



ROADS Services Training Group

LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION - 2022

Radisson Blu Hotel & Spa, Sligo May 2022



LOCAL AUTHORITY ROADS CONFERENCE and EXHIBITION – 2022

MapRoad Asset Management System

Brian Burke
Programme Manager – Pavement Management Unit
Road Management Office



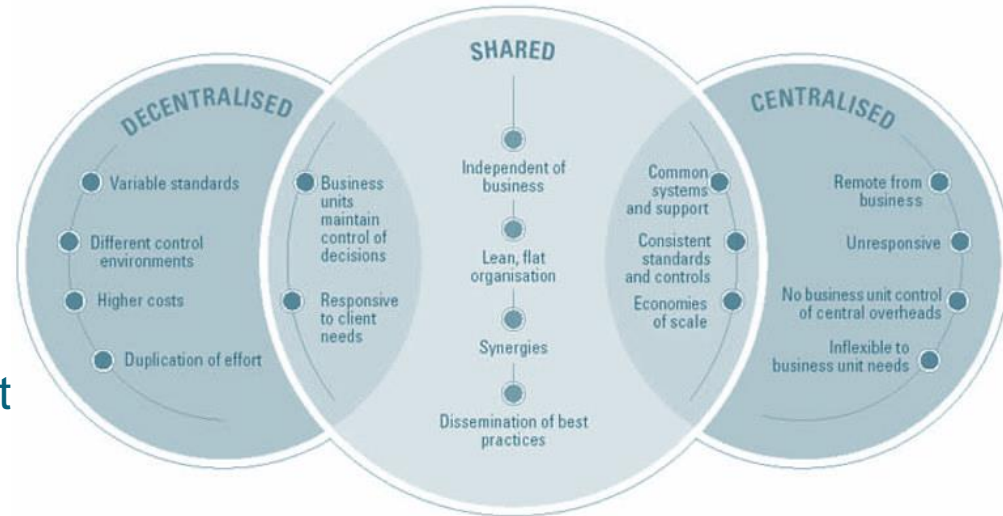
Overview

- Background to the Road Management Office (RMO)
- Guidance Documents associated with Asset Management for Roads
- MapRoad Asset Management System & Associated Apps
- Pavement Maintenance and Management Process
- Creating Projects and Annual Programmes
- Reporting and Process Outputs



Road Management Office

- Provision of Services to support local authorities in their functions
- Main Areas of Work
 - Pavement & Asset Management
 - Roadworks Licensing
 - Public Lighting
- Overarching this is the development and support for the MAPROAD Suite of software to support the areas of work in local authorities.





Some documents associated with Asset Management for Roads since 2014





MapRoad Asset Management System

The screenshot displays the MapRoad Asset Management System interface. On the left, a 'Tools' sidebar lists various layers and editing tools. The main map area shows a topographic map of the Kilkenny region, with road networks highlighted in green and blue. The map includes labels for towns like Thurles, Holycross, Cashel, Fethard, Killenaule, Uringford, Freshford, and Kilkenny. The interface also features a 'Data Editing' panel with dropdown menus for 'Projects', 'Programmes', 'Speed Limits', and 'Road Schedule'. A 'Gazetteers' panel at the top right allows for location search. At the bottom, a status bar shows coordinates and map scale.

- User interface for population of data
- Datasets of various road asset information.
- Collected via:
 - *Web browser*
 - MAPROAD PMS open source system using Microsoft SQL Server
 - *Apps*
 - Mobile Apps using smart device with Android operating system
- Developed by RMO, LGMA with the support of DoT
- Owned by the State.



MapRoad Asset Management System

- Users collect data in the field using a range of Apps
 - PSCI Condition Rating App
 - Works App (Record Projects)
 - Surface Inventory App (Record surface of road)
 - Speed Limits App (Record location of Speed Limit Signs)
 - Bridges App (Carryout Visual and Engineering Inspections)
 - Footways App (Record Hazards and Condition of Footways)
 - MapRoad Public Lighting (Record Inventory and condition of lights)



PSCI
App



Works
App



Speed
Limit
Signs
App



Bridges
App



Footways
App



MapRoad
Public
Lighting
App



MapRoad Asset Management System



Works App

10:56

Create Project

DELETE SAVE TO DEVICE UPLOAD

Year * 2020 2021 2022 2023 Project Phase

Project Name * LA001RTWORKSAPP01 Last PSCI Survey Date N/A

Environment * Urban Rural Project Length m

Measured Pavement Width (m) * 5

AA DT Band * 501 < AADT < 2000

Actual AADT

% CV Value * 3

Start Date Please select Construction Start Date

End Date Please select Construction End Date

CAPTURE PSCI AND GEOMETRY

16:27

Edit Project

SAVE TO DEVICE UPLOAD

Year * 2020 2021 2022 2023 Project Phase Awaiting Post-Works Survey

Project Name * LA001RTWORKSAPP01 Last PSCI Survey Date 27/08/2021

Environment * Urban Rural Project Length 551m

Measured Pavement Width (m) *

AA DT Band * AADT < 500

Actual AADT 0

% CV Value * 1

Start Date 17-06-2021 CLEAR

End Date 17-06-2021 CLEAR

CAPTURE PSCI CAPTURE PSCI AND GEOMETRY

10:55

Capture PSCI and Geometry

Recording...

Segment Code: L-1104-1

GPS Accuracy: 3.9 m Distance : 20 m

1 2 3

4 5 6

7 8 9

10

STOP RECORDING

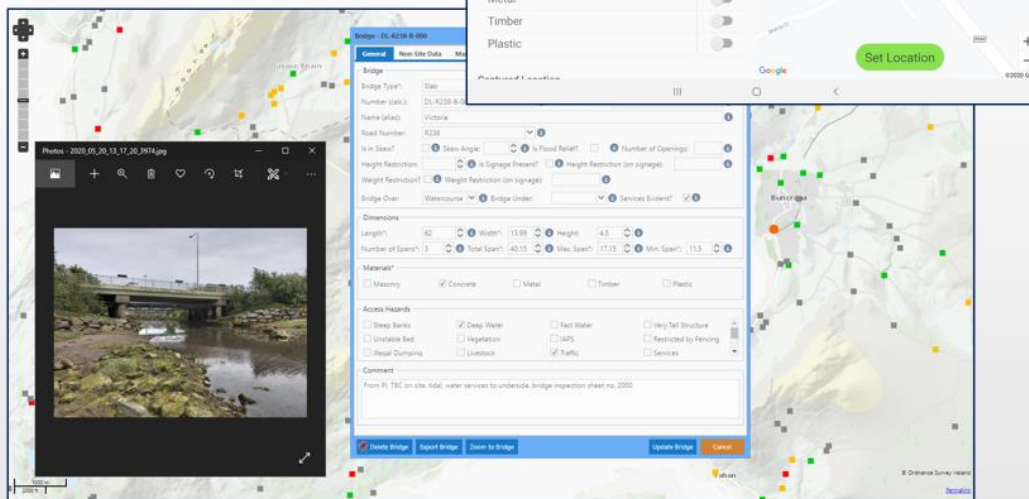
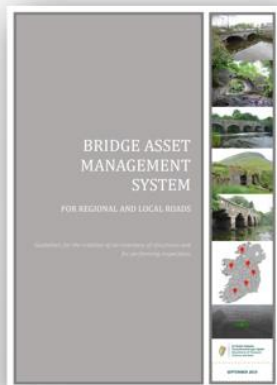


