RSC

Railway Safety Commission

RSC Annual Report 2009

Railway Safety Commission

Annual Report 2009

Contents

Foreword

As required under section 28 (3) of the Railway Safety Act 2005, we present this, our fourth annual report to the Minister for Transport. This report provides an overview of our functional performance, corporate governance and administration and of the safety performance of the railways we regulate.

We had a very positive start to 2009 with five new inspectors joining the Railway Safety Commission including the Railway Accident Investigation Unit, three to the former and two to the latter.

Similar to the last three years, a significant proportion of our time was taken up with approvals of new infrastructure and rolling stock, as the implementation of Transport 21 continues. I am pleased to advise that in 2009 there was an increase in the level of audit and monitoring across all railway undertakings.

Accident trends are detailed in Appendix 2 and 3. There were two incidents in particular that could have had much more serious consequences, the first being the partial collapse of the Broadmeadows Viaduct just north of Malahide Station and the second being the Dublin Bus / Luas tram crash on O'Connell Street. Fortunately there were no fatalities.

A significant amount of our workload is driven by the European agenda. In the European context, we are a small safety authority overseeing a small national railway network. However, as an involved party, we must influence legislative developments through direct and judicious involvement. We continue to participate actively at working groups and policy meetings of the European Railway Agency and, in association with the Department of Transport, at European Commission level.

I wish to thank all the staff of the RSC for their commitment and support during 2009.

Mary Molloy

Mary Molloy
Deputy Commissioner for Railway Safety

1. The Railway Safety Commission

1.1. The origin and role of the Railway Safety Commission

The Railway Safety Commission (RSC) was established on 1st January 2006 under provision of the Railway Safety Act (RSA) 2005, with responsibility for railway safety regulation and investigation. In the context of the European Directive 2004/49/EC (Railway Safety Directive), the RSC is the National Safety Authority.

In 2008, additional regulations came into effect (S.I. No 61 of 2008), which further defined the position and role of the RSC in Irish law and amended some provisions of the 2005 Act to implement EU directives.

Collectively, this makes the RSC responsible for approving new rolling stock and infrastructure, and for regulating the industry to ensure it is able to manage its own risk effectively. The RSC also co-ordinates and encourages railway safety initiatives between the industry and external stakeholders. Finally, the RSC is the National Safety Authority under European Law and is responsible for ensuring the implementation of various technical and procedural safety related changes to harmonise the Irish network with the European standard.

1.2 Structure and Organisation

The RSC is a small, professional organisation with a flat reporting structure which advocates and facilitates free-flow of information and ideas, encouraging consultation and creative thinking. This complements our purpose of promoting excellence in railway safety. It also provides us with the flexibility we need to respond effectively to immediate and unpredictable work demands, and to accomplish the structured tasks within our business plan.

There is currently six technical staff working in the RSC. We have approval for two further inspectors but because of the Department of Finance embargo on recruitment these posts are on hold. We have two staff working in the administration function. The Commissioner retired at the end of 2009. A new Commissioner is expected to be appointed early in 2010.

1.3 Railway Accident Investigation Unit

To meet the requirements of Article 18 of the Railway Safety Directive, the Railway Safety Act provides for the establishment of a Railway Accident Investigation Unit (RAIU) within the RSC with shared administration but functionally separate appointment and reporting arrangements. In 2007, the Chief Investigator of the RAIU was appointed by the Minister for Transport. In 2009, the Minister for Transport announced the establishment of a multi-modal transport accident investigation body. While establishing legislation has yet to be passed, it is planned that the RAIU will be part of this new body. Until such time however, the RAIU will retain its current status within the RSC.

Investigation by the RAIU is causal, that is to say it seeks to identify the full facts of an incident and why it occurred with a view to preventing recurrence. The Railway Safety Directive specifies, in loss and injury terms, a minimum threshold above which investigation is mandatory. Investigation of incidents of lesser impact is discretionary.

In 2009 the RAIU initiated eight formal investigations into incidents and accidents on the railway.

2. Functional Performance

2.1 Introduction

We have three main areas of functional performance –i) approvals, ii) audit, monitoring and enforcement, and iii) international and European affairs.

