

Managing the Regional and Local Road Network

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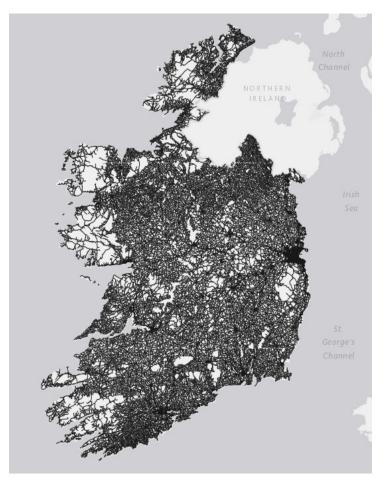


Background

Roads in Ireland



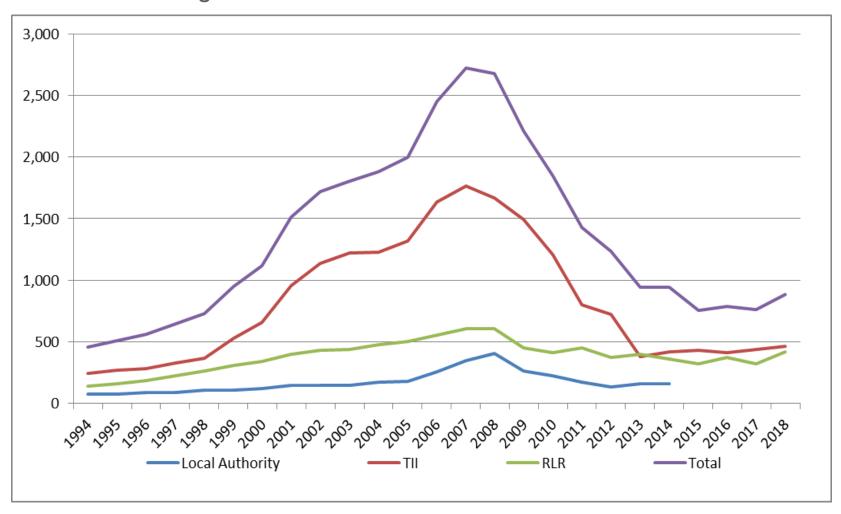
Road Class	% Length	Length (m)
N	5.42%	5,412,847
NP	2.72%	2,717,234
NS	2.70%	2,695,613
R	13.15%	13,124,058
R	13.15%	13,124,058
L	81.43%	81,292,961
LT	24.18%	24,138,459
LP	23.83%	23,788,815
LS	33.42%	33,365,687
Grand Total	100.00%	99,829,867



2.5 time EU average A lot of road!

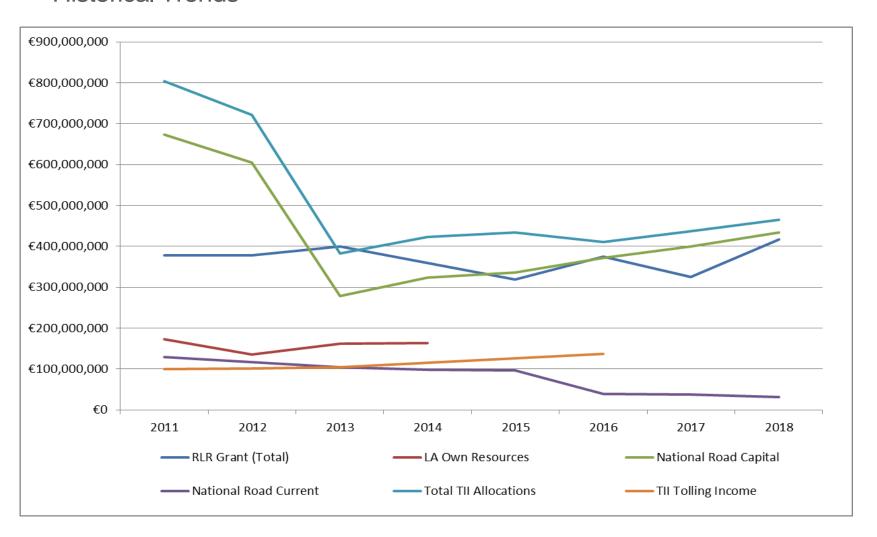


Historical Funding Trends





Historical Trends





Maintenance & Rehabilitation Needs

Surface Dressing

Minimum length of required per year is 4,700 km i.e. 5% of network. Achieve just over half of target in 2013

Strengthening

Minimum length of required per year is 4,700 km i.e. 5% of network. Achieve significantly less than strengthening target in 2013

Steady State Expenditure (2014 - SFILT)

- €580m (2014)
- €630m (2018)
- Is this enough?
- Backlog?