MapRoad Asset Management System



Bridges
App

- Bridge Inventory
- Bridge Inspection data

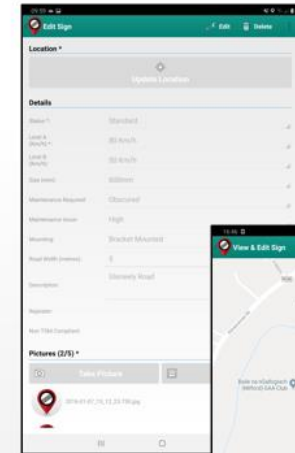
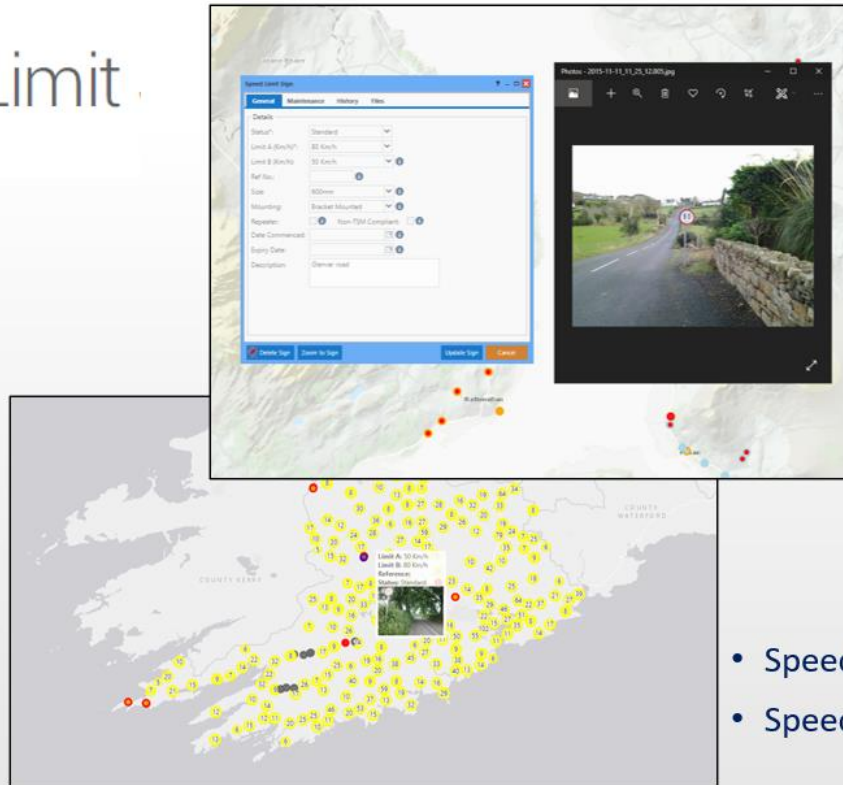
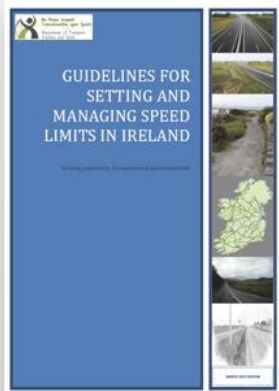




MapRoad Asset Management System



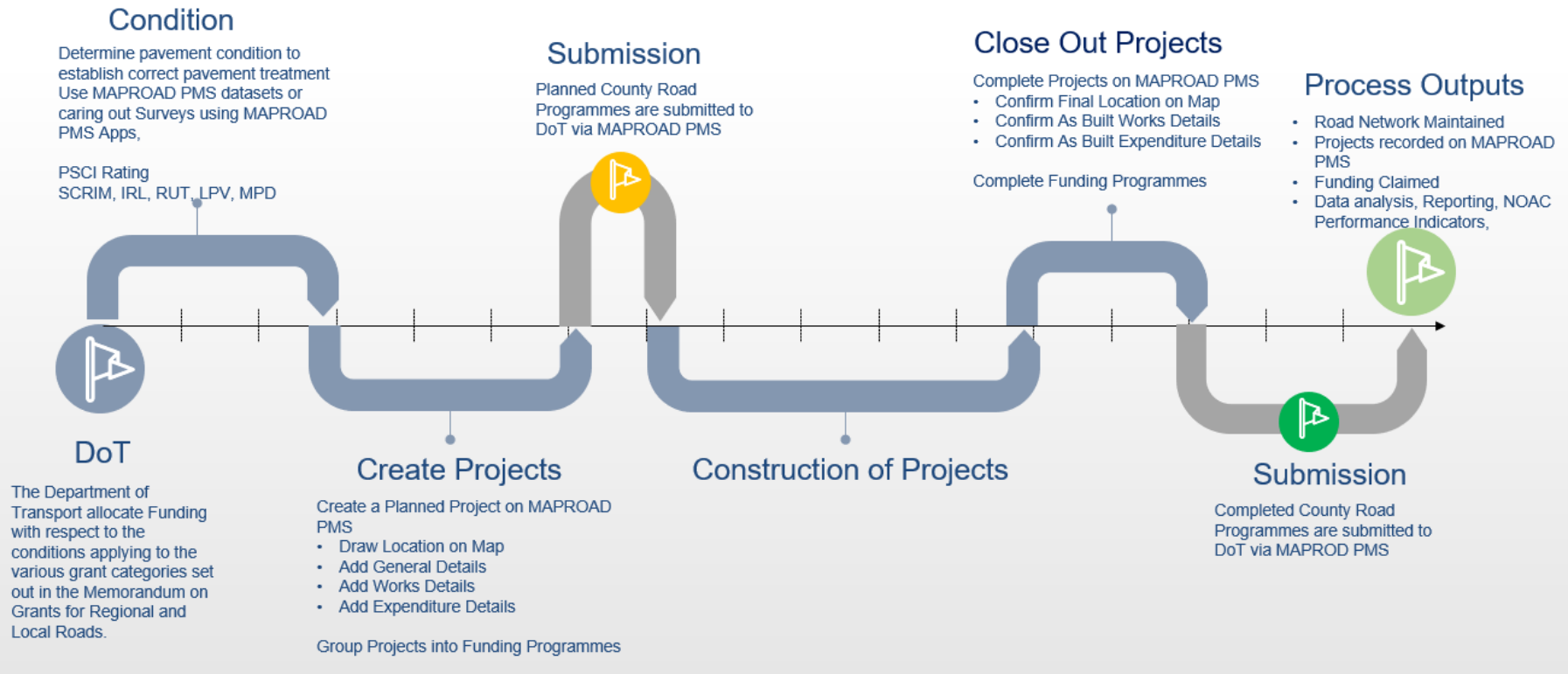
Speed Limit Signs App



- Speed sign location
- Speed sign maintenance



Pavement Maintenance & Management Process





Department of Transport – Grant Funding

The Memorandum on Grants for Regional and Local Roads provides.

- Information on and defines the conditions governing the allocation and payment of monies to Local Authorities in respect of all grant programmes for Regional and Local Roads.
- General guidance on the carrying out of grant aided works.
- Any pavement interventions across all grant categories or using own resources must also be uploaded to the MAPROAD PMS.
- All projects for RI and RM/SRM are submitted to the DoT and managed through MAPROAD PMS.
- The Restoration Improvement Programme (RI) continues to be the main focus with €260 million allocated in 2021
- The Restoration Maintenance (RM) Programme is the primary programme aimed at protecting road surfaces. €72 million allocated in 2021.