2.2 Approval activities

2.2.1 Infrastructure

There was considerable activity in the area of Infrastructure approvals during 2009 including the commissioning of significant projects. The re-opening of the line from Glounthaune to Midleton was commissioned in July. The Kildare Route Project which involved four-tracking of the railway between Le Fanu Road, near Inchicore in Dublin and Hazelhatch in Co. Kildare, was commissioned in December. Also in December the LUAS extension of the Red Line to the O2 was commissioned. Work progressed through the detailed design stage on the other LUAS extensions; line A1 between Belgard and Saggart, and line B1 between Sandyford and Cherrywood. The Western Rail Corridor was approved through detailed design and limited operations for driver training. Appendix 4 details approvals granted during 2009.

2.2.2 Rolling Stock

The next generation of LUAS vehicles, the Citadis 402 vehicle, was approved for passenger service. The rolling stock vehicles for Metro North were approved for concept stage. Limited acceptance was given to the Irish Steam Preservation Society to operate Barclay steam locomotive number 2265, limited acceptance was also given to the West Clare Railway to operate a steam locomotive. Appendix 4 details approvals granted during 2009.

2.2.3 Guidance

The RSC continued to produce guidelines for railway undertakings and third parties, and the following were completed during 2009:

- RSC-G-014: a guideline for the emergency services
- RSC-G-020: a guideline for the safety assessment of new infrastructure signalling works.
- RSC-G-021: a guideline to assist in the logging of all rail vehicles into the European Vehicle Register.

2.3 Audit, Monitoring and Enforcement

As in previous years our auditing and monitoring activities derive from five principal sources:

- Complaints and representations by, or on behalf of, passengers;
- Industry safety concerns, typically arising from accidents and incidents;
- The need to ensure that railway undertakings are implementing their approved safety cases;
- The need for ongoing assessment of the performance of all industry safety duty holders, through inspections and accident tracking;
- Reactive monitoring.

2.3.1 Public representations

The public, passengers or others, are our principal customers and their railway safety concerns are always given the highest attention. The RSC try, wherever possible, to deal with the matters directly, however, when necessary we seek additional information from the duty holder in order to provide a full and comprehensive response.

In 2009, we received 31 direct or indirect public representations relating to a range of heavy and light rail infrastructural and operational matters, an increase on the number received in 2008 (22). None gave immediate or specific cause for safety concern but all were investigated and responded to. The RSC continues to track representation topics on an ongoing basis to identify any recurrence or trends that might indicate a need for further attention.

Representations in 2009 were more varied than previous years, ranging from audibility of door alarms to general station safety. There was an increase in the number of complaints or representations received by the RSC regarding Iarnród Éireann's (IÉ) trains, all of which were responded to with the assistance of IÉ.

2.3.2 Industry Concerns:

The RSC maintains formal and informal contact with our peer regulatory and investigatory bodies in Europe. A number of accident reports and safety

2. Functional Performance

advisory notices by these peer organisations that were deemed relevant to Railway Undertakings here were circulated by the RSC, such as the safety notice following the incident in Viareggio, Italy.

There were three noteworthy incidents in 2009, the first being the partial collapse of the Broadmeadows Viaduct just north of Malahide Station and the second being the Dublin Bus / Luas tram crash on O'Connell Street. The third was a derailment at Wicklow. Fortunately there were no fatalities as a consequence of these incidents. The RSC are undertaking a compliance audit into the Broadmeadow Viaduct incident and the Wicklow derailment and are tracking the Veolia Inquiry into the O'Connell Street collision.

2.3.3 Compliance Auditing:
In 2009, the RSC implemented a monitoring programme that included two compliance audits of IÉ's Safety Management System. The first of these focused on the management of rail defects and the second concentrated on the management of organisational change. Both resulted in recommendations being made and IÉ have or are implementing these. The RSC also undertook a review of train despatch equipment on the DART network which again identified a number of issues that have been addressed.

The RSC also audited Veolia on their management of rail defects on the Dublin Light Rail system (Luas). Again a number of recommendations were made and Veolia, in conjunction with Alstom and the Railway Procurement Agency (RPA), are addressing these.

The RSC continues to monitor the implementation of recommendations at regular meetings with the railway undertakings.

2.3.4 Inspections & Accident Tracking
In-service inspections of all heritage railways currently operating were conducted. A number of inspections of IÉ and Veolia were also carried out focusing on:

- Illegal dumping;
- Passenger flow and exit validation at stations;
- Third party Works;
- Tramway infrastructure and trespass;

Where the occasion permitted, inspectors took the opportunity to travel in locomotive cabs to assess operations and the condition of the permanent way.