Maintenance & Rehabilitation Needs

Other Assets

Bridges (30,000) ?

Public Lighting?

Traffic Equipment?

Footways?

Drainage?

Backlog?

Claims?

SFILT being updated with PLUTO project



Road Management

Success Factors (World Bank)



PROCESSES - PEOPLE - TECHNOLOGY - FUNDING

For Ireland this means: -

Processes – Guidelines / Circulars mandating setting out requirements for use

People – Setting up the RMO as support office / centre of excellence

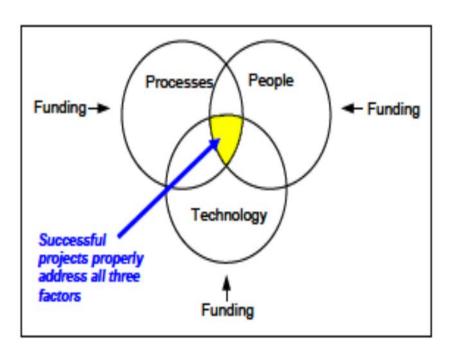
Technology – MapRoad

Funding – RLR Investment Programme

Will ultimately fail: -

- If implemented in an environment where there are no people to run it,
- where the business processes are not in place to utilise it (very nice system in the corner!).

For an RMS to be successful, the importance of each component must be clear.



Pavement Management



The process of planning the maintenance and repair of a network of roadways in order to <u>optimise conditions</u> over the entire network.

Incorporates <u>life cycle costs</u> into a more systematic approach

A <u>Pavement Management System (PMS)</u> is a software planning tool used to:

- aid pavement management decisions.
- model future pavement deterioration due to traffic and weather
- recommend maintenance and repairs to the road's pavement based on the type and age of the pavement and various measures of existing pavement quality.

Research has shown that it is <u>far less expensive</u> to keep a road in good condition than it is to repair it once it has deteriorated. This is why pavement management systems place the priority on <u>preventive maintenance</u> of roads in good condition, rather than reconstructing roads in poor condition.

Pavement Management Process



A pavement management approach is a process that consists of a number of typical tasks / steps to include:

- Asset Inventory / Definition
 - Identifying pavement conditions, identifying good, fair and poor pavements.
- Prioritisation
 - Assign importance ratings for road segments, based on traffic volumes, road functional class, and community demand.
- Condition Prediction & Analysis
- Work Planning & Scheduling
 - maintenance of good roads to keep them in good condition.
 - repairs of poor and fair pavements as remaining available funding allows.

Pavement Management - Objectives



So far developed and implemented a system to record: -

- Works on the Road Network such as: -
 - Road Openings (Licensing System)
 - Pavement Surface Maintenance / Improvement Works
- Condition of the Network for a range of parameters (visual and mechanical)
- Inventory (surface, geometry, etc.)
- Speed Limits

Technology / IT (LGMA)



MapRoad

Integrated, Geographical Information System (GIS) enabled, Roads Management System.

MapRoad has five main elements:

- Desktop System (original system)
 - Bridges / Collisions / Hazards
 - Mechanical Data Viewer (2009)
- 2. Web Based Interface (since 2010)
- 3. Licensing system
- 4. Project /Financial Module,
- 5. Mobile Apps

Publically owned WEB based

Open source software solutions where possible.