An Roinn Iompair
Department of Transport

**MEMORANDUM
ON GRANTS FOR
REGIONAL AND LOCAL ROADS**



EFFECTIVE 1st March 2021



Condition – Pavement Survey Standard for Regional and Local Roads

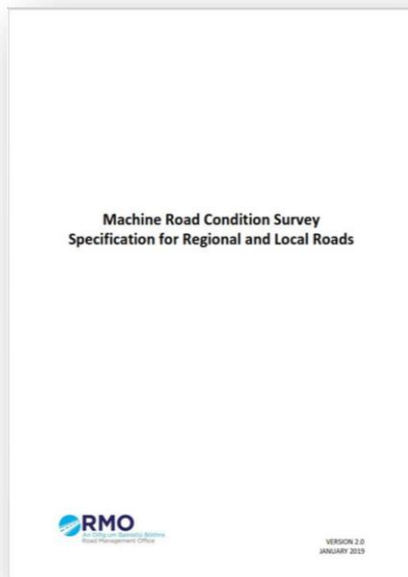
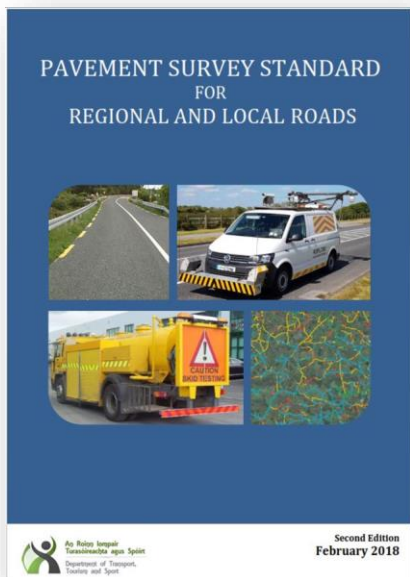


TABLE 3: NETWORK SURVEYS

Asset Type	Machine Survey		PSCI Visual Survey	
	Frequency	Coverage	Frequency	Coverage
Regional Roads (R)	6 years	100%	2 years	100%
Local Primary Roads (LP)	2 years	10%	2 years	100%
Local Secondary Roads (LS)	2 years	5 %	2 years	100%
Local Tertiary Roads (LT)	5 years	5%	5 years	100%

TABLE 4: 'BEFORE' AND 'AFTER' WORKS/PROJECT SURVEYS

Asset Type	Machine Survey (RR, SO and SR works)		PSCI Visual Survey (All works)	
	Frequency	Coverage	Frequency	Coverage
Regional Roads (R)	Every year	100%	Every year	100%
Local Primary Roads (LP)	Every year	10%	Every year	100%
Local Secondary Roads (LS)	Every year	10%	Every year	100%
Local Tertiary Roads (LT))	Every year	5%	Every year	100%



Condition – Pavement Survey Condition Index (PSCI)

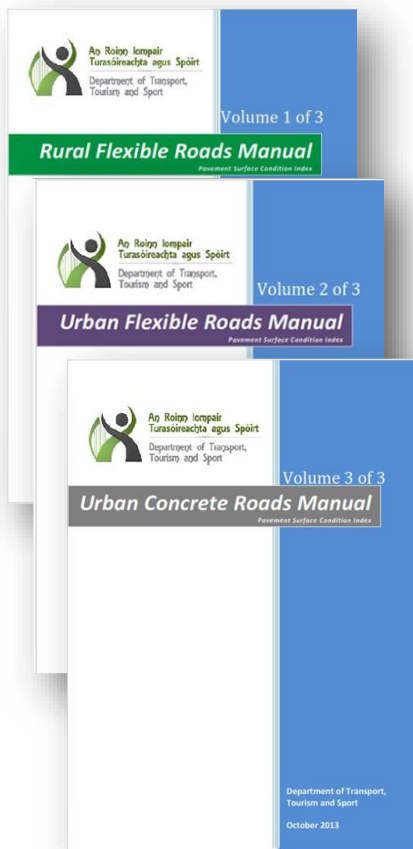


Table 1: The PSCI Rating System

Overall PSCI Rating	Primary Rating Indicators*	Secondary Rating Indicators*
10	No Visible Defects.	Road surface in perfect condition.
9	Minor Surface Defects ¹ . Ravelling or Bleeding $\leq 10\%$.	Road surface in very good condition.
8	Moderate Surface Defects ¹ . Ravelling or Bleeding 10% to 30% .	Little or No Other defects.
7	Extensive Surface Defects ¹ . Ravelling or Bleeding $\geq 30\%$.	Little or No Other defects. Old surface with aged appearance.
6	Moderate Other Pavement Defects ² . Other Cracking $\leq 20\%$. Patching generally in Good condition. Surface Distortion requiring some reduction in speed.	Surface defects ¹ may be present. No structural distress ³ .
5	Significant Other Pavement Defects ² . Other Cracking $\geq 20\%$. Patching in Fair condition. Surface Distortion requiring reduction in speed.	Surface defects ¹ may be present. Very localised structural distress ³ (< 5 m ² or a few isolated potholes).
4	Structural Distress ³ Present. Rutting, Alligator Cracking or Poor Patching for 5% to 25%. Short lengths of Edge Breakup/Cracking. Frequent Potholes.	Other defects may be present.
3	Significant Areas of Structural Distress ³ . Rutting, Alligator Cracking or Poor Patching for 25% to 50%. Continuous lengths with Edge Breakup/Cracking. More frequent Potholes.	Other defects may be present.
2	Large Areas of Structural Distress ³ . Rutting, Alligator Cracking or Very Poor Patching for $\geq 50\%$. Severe Rutting ($\geq 25\text{mm}$). Extensive Very Poor Patching. Many Potholes.	Very difficult to drive on.
1	Extensive Structural Distress ³ . Road Disintegration of surface. Pavement Failure. Many large and deep Potholes. Extensive Failed Patching.	Severe Deterioration. Virtually undrivable.

- 3 Manuals for varying Road Environments and Materials
- Two day training required in order to carry out PSCI Survey.
- 10-1 Colour Rating Index



Pavement Surface Condition Index (PSCI) Analysis in MapRoad

Data imported and updated to MAPROAD PMS via PSCI App

Filter Mapped Data in MAPROAD PMS, By Columns. PSCI Rating, Road Class, Date etc.

Road Class...	District/LEA	Segment Code	PSCI Ra...	Is Concrete?	Year	Date	Local Authori...	Local Authori...	Length (m)	Route Number
LT	Municipal Distri...	L-21111-0	10	No	2021	25-02-2021	Tipperary	TY	771.99 m	L-21111
NS	Municipal Distri...	N-74-2	6	No	2021	05-02-2021	Tipperary	TY	52.82 m	N-74
NS	Municipal Distri...	N-74-1	8	No	2021	05-02-2021	Tipperary	TY	90.65 m	N-74
LP	Municipal Distri...	L-4406-6	4	No	2021	05-02-2021	Tipperary	TY	11.72 m	L-4406
NS	Municipal Distri...	N-74-2	4	No	2021	05-02-2021	Tipperary	TY	90.13 m	N-74
NS	Municipal Distri...	N-74-1	10	No	2021	05-02-2021	Tipperary	TY	107.56 m	N-74
LP	Municipal Distri...	L-4407-3	10	No	2021	05-02-2021	Tipperary	TY	63.80 m	L-4407
NS	Municipal Distri...	N-74-2	10	No	2021	05-02-2021	Tipperary	TY	45.03 m	N-74
LP	Municipal Distri...	L-4407-3	4	No	2021	05-02-2021	Tipperary	TY	67.31 m	L-4407
NS	Municipal Distri...	N-74-2	8	No	2021	05-02-2021	Tipperary	TY	45.03 m	N-74
NS	Municipal Distri...	N-74-1	10	No	2021	05-02-2021	Tipperary	TY	29.27 m	N-74
LS	Municipal Distri...	L-8421-0	10	No	2021	05-02-2021	Tipperary	TY	69.57 m	L-8421
LP	Municipal Distri...	L-4406-6	10	No	2021	05-02-2021	Tipperary	TY	34.08 m	L-4406
LS	Municipal Distri...	L-8421-0	6	No	2021	05-02-2021	Tipperary	TY	34.80 m	L-8421
LP	Municipal Distri...	L-4406-7	8	No	2021	05-02-2021	Tipperary	TY	11.05 m	L-4406
LP	Municipal Distri...	L-8421-0	5	No	2021	05-02-2021	Tipperary	TY	23.96 m	L-8421
NS	Municipal Distri...	L-4406-7	5	No	2021	05-02-2021	Tipperary	TY	33.16 m	L-4406
LS	Municipal Distri...	L-8421-0	6	No	2021	05-02-2021	Tipperary	TY	11.98 m	L-8421
LP	Municipal Distri...	L-4406-7	4	No	2021	05-02-2021	Tipperary	TY	11.05 m	L-4406
LP	Municipal Distri...	L-4401-1	7	No	2021	29-01-2021	Tipperary	TY	11.91 m	L-4401



