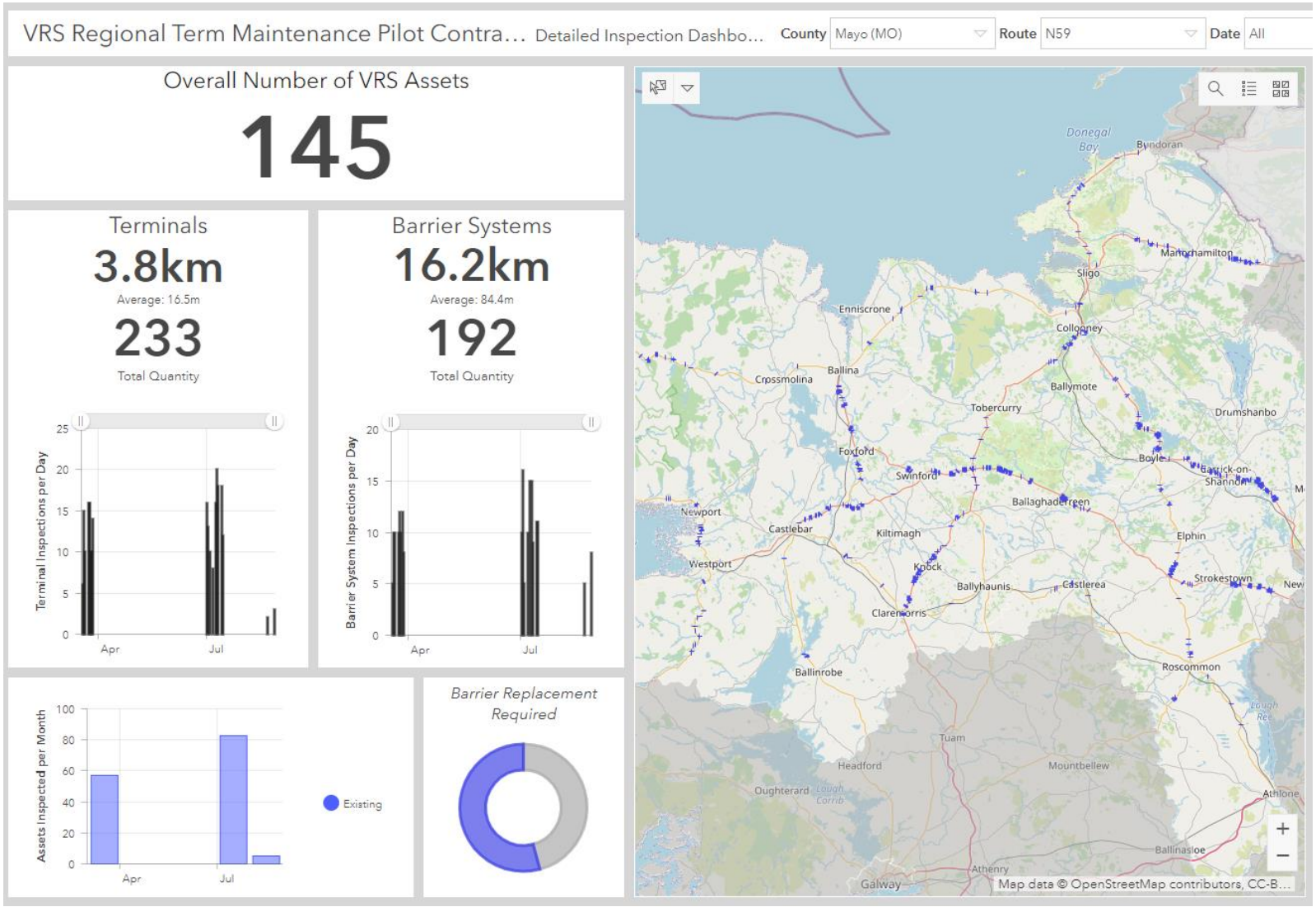
## Safety Inspection Dashboard



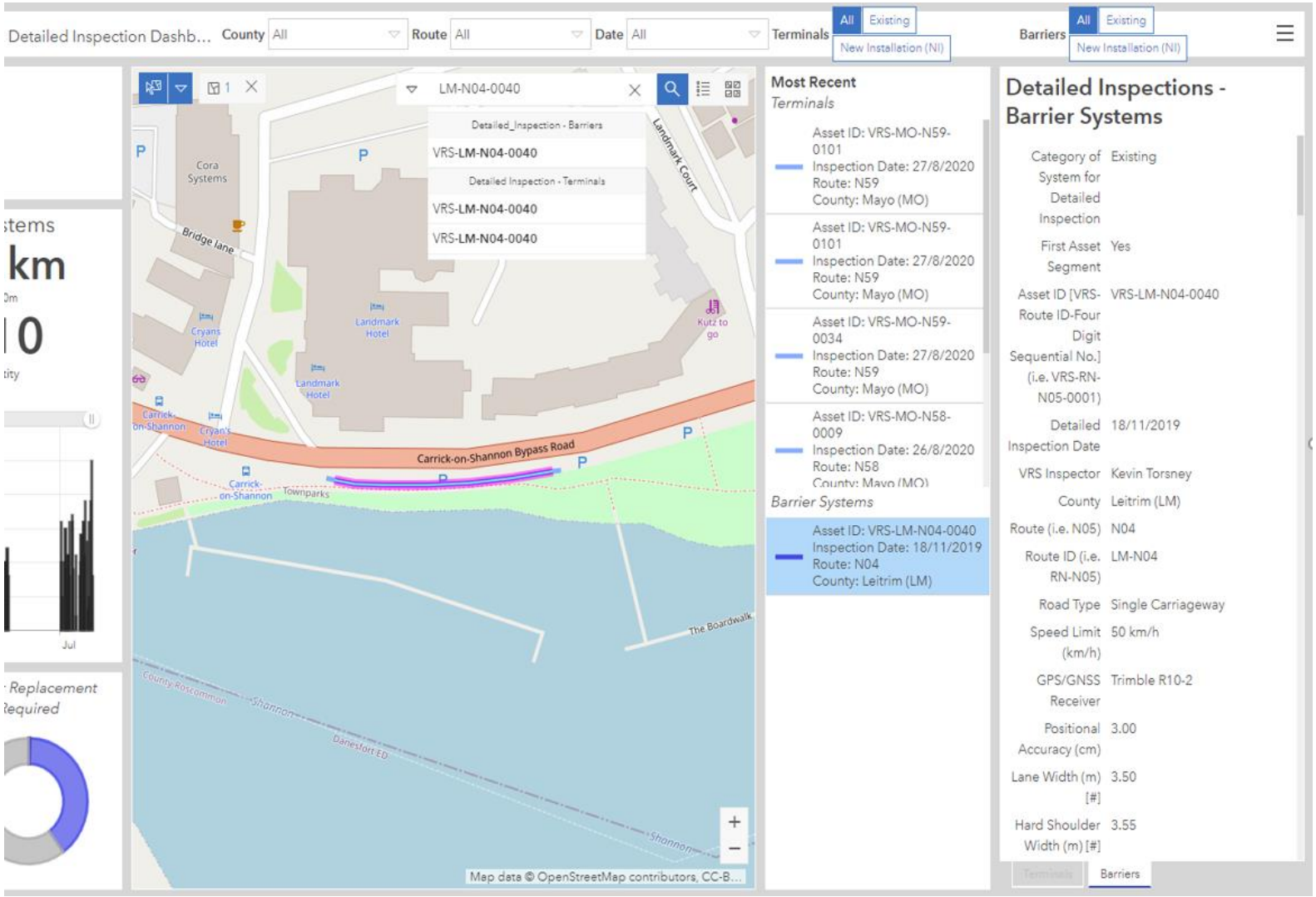
# Detailed Inspection Dashboard



# Detailed Inspection Dashboard



# Detailed Inspection Dashboard



# VRS Data per Route from Dashboard App

| Route No. | Route Length (KM) | No. of VRS assets | Length of VRS (m) |
|---|---|---|---|
| N04 | 75.10 | 118 | 32,800 |
| N05 | 122.10 | 143 | 48,200 |
| N15 | 31.80 | 33 | 5,200 |
| N16 | 40.30 | 83 | 14,600 |
| N17 | 73.90 | 96 | 25,300 |
| N26 | 29.80 | 26 | 9,784 |
| N58 | 11.30 | 16 | 4,275.30 |
| N59 | 186.10 | 194 | 27,900 |
| N60 | 89.80 | 42 | 4,303.90 |
| N61 | 74.20 | 70 | 16,400 |
| N63 | 27.50 | 5 | 1078 |
| N83 | 27.00 | 3 | 404.5 |
| N84 | 43.10 | 6 | 2384.1 |
| | **832** | **835** | **192,630** |

# Lessons learnt

- After 15 months of the 24 month contract the pilot is viewed as a success by all involved.

- Engagement will be required with all LA's in order to ensure this approach to managing the VRS Asset will be suitable to all, in future Regional term contracts.

# Lessons learnt

- Workload for the Contractor was heavily front loaded due to:
  - High volume of vegetation removal, 60,000m$^2$ completed 4,250m$^2$ envisaged at tender stage
  - Detailed inspection time consuming

# Lessons learnt

- The detailed inspection by highly experienced VRS installer has highlighted the large quantity of legacy defects that would not be visible from Drive-by safety patrols.
- The Collector App and Dashboard developed for the Contract has provided great insight for the TII and LA's into the VRS Asset on the Network.

| | Route Length (KM) | No. of VRS assets | Length of VRS (m) |
|---|---|---|---|
| Tender Stage | **832** | **707** | **85,263** |
| Detailed Survey | **832** | **835** | **192,630** |


# Thank You

Comhairle Contae Mhaigh Eo
Mayo County Council