Pavement Surface Condition Index (PSCI)



Condition Rating Index (2012 & 2013) – 3 Manuals
Project Level & Network Level implementation (RW 21/2014)

	5.0	
Overall Rating	Primary Rating Indicators*	Secondary Rating Indicators*
10	No visible defects.	Road surface in perfect condition, like new.
9	Less than 10 % of surface with surface defects ¹	Road surface in very good condition.
8	10% to 30% of surface with surface defects ¹	Little or No Other defects.
7	Greater than 30% of surface with surface defects ¹	Little or No Other defects. Old surface with aged appearance.
6	Less than 20% of other Cracking! may be present. Patching generally in good condition. May be out of shape requiring some reduction in driver speed.	Surface defects ¹ may be present. No structural distresses ³
5	Greater than 20% Cracking* present. Patching generally in fair condition. Out of shape requiring reduction in driver speed. Very localised structural distress* (< 5 sq. m.of surface) may be present.	Surface defects [†] may be present.
4	Smctural Distrest present Rutting or Alligator Cracking for 5% to 25% of surface. Short lengths of Edge Breakup Cracking. Small number of Potholes.	Other defects may be present.
3	Significant areas of Structural distress?. Rutting or Alligator Cracking for 25% to 50% of surface. Significant continuous lengths with Edge Breakup Cracking. Frequent Potholes.	Other defects may be present.
2	Large areas of Structural distress? Rutting or Alligator Cracking for over 50% of surface. Severa Rutting (over 75 mm deep). Extensive Patching in very poor condition. Many Pothologies.	Very difficult to drive on.
1	Severe Structural distress ³ with extensive loss of pavement surface. Road Disintegration of surface. Many large and deep Potholes. Patching in failed condition.	Severe Deterioration Virtually undriveable.

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

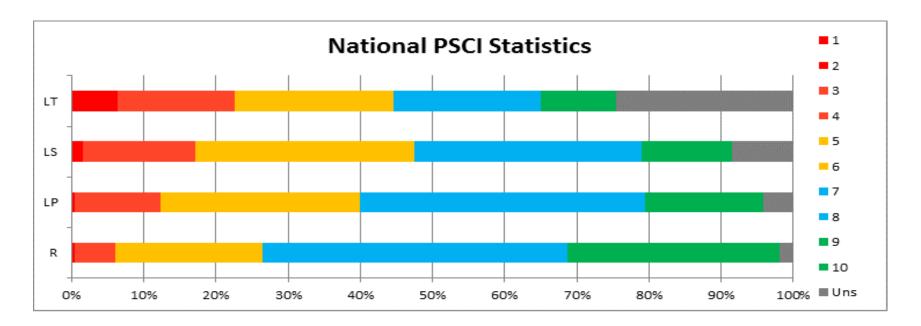
Condition <=> Rating <=> Treatment <=> Money

Pavement Surface Condition Index (PSCI)



Condition Rating Index (2012 & 2013) – 3 Manuals
Project Level & Network Level implementation - RW 3/2018 (previously RW 21/2014)

	1	2	3	4	5	6	7	8	9	10	Uns
R	0%	0%	0%	5%	6%	14%	22%	20%	22%	8%	2%
LP	0%	0%	1%	11%	8%	20%	24%	15%	13%	4%	4%
LS	1%	1%	3%	13%	11%	19%	21%	10%	9%	3%	8%
LT	4%	3%	4%	12%	9%	13%	14%	7%	8%	2%	25%
Total	1%	1%	2%	11%	9%	17%	20%	12 %	12%	4%	11%



Key Users / Benefits



Pavement Surface Condition Index (PSCI)

Extensively used for Managing Works / Funding (LA / RMO /

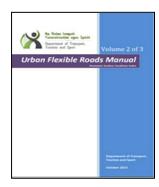
DTTAS / DPER)

but also by: -

- C&AG / Oireachtas PAC
- National Oversight (NOAC / DTTAS)
- Timber Transport
- Milk Collection
- Construction Impacts
- Road Openings

Ubiquitous

However this raises issues on data quality / training





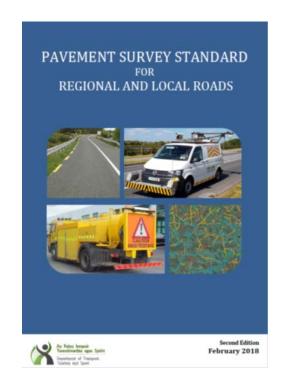


Pavement Management Survey Regime



Pavement Management Survey Regime Review

- A lot of the building blocks are in place
- Essential to have an effective survey regime for an effective PMS (bread & butter)
- In place since 2014 as Circular RW 21 and followed on from earlier back to 2010

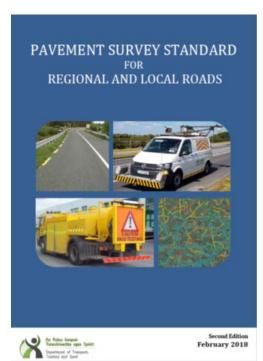


Pavement Management Survey Regime



Pavement Management Survey Regime Review

- How does PMS and Survey Regime Stand up / compare to others?
- What are other Pavement Management Systems doing?
- Is what we have effective?
- Are we achieving the objectives we should be?
- Where should we be going next?