Condition – Machine Survey Data Capture

Machine Surveys captured at a network level on the Regional roads and at a sample level on the Local roads including pre/post project surveys



IRL (International roughness index)
RUT (Groove in Road)
LPV (Longitudinal Profile Variance)
MPD (Road Texture)



SCRIM (Skid Resistance)

Data is captured by a service provider and uploading into MAPROAD via a purpose built data importer



Condition – Machine Survey Data Analysis in MapRoad

Tools

Map Tools

Data Editing

Gazetteers

Layers

- Road Network Layers
 - Road Schedule (Basic)
 - Projects (Project Types)
 - TII Road Network
 - Latest Speed Limits (Speed Limit)
 - Latest TIN Values
 - Latest ADT Values
 - Latest Surface Survey Values
 - Latest PSCI Ratings
 - StreetView
- Network Editing
- MRL Editing Layers
- Boundaries
- Surveys
 - Surface Surveys
 - PSCI Surveys
 - Mechanical Surveys
 - SCRIM (CSC)
 - Invalid / Off
 - Very Good: > 0.55
 - Good: 0.45-0.55
 - Fair: 0.4-0.45
 - Poor: 0.35-0.4
 - Very Poor: < 0.35
 - IRI (m/km) (Left)
 - RUT (m/km) (Left)
 - LPV (mm2) (Left)
 - MPD (mm) (Left)
 - FWD
 - GPR
- 3rd Party Datasets
- Base Layers
 - OpenStreetMap
 - Google Hybrid
 - Grey Background
 - OSi (discovery)
 - OSi (aerial)
 - OSi (premium)

Mechanical Surveys

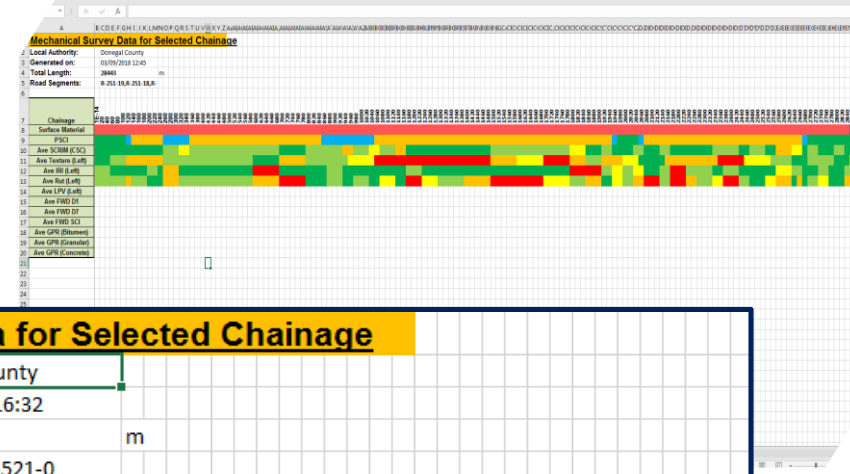
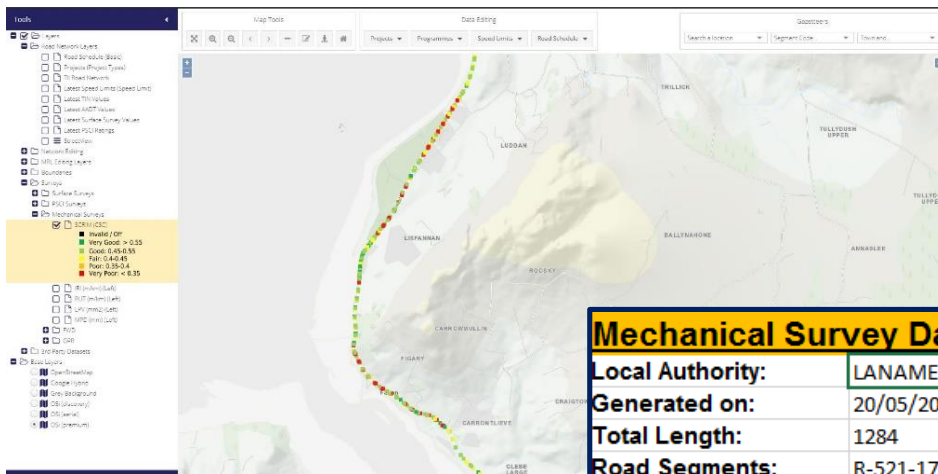
- SCRIM
 - Invalid / Off
 - Very Good: > 0.55
 - Good: 0.45-0.55
 - Fair: 0.4-0.45
 - Poor: 0.35-0.4
 - Very Poor: < 0.35

Point data displayed in the map

Data imported to MAPROAD PMS by Mechanical Survey Contractor using an upload facility



Condition – Machine, PSCI, Surface Data Analysis MapRoad Via a StripMap



Mechanical Survey Data for Selected Chainage	
Local Authority:	LANAME County
Generated on:	20/05/2018 16:32
Total Length:	1284 m
Road Segments:	R-521-175,R-521-0
Chainage	0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720 740 760 780
Surface Material	
PSCI	
Ave SCRIM (CSC)	
Ave Texture (Left)	
Ave IRI (Left)	
Ave Rut (Left)	
Ave LPV (Left)	
Ave FWD D1	

Select a Route on the map and export a STRIPMAP report to display all survey data in a schedule against the chainage of the selection.



Condition - Benefits



- Monitor the condition of the Network



- Forecasting. Assess backlog of deficiencies



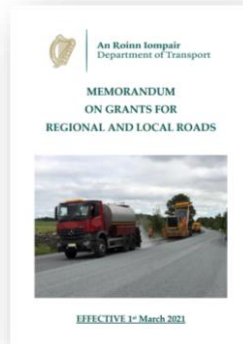
- Demonstrate return on investment i.e. Value Engineering



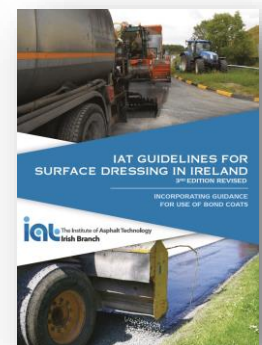
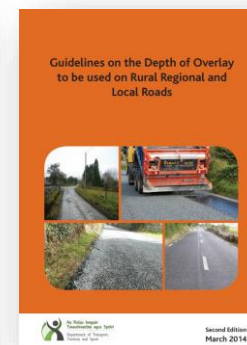
- Reporting, Analysis, Cause and Effect



Creating Projects – Annual Programmes of Works



- Standardised process for grant funding (DOT)
- Method and specifications
- RMO promote compliance
- RMO record Metrics with LAs – DOT, NOAC