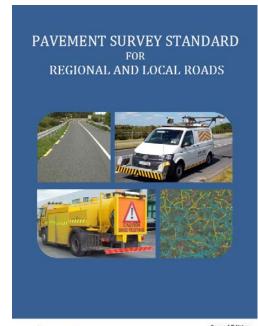


Pavement Management Survey Regime



New issued February 2018 (Circular RW 03) Objectives

- -Close out outstanding tasks (History of Works / Inventory)
- -Improve efficiency of survey regime (mechanical / Visual)
- -Improve context/background
- -Improve alignment with current/emerging/future requirements
- -Address Quality Control
- -Address Training
- -Define role of RMO more clearly for surveys and quality control





Second Edition February 2018

Road Licensing System

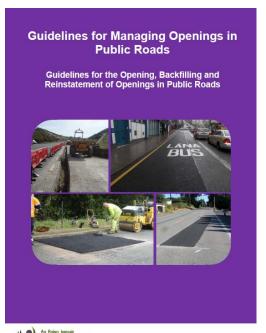
MapRoad Licensing system usage

Guidelines applicable to all road authorities and to all road openings.

409 Organisations, 1650 individual Users (1000 Applicant Users/ 650 Authority Users)

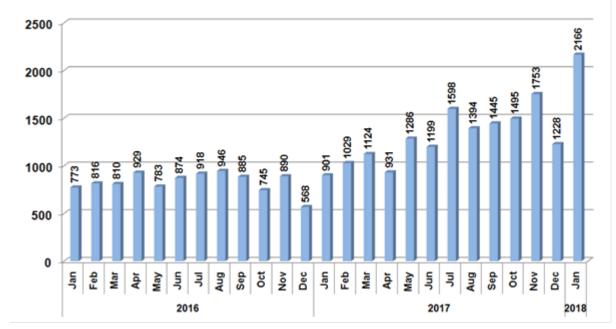
Very large task, still not complete

Currently Road Openings but will expand to others





MRL Applications per Month 2016-2018







Main Areas – to date

Funding / Grants

Road (Asset) Management

Road Licensing



Pavement Management Next Steps

User Improvements

National Level

- Monitor and Track Performance (Indicators / KPI's etc.)
- Greater linkages to funding

Network Level

- Pavement Management Strategies
- Planning Pilots

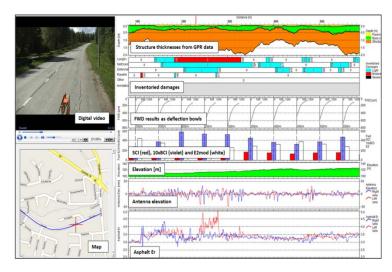
Needs to be Part of the Day Job (not something nice)

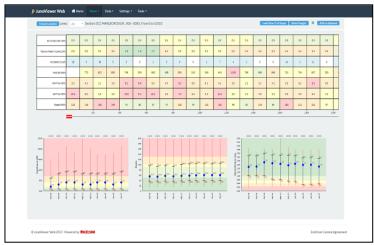


Pavement Management Next Steps

Project Level

- Decision processes for maintenance / improvement works
- Better decision making using data such as with 'strip maps'
- Works recording







Pavement Management Next Steps

Project Level
— Works recording

						Streng	gthenin	ig Repo	rt Sun	ımary Sl	neet						
Location	Mangan					Road No.:	L6116-1										
Code: 219832				Category: LP			Start Date:	08/09/2016									
Code. 213032			Category, La						,,								
		Prep	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day10	Day 11	Day 12	Day 13	Day 14	TOT
Road	Length	1,100.00	1,100.00														1100
	Width	5.50	5.50														
	Area	6,050.00	6,050.00														6050
Preparation																	
daterials	Total Cost	€16.763.68		_					_			_		_			€16.763
daterials fired Plant	Total Cost	€7,913.28											_				€7,913
ouncil Plant	Total Cost	€2,060,80															€2,060
abour		€19,620.63															€19,620
		646,358.39															€46,358
	47m ²	7.66															7.
	·					-			_				-				
Stre ngthe nir	107																
daterials	Total Cost		69,503.25	65.460.70	€2.649.15	€0.00	€0.00	€0.00	€0.00	60.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€17.613
daterials fired Plant	Total Cost	-	€,503.25	€,460.70 €333.23	€2,649.15	€0.00	60.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	60.00	€0.00	€0.00	€17,613
Jouncil Plant	Total Cost	-	65.576.00	63.831.20	€.578.40	60.00	60.00	60.00	60.00	€0.00	60.00	60.00	60.00	60.00	60.00	€0.00	€13.985
abour	Total Cost	-	€1.966.31	£1.964.01	€2,180,75	€27.95	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	65.135
200000	TOTAL COM		£17.045.56	€12.589.14	€8,781.96	627.95	€0.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	€0.00	€8.44
	€m²		a., je . o o o				-		-	-			-	-		-	6.
	em								_				_	_			_
Surface Dres	vina																
Bitumen	Total Cost		€0.00	€0.00	€0.00	€14,654.28	€0.00	€0.00	€0.00	€0.00	€0:00	€0.00	€0.00	€0.00	€0.00	€0:00	€14,654
Chippings	Total Cost		€.00	€0.00	€.00	€5,048.04	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€5,048
Hired Plant	Total Cost	-	€0.00	€0.00	€.00	6853.83	€0.00	€0.00	€0.00	€0.00	€0.00	€.00	€0.00	€0.00	€0.00	€0.00	6153
Council Plant Labour	Total Cost Total Cost	\vdash	€0.00	€0.00	60.00 60.00	61,376.08 61,990.14	€0.00	€0.00 €0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€1,376
Latoour	Total Cost		€0.00	60.00	€0.00	€6,522.37	40.00	€0.00	60.00	€0.00	60.00	€0.00	60.00	€0.00	€0.00	€0.00	€6,522
			4	4000	40.00	C00,322.37	40.00	0.00	40.00	4000	40.00	₩	4.00	40.00	₩	40.00	4
	€m²																- 4
TOTALS	_																
IOIALS																	
	PREP	646,358.39															666,358
	STR		€17,045.56	€12,589.14	€8,781.96	€7.95	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€8,44
	SD		€0.00	€0.00	€0.00	€6,522.37	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€26,522
	TOTAL.	€6,358.39	€17,045.56	€12,589.14	€8,781.96	€26,550.32	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€0.00	€111,325
	€/m²	7.66															18
	Percentage		%														
	ı	Plant	26.50	l													
	1	Labour Materials	24.93 48.58	l													