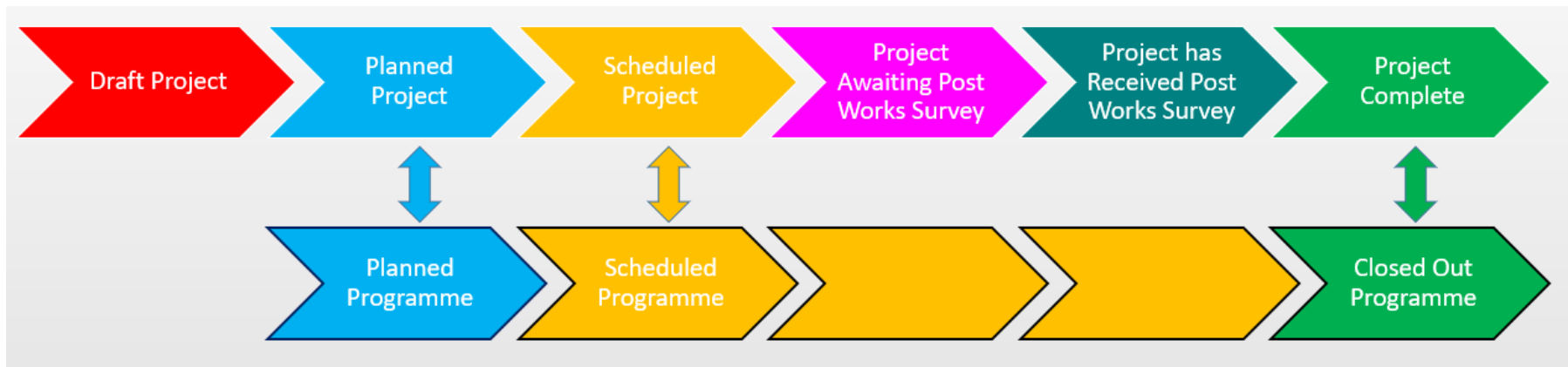




Create Projects – MapRoad System Process ensuring data quality

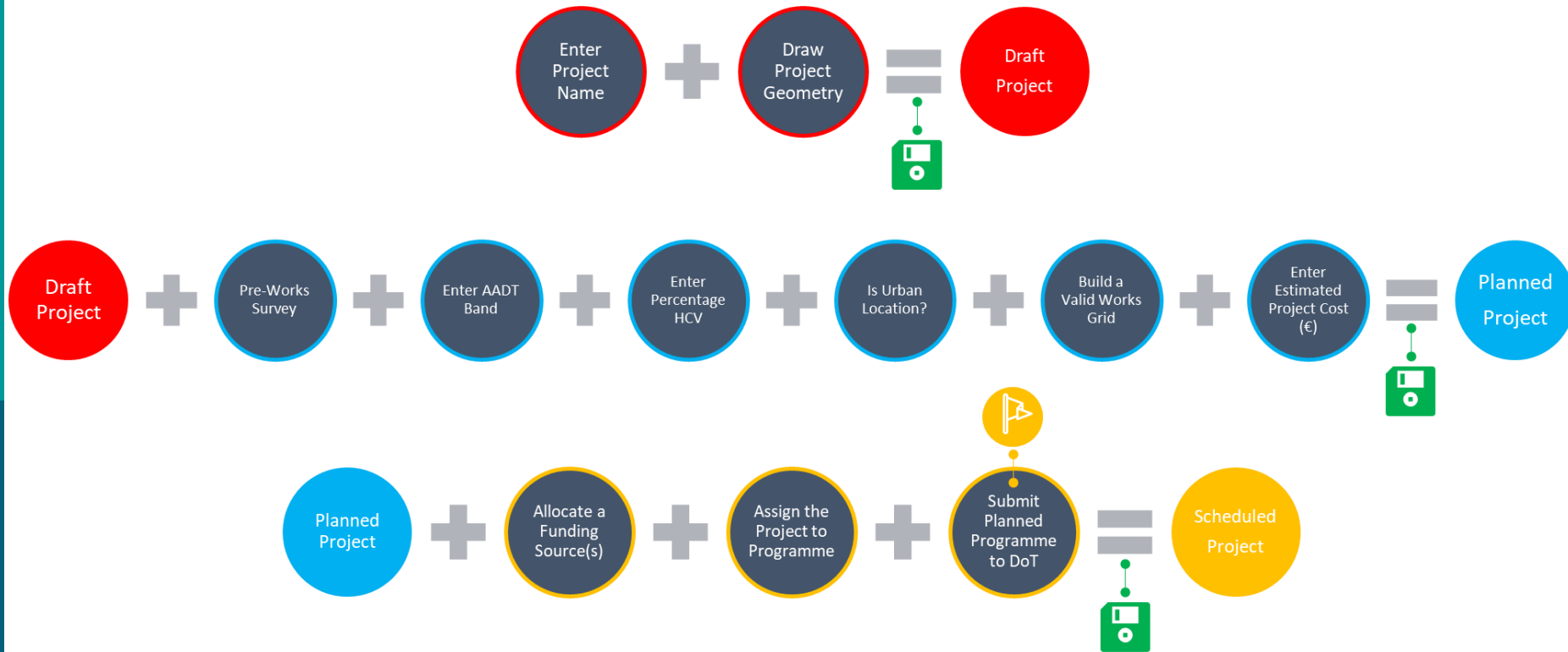


- The system guides the User to avoid wrong turns
- Programmes and Projects with have to meet specific criteria to progress through their Phases





Criteria Required to enable a Project to progress Phases Scheduled Project





MAPROAD Pavements Project Form (Planned)

Planned Projects on MAPROAD PMS

- Inputs i.e. Planned projects and subsequent Planned RI & RM programmes to be submitted to the DoT by Mid March annually

GARRAUN

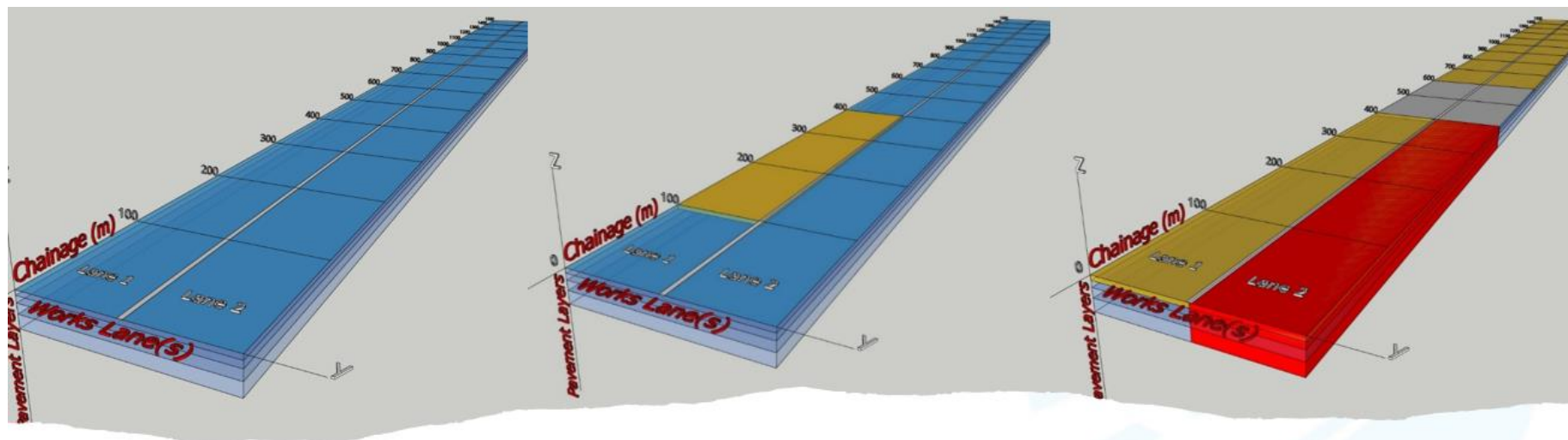
The screenshot displays the MAPROAD PMS interface. On the left, a map shows a road segment highlighted in orange. Overlaid on the map are two main project form windows. The top window is for 'Regional and Local Road Project: DG Braide' and the bottom window is for 'Regional and Local Road Project: IAT 2021'. The 'DG Braide' form includes sections for Project Information, Dates, Traffic, and Surveys. The 'IAT 2021' form includes sections for Mapped/Site Summary, Works Summary, Project Notes, and Works Grid. The Works Grid table is detailed below.

Parameter	Pre-Works Value	Pre-Works Survey	Post-Works Value
PSCI	6.00	15/02/2021	
SCRIM	0.53	22/03/2018	
MPD	0.0	14/05/2018	
IRI	0.0	14/05/2018	
Rut	0.0	14/05/2018	

Layer	Material	Designation	Thickness	Chip Size	Works By	Contractor
All Lanes Width: 6.40 m Construction Method: Overlay Intervention: Structural Rehabilitation						
Surface Course	Surface D...	Double	0	10/14 (1...	LA	
Binder Course			0			
Base			0			
Geosynthetics			0			
Sub-base	Emulsion ...	Granular Mater...	150		LA	
Capping			150 mm			



Capture of Construction Details



Projects now recorded across three Axis.

X - Chainage (m): Longitudinal distance in meters along road pavement. A Project can be transversely divided into a “Section” by setting a Chainage From and Chainage To.

Y - Lane(s): Transverse distance in meters across a road pavement. Works by lane can now be defined.

Z - Pavement Layers: Thickness in mm by road pavement layer. Pavement Layers can now be defined by any Section in any Lane.



Submission of Roads Programmes Year Start Inputs

- All projects for RI and RM/SRM are submitted to the DoT and managed through MAPROAD in line with DoT circulars
- Form B is a Excel List of Programme/Project Details and is exported and emailed to DoT via MAPROAD on submission of that Programme. At this stage Submission is of the Planned Programmes/Projects



MEMORANDUM ON GRANTS FOR REGIONAL AND LOCAL ROADS



EFFECTIVE 1st March 2021

FORM B - List of Regional and Local Roads Projects funded from 2019 RLR Grants Restoration Improvement (RI)																											
Local Authority: Cork City																											
Name: CB Restoration Improvement Programme 2019																											
Description: This is the 2019 Restoration Improvements Programme for all municipal districts in Cork City Council																											
Generated on: 09/20/2019 16:24																											
TAB 1 - General										TAB 2 - Before Works																	
Local Authority	Project Number	Works Code	Municipal District	Engineering Area	Road Class	Road Number	Is Urban	Works Name	Road Name	Road Type Code	Funding Grant Category	FMS Job Code	Proposed Surface Type	PSCI Before	RI Before	Planned Length	Planned Area	Planned Width	Fall Estimated Project Cost	Estimated Unit Cost	Estimated DTFA Grant Category Cost	Adjusted Planned Length	Adjusted Planned Area	Start_b	Start_y_b	End_b	
CB	1	2019-CB-SO-62	CDRK CITY C	North	LS	L-1021-5	Yes	Harbour View Road 2019	HARBOUR V	SO	RI			6		673	7744.33	11.5	389,200.00	50.26					564602	572603	565363
CB	2	2019-CB-SO-63	CDRK CITY C	South	LS	L-1112-12	Yes	Rangshon Road	ESTUARY OI	SO	RI			4		344	3950.48	11.5	221,200.00	55.39					572751	579274	572876
CB	3	2019-CB-SO-63	CDRK CITY C	South	LS	L-5071-11	Yes	Cross Douglas	CROSS DOU	SO	RI			4		451	2532.10	5.61	124,104.00	43.02					566663	570673	566556
CB	4	2019-CB-SO-63	CDRK CITY C	South	R	R-610-24	Yes	to Tercol	CDRK CITY	SO	RI			5	4.18	584	5548.38	9.5	273,402.00	50.00					569186	570368	569689
CB	5	2019-CB-SO-63	CDRK CITY C	North	LS	L-5348-2	Yes	Spring Lane Old Youghal Rd	SPRINGLANE	SO	RI			4		252	2162.5	7.4	308,325.00	50.00					566045	573782	567783
CB	6	2019-CB-SO-63	CDRK CITY C	North	LP	L-1029-1	Yes	Evergreen Rd	OLDYOUNG	SO	RI			4	7.62	330	2407.98	7.3	120,339.00	50.00					569037	573776	566778
CB	7	2019-CB-SO-63	CDRK CITY C	South	R	R-851-10	Yes	(Curnagh Rd to Sarsfield St)	CITY CENTR	SO	RI			4	5.13	402	4423.1	11	221,955.00	50.00					567666	570362	567327
CB	8	2019-CB-SO-63	CDRK CITY C	South	R	R-843-3	Yes	Gasheen Road	GLASHEEN	SO	RI			4	4.71	376	2213.75	7	110,687.50	50.00					566077	570363	565778
CB	9	2019-CB-SO-63	CDRK CITY C	South	LS	L-5038-1	Yes	Hughes Avenue	HUGHES AV	SO	RI			4		191	1201.1	6.3	60,095.00	50.00					566070	571191	566042
CB	10	2019-CB-SO-64	CDRK CITY C	South	LS	L-5039-1	Yes	Rossa Avenue	ROSSA AV	SO	RI			4		200	1783.03	8.3	106,196.00	53.48					563336	570401	563402
CB	11	2019-CB-SO-69	CDRK CITY C	North	LT	L-1021-2	Yes	Hallmourne	HOLLYMOOR	SO	RI			5		280	2240.04	8	89,625.60	40.00					564754	572360	564800
CB	12	2019-CB-SO-69	CDRK CITY C	South	LP	L-1011-3	Yes	Tramore Road (12 sections)	TRAMORE	SO	RI			5		130	1435	11.5	63,820.00	36.00					567071	569563	566825
CB	13	2019-CB-SO-69	CDRK CITY C	South	LT	L-1008-2	Yes	Shrewsbury 2019	SHEWSEB	SO	RI			4		35	750.71	8.1	42,050.00	56.01					563741	570598	563741
CB	14	2019-CB-SO-69	CDRK CITY C	South	LT	L-50878-1	Yes	Kensley Crescent	KENLEY CR	SO	RI			4		142	321.18	6.5	51588.00	56.00					563985	570445	563882
CB	15	2019-CB-SO-69	CDRK CITY C	South	LT	L-50878-4	Yes	St Francis Park	SANT FRANC	SO	RI			4		307	1644.16	6	66,384.00	39.51					566242	570301	566355
CB	16	2019-CB-SO-72	CDRK CITY C	Barney	R	R-617-43	Yes	Creven (R-6170209)	R-617	SO	RI			4	3.73	267	2960.48	11.1							567844	574886	567836
CB	17	2019-CB-SO-72	CDRK CITY C	Lobh	R	R-616-0	Yes	RIS Glanmire	R-616	SO	RI			4	6.68	663	6883.36	3.1							572582	576709	572531
CB	18	2019-CB-SO-72	CDRK CITY C	Balmooliga	R	R-615-0	Yes	Douglas West	CITY CENTR	SO	RI			4	4.41	62	691.20	11.1							563687	569481	563776



Pavements Project Form Complete

Regional and Local Road Project: SW-RI-201 Ballina (Section 2 - Boher Road to McKeoghs Yard)