					219832	Road No.	
	Mangar						
Lengt	16/05/2016			Category:	LP Start	Easting	Northing
Lengt 110			Width (m)	Area (Sq. m) 6050.00	Start Finish	16/05/2016	
MATERIALS	00	3	.30	00,000	rimsn		
MATERIALS		Ow	intity	p.	ice		Total
Clause 804 (Roads)	tone) - ex quarry	130	Tonnes @	€10.15	Per Tonne		€1,319
Clause 804 (Roads)			Tonnes @	€13.11	Per Tonne	-	60
Drainage Stone (Ro	oadstone) - ex quarry		Tonnes @	€8.91	Per Tonne	-	€0
100mm down Ston	ie (Roadstone) - delive		Tonnes @	€8.30	Per Tonne		60
225mm Twinwall	Pipe	125	Length(s) @	€31.98	Per 6 metre length	-	€3,997
300mm Pipe		12	Length(s) @	€54.00	Per 6 metre length	-	€648
Bitumen		2600	Litres @ Tonnes @	€0.58	Per Litre	-	€1,508
Chippings		12	Tonnes @	€27.14 €167.50	Per Tonne	-	€325
450 mm Pipes		50			Per xx	-	€8,375
Grates 750mm		2	Ite m	€295.00		-	€590
Grates 600mm	Rate of Spread	12	Item	€222.00		TOTAL	€2,664 €16,763
HIRED PLAN			0.02	Tonnes/Sq m. COUNCIL PLANT		IOIAL.	€10,703
Machine	Hours	Rate	Total	Machine	Hours	Rate	Total
JCB	335	€20.00	€6,700.00	Lorry 100	32	€64.40	€2,060
JCB 2		€20.00		Lorry 101		€64.40	
Small Roller (rate/day)	30	€30.00	€900.00	Lorry 102		€64.40	
Tractor and Trailer Tractor and Trailer		€20.00 €20.00		Lorry 103 Lorry 104		€64.40 €64.40	
Truck		€59.29		Lorry 105		€64.40	
Truck		€59.29		Lorry 112		€64.40	
Tractor and Water Tank		€20.43		Lorry 113		€64.40	
Hedgecutter		€25.00		Lorry 106		€58.90	
Combi Unit (per day) 6T dumper (per day)		€1,100.00 €31.56		Lorry 107 Vibrating Roller 224		€58.90 €65.00	
or dumper (per day) Jet cleaner (per hour)		€70.93		Grader 234		€75.00	
Sweeper	8	€39.16	€313.28				
	Total Hired	Plant	€7,913.28		Total Cour	ncil Plant	€2,060
LABOUR							
Name	Grade	Rate		T x 1.5 (no. of hours)	T x 2 (no. of hours)		Total
MJ Rossiter Mick Nolan	GSS. Foreman	£1.38 £15.62	32 315			-	€68-
AMA AMAN	Foreman	415.62 415.62	.,15			-	64,91
	Foreman	£15.62				-	60
James Kerns	Pickup Driver	£15.29	315			-	€4,815
	Pickup driver	G5.29				-	60
Биг Соону	Pickup driver GO	615.29 614.56	315			-	€4.58€
, comy	GO	£14.56	31.5				64,300
	GO	£4.56				-	€0
					PRSI/Holidays	@30.75%	€4,614
					Other allowances Total Lab	0.00%	€19,620
SECTION 2	- SUMMAR	Υ			Total Lab	our Cost	€19,62
Materials		€16,763.68					
Hired Plant		€7,913.28	l				
County Council Plant		€2,060.80	1				
Labour		€19,620,63	ı				