Project Information:
 Year: 2019 | Project Phase: **Complete**
 Project Category: SW-RI-201 Ballina (Section 2 - Boher Road to McKeoghs Yard) | Name: SW-RI-201 Ballina (Section 2 - Boher Road to McKeoghs Yard)
 Intervention: SW-RI-201 Ballina (Section 2 - Boher Road to McKeoghs Yard) | Treatment Category: Strengthening

Dates:
 Pre-Works Survey Date: 15-08-2019 | Post-Works Survey Date: 30/01/2020
 Start Date: 15-08-2019 | End Date: 21-08-2019

Traffic:
 AADT Band: 501 < AADT < 2000 | Calculated AADT Band: 501 < AADT < 2000
 Actual AADT: 0 | Percentage HCV: 5.00 %
 Is Location Urban?: Yes | Current Speed Limit: 80 Km/h

Surveys
 Note only PSCI surveys within a limited time-frame are displayed here

Parameter	Pre-Works Value	Pre-Works Survey	Post-Works Value	Post-Works Survey
PSCI	4.00	23/07/2019	3.00	30/01/2020
SCRIM	0.42	02/07/2018	0.52	29/01/2020
MPD	1.34	05/09/2018	0.65	30/01/2020
IRI	6.11	05/09/2018	4.09	30/01/2020
Rut	4.92	05/09/2018	5.02	30/01/2020

Project Details:
 Assured Pavement Width: Unrecorded | Road Schedule Width: 6.40 m
 Project Average Works Width: 6.40 m | Project Works Area: 6,400 m²

Construction Details:
 Material: Overlay
 Designation: Double
 Thickness: 0
 Chip Size: 10/14(1) ... LA
 Works By: Contractor

Sub-base Details:
 Sub base: Emulsion ... Granular Mater... 150 LA
 Capping: 150 mm

Complete Projects on MAPROAD PMS

- Set Project Phase as Complete after all Project Criteria have be met
- Output Returns i.e. Complete projects and subsequent RI & RM programmes to be submitted to the DoT by 31st Dec annually



Reporting – Form A (Regional & Local Roads Investment Programme Outputs)

As part of the ongoing monitoring of the regional and local roads investment programme. The Department of Transport requires all LA's complete and return Form A in relation to outputs year on year.

2021 Grant Allocations.

- Restoration Improvement (RI) €260m
- Restoration Maintenance (RM) €42m
- Supplementary Restoration Maintenance (SRM) €30m
- Discretionary Grant (DG) €84.4m
- Drainage Grant (DR) €20m
- Community Involvement Scheme (CIS) €15.6m
- Specific Improvement Grant (SG) €16.6m
- Strategic Regional and Local Road Grant Projects (SRLR) €24.3m
- Climate Change Adaptation and Resilience (CCAR) €22.4m
- Former National Roads (FN) €8.1m

2021 Own Resources (OR) € XX m

Regional & Local Roads Investment Programme	
FORM A: Programme of Works Completed (Outputs) for 2019	
Local Authority: -	
Restoration Improvement Grant (RI)	
2019 Outputs Achieved	
2019 Actual Grant Expenditure on RI Works	no.
Total Number of Improvement Schemes	no.
Sum total of project lengths	m
Sum total of project areas	sq.m
Restoration Maintenance Grant (RM) & Supplementary Maintenance (SRM)	
2019 Outputs Achieved	
2019 Actual Grant Expenditure on RM works and SRM works	€
Total Number of Maintenance Schemes	no.
Sum total of project lengths	m
Sum total of project areas	sq.m
Discretionary Grant (DG) (including any amount transferred from RI)	
2019 Outputs Achieved	
Amount used for Strengthening work	€
Total Length of Strengthening work projects under this	

Restoration Improvement Grant (RI)	
2019 Outputs Achieved	
2019 Actual Grant Expenditure on RI Works	no.
Total Number of Improvement Schemes	no.
Sum total of project lengths	m
Sum total of project areas	sq.m



Reporting - Process Outputs



Asset Maintained



7000+ Projects recorded yearly on MAPROAD PMS
(80,000+ @ €2.1B total)



Data Sharing



Local Authority Monthly Reports



NOAC Local Authority Performance Indicator Report



Reporting - Process Outputs



Screenshot of an Excel spreadsheet titled "LARoadsProgramme (2) - Excel" showing a detailed table of road projects. The table is divided into three main sections: "TAB 1 - General", "TAB 2 - Before Works", and "TAB 3 - After Works".

TAB 1 - General

Local Authority	Project No.	Project Name	Project Type	Project Status	Project Start	Project End	Project Cost	Project Funding	Project Funding Source
Donagall	2020-01-001	Donagall Road	Resurfacing	Completed	2020-01-01	2020-01-31	100,000	100,000	Local Authority
Donagall	2020-01-002	Donagall Road	Resurfacing	In Progress	2020-02-01	2020-02-31	150,000	150,000	Local Authority

TAB 2 - Before Works

Local Authority	Project No.	Project Name	Project Type	Project Status	Project Start	Project End	Project Cost	Project Funding	Project Funding Source
Donagall	2020-01-003	Donagall Road	Resurfacing	Completed	2020-03-01	2020-03-31	200,000	200,000	Local Authority
Donagall	2020-01-004	Donagall Road	Resurfacing	In Progress	2020-04-01	2020-04-31	250,000	250,000	Local Authority

TAB 3 - After Works

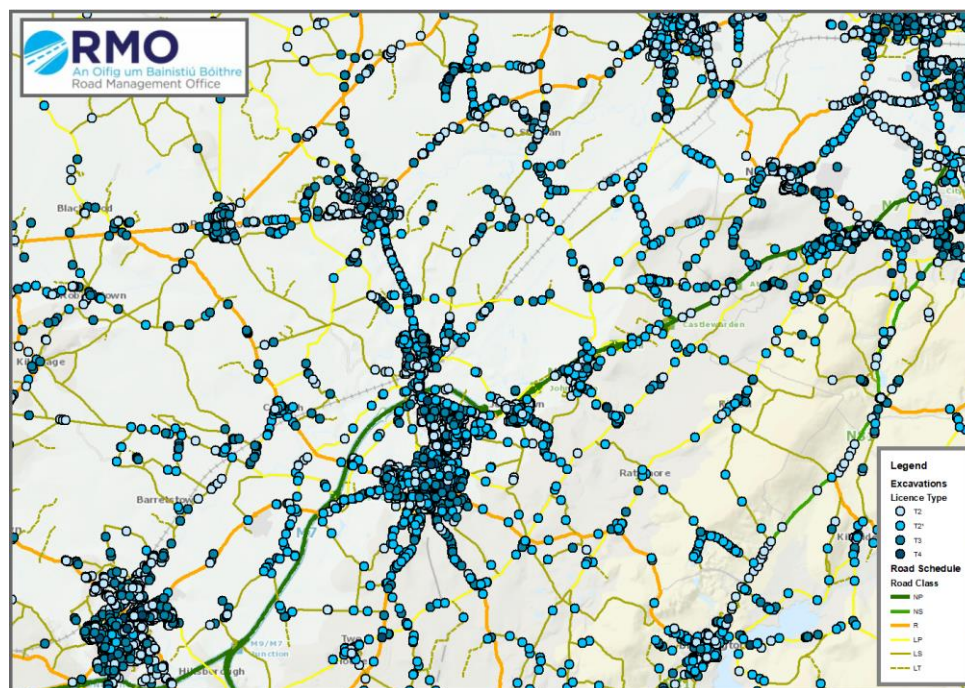
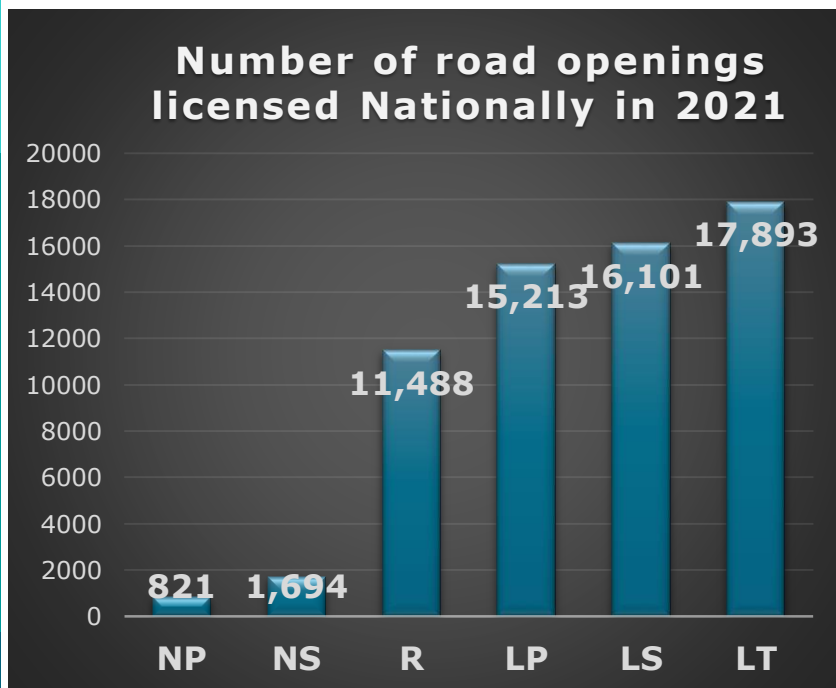
Local Authority	Project No.	Project Name	Project Type	Project Status	Project Start	Project End	Project Cost	Project Funding	Project Funding Source
Donagall	2020-01-005	Donagall Road	Resurfacing	Completed	2020-05-01	2020-05-31	300,000	300,000	Local Authority
Donagall	2020-01-006	Donagall Road	Resurfacing	In Progress	2020-06-01	2020-06-31	350,000	350,000	Local Authority