		STR	ENGTHE	NING REI	PORT		
SECTION A	- Strengthe						
DAY Location	Mascon			Code	219932	Read No.	L6116-1
Date	Date: 08/09/2016			Category	LP	Easting	Northing
Lengt	h (m)	Average	Width (m)	Area (Sq. m) 6050.00	Start	08/09/2016	
MATERIALS	10	- 5	50	6050.00	Finish		
MATERIALS		Qui	utity	D	ice		Total
Clause 804 (Roads)	me) - ex quarry	594	Tounes @	610.15	Per Tonne	-	66,029.
Clause 804 (Roads)	tone) - delivered	265	Tonnes @	613.11	Per Tonno	-	6,64
Drainage Stone (B)	oadstone) - ex quarry e (Roadstone) - delive		Tounes @ Tounes @	68.91 68.30	Per Tonne Per Tonne	-	601
225mm Twinwall	Pipe		Longh(c) @	631.99	Per 6 metre length		604
300mm Pipe			Leagh(s) @	654.00	Per 6 metre length		601
Bitumen			XX 9	60.58 627.14	Per xx	-	601
Chippings			X 0	6001	Per sx		601
Readmarking			lten	60.00		-	
	Rate of Spread		0.14	Топпец'я д т.		TOTAL	69,500.
HIRED PLAN	Hours	Rate	Total	COUNCIL PL	ANT	Rate	
3	9.5	620.00	£170.00	Lorry 100	10	664.40	C644.1
B2		620.00		Lony 101	10	664.40	66441
mall Rollier (rate/sley) sector and Trader sector and Trader sech	1	630.00 620.00	€30.00	Lony 102 Lony 103	10	664.40 664.40	66441
actor and Trader		620.00		Lony 104		664.40	
nek nek	\vdash	659.29 659.29		Lony 105 Lony 112		66440 66440	
sactor and Water Tank	8.5	620.43	€173.66	Lony 113		664.40	
odgeostter ombi Unit (per day)		625.00		Lony 106		658.90	
onds Unit (per day) (dumper (per day)	_	61,100.00 631.56	#VALUE	Arctic Truck Vibrating Roller 224	10 10	690.00 665.00	6650.
dumper (per day) cleaner (per hour)		670.93		Grader 234	10	675.00	6750.
coeper	TetalHired	639.16 Plant	#VALUE	Arctic truck	10 Total Com	680.00 scilPlant	68001
ABOUR	, constitued		PIALLS!		, seed Com		40,0763
ame CER	Grade	Rate	Normal Time	T x 1.5 (no. of hours)	T x 2 (no. of hours)		Total
Racidor	GSS	421.38 415.62	8	1	0.5	-	6224
ick Notice www.Karranarsha	Foressan Foressan	45.62 45.62	8	-	0.5	-	£1633
ur Hogan	Foresan	45.62	8		0.5		
ick Roddy	Foreman Pickup Driver	45.62 45.29	8	-	0.5 0.5		£164.1
is Certify	Pickup Driver	45.29	8	1	0.5	-	€1603
nitip Flynn	Pickup Driver	4539 4456	8	-	0.5	-	6160.
no Conno	GO						
a Const	GO	6456	8	i	05 PRSI/Holidays	638.75%	£152) £462.
ITUMEN	- Surface D			CHIPPINGS	Other allowances Total Lab	0.00% our Cost	6152) 6462, 600 61,9663
SECTION B			i	Source	Other allowances Total Lab	0.00% our Cost	61,966.3
Type Seaso Quantity (litro)	Cationic S Ritman Sq		8	Source Type Quantity	Other allowances Total Lab	Catery 6/10mm	Coury 10/14mm
TUMEN Type Source Quantity (litror Rate (per litro	Cationic S Ritman Sq 60.58		8	Source Type Quantity Rate	Other allowances Total Lab	0.00% our Cost	61,966.3
TUMEN Type Source Quantity (Store Rate (per litre Tota	Cationic S Ritmanu Su 60.58			Source Type Quantity Rate Total	Other allowances Total Lab Supplier 2,9mm 625,00 40.00	Catery 6/10mm	Coury 10/14mm
TUMEN Type Seaso Quantity (Street Rate (per litre Tota IIRED PLAN)	Cationic S Ritmanu Su 60.58			Source Type Quantity Rate	Other allowances Total Lab Supplier 2,9mm 625,00 40.00	0.00% our Cost Cacry 6/10mm 627.14 60.00 Rate	Coury 10/14mm
Trumen Typy Source Quantity (filtere Quantity (filtere Tota IIRED PLAN) Jachine II	Cationic S Ribanare Su 60.58 60.00	ressing		Source Type Quantity Rate Total COUNCIL PL Machine Lony 100	Other allowances Total Lab Supplier 2,Vents (25.00 6000 ANT	0.00% our Cost Catery 6/10mm 627.14 60.00 Rate 644.40	Cotry 10/14mm 6 27.14 62.00
Trumen Typy Source Quantity (filtere Quantity (filtere Tota IIRED PLAN) Jachine II	Cationic S Ribanare Su 60.58 60.00	ressing		Secure Type Quantity Exte Total COUNCIL PL Machine Lenry 100 Lenry 101	Other allowances Total Lab Supplier 2,Vents (25.00 6000 ANT	0.00% our Cost Cacry 6/10mm 627.14 60.00 Rate	Catery 10/14mm 6 27.14 60.00
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TUMEN Typy Source Quantity (filter) Rate (per litre Tota IRED PLANT schling	Cationic S Ribanare Su 60.58 60.00	Rate 62010 64056		Senare Type Quantity Quantity Rate Total Larry 100 Larry 101 Larry 101 Larry 101 Larry 101 Larry 105 Larry	Other allowances Total Lab Supplier 2,Vents (25.00 6000 ANT	0.00% Our Cord Concy 6/30scm 6/254 600 Rate 664.49	Catery 10/14mm 6 27.14 60.00
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TUMEN Type Season Season Quantity (filme Eate (per like Eate (per	Cationic Signature Signatu	Rate 520.10 640.56 C50.16		Senerce Type Quantity Quantity Rate Total Total COUNCIL PL Machine Leavy 200 Popular Council Spazuer 700 Popular Gottler Phoenic Gottler Dubber Railer	Other allowances Total Lab Superior Advances 425.00 425.00 425.00 Honors Honors	0.0075 0.	Catery 10/14mm 6 27.14 60.00
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TUMEN Type Season Season Quantity (filme Eate (per like Eate (per	Catalania (in America de Catalania (in America	Rate	Total	Senerce Typy Quantity Quantity Rate Tatal Tatal Machine Leavy 200 Leavy 202 Leavy 202 Leavy 202 Leavy 205	Other allowances Total Lab Supplier Abress ANT Blosses Total Cont	0.0075 0.	CO. Total Co.
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ABOUR AB	Calcase In	Past Ras GRIS G	Total	Newson Measurement of the Community of t	Other pitters and the control of the	5,000% SOUTH	\$1,965. Categor 1074eau 1074e

Needs to be Part of the Day Job (not something Nice)



Range of other areas in Road Asset Management: -

Bridges

Footways (RMO)

Collisions / Accidents

Public Lighting (RMO Cork)

Traffic Data - draft

Speed Limits (with review)

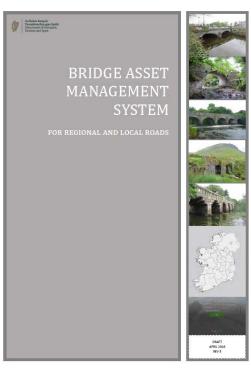


Bridges:

Local Authority Working Group established in 2016 in conjunction with Kildare CoCo.

Key priority areas are: -

- Guidelines (drafted)
 - Basic Inventory
 - Maintenance Inspection
 - Engineering Inspection
- Software (in development)
- Procurement
- Training (to support guidelines)





Road Schedule:

Last updated in 2013 Changes since

Issues arising

- Different types of Road
- Prime 2
- Dual Carriageways
- Junctions / Spurs
- CAV



Guidelines

for

Classification and Scheduling of Roads

In Ireland

September 2013

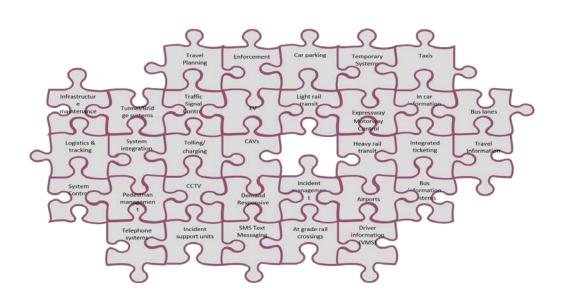


Connected and Autonomous Vehicles

Part of ITS

Stepped Implementation - jigsaw

Testing in Ireland







Connected and Autonomous Vehicles

Impact / dependent on infrastructure

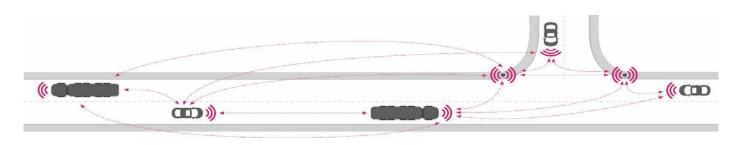
- data
- design standards
- traffic
- maintenance

New Infrastructure

ITS (physical / cloud)









Range of other areas for road licensing: -

Road Openings (Current)

Section 254 permits

- Tables & Chairs
- Hoardings / Scaffolding

Abnormal Loads

Events

Guidance and Standards (DTTAS)



Department Guidelines

- Guidelines for Managing Openings in Public Roads (Purple Book) (2015 & 2017)
- Guidelines for Road Drainage
- Guidelines on the Depth of Overlay to be used on Rural Non National Roads (Orange Book) (2014)
- IPAG (Irish Pavement Asset Group) Guidelines (2015)
- Pavement Surface Condition Index (PSCI) (3 volumes) (2012 & 2013)
- Guidelines for Scheduling of Roads in Ireland (2012 & 2013)
- Standard on Pavement Management Surveys (2014 & 2018)

On DTTAS & RMO Websites















Institutional Structures

Road Management Office

- Pavement Management
- Road Licensing
- Public Lighting

DTTAS Support Office

- Bridges
- Collisions

Asset

- Road Infrastructure
- MapRoad
- Data

Other Gains

C-ITS / CAV



Benefits

- Better maintained / managed road asset
- More efficient delivery on expenditure
- Reduced PL claims

Other areas

C-ITS/CAV



Thank You

John McCarthy johnmccarthy@dttas.gov.ie 8th January 2018