Developing Inspection Apps to display data from MAPROAD to ESRI portals.



Reporting - Process Outputs



- 8 years of spatial data from MRL can now be associated with the road network
- Ongoing integration of data will define Long Term Impacts of Road Openings
- New MRL functionality requires association of all openings with a segment
- All authorities should ensure a licence inspection process is in place to promote compliance with the guidelines and minimise impact.
- Development of an MRL inspection App is currently in progress



Reporting - Process Outputs

Statistics – Pavement Management Resealing 2015 - 2021

Road Class	Typical width (m)	Expenditure	Length Treated (km)	% of network	Average per year (%)
R	7.53	€80,774,110	2476	19%	2.6%
LP	4.75	€109,004,114	5153	22%	3.1%
LS	3.75	€106,822,909	6007	18%	2.5%
LT	3.25	€36,541,142	2208	9%	1.2%
Other	-	€555,252	5.4	-	
Total		€333,697,529	15,851	16%	2.2%



Reporting - Process Outputs

Statistics – Pavement Management Strengthening 2015 - 2021

Road Class	Typical width (m)	Expenditure	Length Treated (km)	% of network	Average per year (%)
R	7.53	€506,808,557	2954	22%	3.2%
LP	4.75	€481,636,640	5463	23%	3.3%
LS	3.75	€443,755,235	6973	21%	3.0%
LT	3.25	€212,430,498	3170	12%	1.8%
Other	-	€15,757,728	28	-	
Total		€1,660,388,660		18%	2.6%



Reporting – 2021 Intervention Outputs

- 6334 projects
- 6,200km of pavement interventions on NNR
- €400M spent

€77m

3407 km

Resealed

€174m

1838 km

Surface Restoration

€134m

864 km

Structural Rehabilitation

€13m 93 km

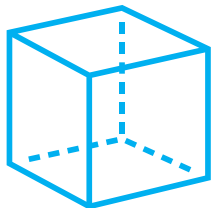
Road Reconstruction

Overall Rating	Treatment Measures	Surface	Structure
10	Routine Maintenance	Excellent	
9		Very Good	
8	Resealing & Restoration of Skid Resistance	Fair	Good
7		Poor	
6	Surface Restoration - Carry out localised repairs and treat with surface treatment or thin overlay.	Fair	Fair
5		Poor	
4	Structural Overlay - Required to strengthen road. Localised patching and repairs required prior to overlay.		Poor Overall
3			
2	Road Reconstruction - Needs full depth reconstruction with extensive base repair.	Very Poor	Poor Overall
1		Failed Overall	

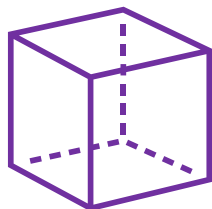


Reporting – 2021 Materials Outputs

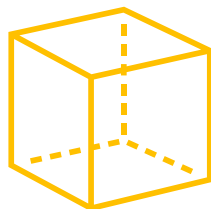
1.3 million metres cubed of road material laid in 2021



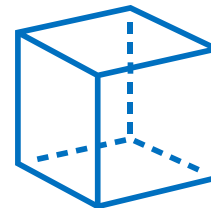
Surface
122,000 m³



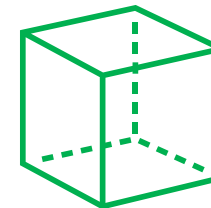
Binder
422,500 m³



Base Course
125,000 m³



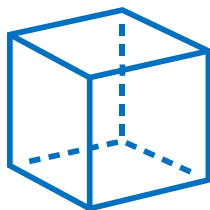
Sub Base
631,000 m³



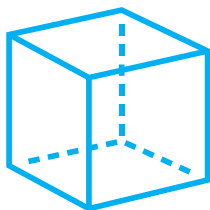
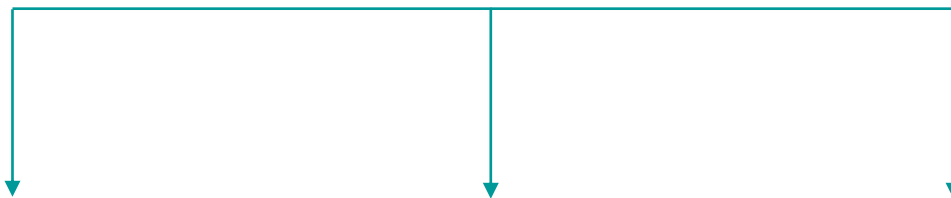
Capping Material
7,200 m³



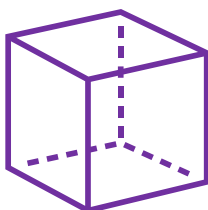
Reporting – 2021 Materials By Designation Outputs



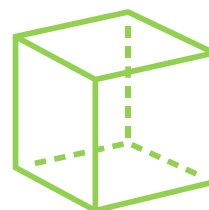
Sub Base
631,000 m³



Type C
Cl. 804
423,800 m³
67%



Type D – Wet
Mix Cl. 806
189,600 m³
30%



Recycled
Material
14,650 m³
0.02%





MapRoad Future Development Modules

- Circular Economy
- Carbon calculator
- Alternative materials





MapRoad Future Development Modules

- Currently scoping and designing future modules within MapRoad in areas of
 - Active Travel Pedestrian and Cycling Infrastructure
 - Drainage
 - Climate Adaptation
 - Capturing TII National Projects



Active Travel

**National Sustainable
Mobility Policy**
Action Plan 2022-2025





Thank You