2.3.5 Reactive monitoring
Reactive monitoring, site inspection and compliance investigation/audit took place in relation to:

- Collision at Waterford;
- Gate strikes at Noggus Bord na Móna industrial railway level crossing
- Collapse at Broadmeadow viaduct
- Track spread at Tralee heritage railway
- Landslide and derailment at Wicklow

2.4 Enforcement activity

Section 7 of the RSA 2005 provides for a number of enforcement measures, ranging from requesting an Improvement Plan to a Prohibition Notice. In 2009 an Improvement Notice was issued to IÉ in relation to random drug and alcohol testing of Safety Critical Workers, a requirement under the 2005 Act.

2.5 International and European Affairs

The RSC is represented at the Railway Interoperability and Safety Committee meeting hosted by Directorate General Transport and Energy (DG-TREN) in Brussels. Four two-day meetings and associated workshops were attended in 2009.

During 2009, the RSC prepared the notifications of National Safety Rules for the Irish network to the European Commission. These are the legal safety rules which are made available to any incoming operator. Work also commenced in identifying the technical rules of the network for publication in 2010.

Substantial progress was made in the establishment of a National Vehicle Register, where every operating vehicle on the network must be issued with a European format number.

Joint consultations were held with the Department of Transport and IÉ on the

transposition of the Train Driver Licensing Directive.

2.6 Road Rail interfaces

Safety at Road Rail Interfaces continues to be of concern. The RSC chairs the Road Rail Safety Working Group (RRSWG) which offers opportunity to maintain disquiet on this issue through its members – railway undertakings, road authorities, Department of Transport, road hauliers and the Gardaí. The group met three times during 2009. In addition to these meetings the group also organised awareness meetings around the country to get together with engineers and managers from the local authorities and the railways to communicate to them our work in the group and to discuss particular areas of concern at the locations visited. Three such meetings took place in 2009, in Mullingar, Limerick and Castlebar.

As stated in the 2008 annual report, the RSC completed research in the area of Bridge Strike prevention techniques. A number of recommendations were made and directed towards all relevant stakeholders including the RSC, IÉ, the Road Safety Authority (RSA) and the Irish Road haulage Association (IRHA). These recommendations have been reviewed by the individual organisations and their implementation is being monitored through the RRSWG.

3. Assessment of Duty Holder Safety Performance

3.1 Introduction

The safety performance of the duty holders in the Republic of Ireland is considered for the four principal railway sectors that the RSC regulates, namely heavy rail, light rail, industrial systems and the heritage railways. Each railway undertaking is obliged to notify railway incidents and accidents to the RSC. This data is used for assessing duty holder safety performance among other things.

3.2 Iarnród Éireann Network

The IÉ network in service consists of 1665 Route Kilometers. The main changes to the system in 2009 were:

- Commissioning of the line between Glounthaune and Midleton;
- Commissioning of the four tracking between west of Inchicore and Hazelhatch.

Passenger journeys dropped during 2009 by 14.9%, from 44.6 to 38.8 million.

Safety performance statistics are presented in detail in Appendix 2. Improvements recorded included a decrease in the number of train collisions with motor vehicles or gates at level crossings, fire or smoke on locomotives or other rolling stock, parapets of railway bridges being struck by road vehicles and train collisions with animals.

There was a significant increase in the number of bridges under the railway being struck by road vehicles. There was also an increase in the number of broken rails. The most serious event in 2009 was the collapse of Broadmeadows viaduct on the 21st August 2009. This has been subject to investigation by the RAIU and compliance audit by the RSC. The subsequent derailment south of Wicklow has prompted further consideration of how structures are managed.

3.3 LUAS

The LUAS urban light railway system consists of two separate double-tracked lines. The Green line is 9 km long and runs from St. Stephen's Green to Sandyford: 90% on dedicated right-of-way. The Red line is 16.6 km long, running from Tallaght to The Point (Dublin docklands): 60% on dedicated right-of-way

The total tram-kilometres run in 2009 was 2.695 million (with 1 million on the Green Line and 1.7 million km on the Red Line), a decline of about 2% compared to 2008. 25.4 million passenger-journeys were completed in 2009, a drop of about 7% compared to 2008.

The main changes to the system in 2009 were:

- Commissioning of 402 trams and approval for passenger service in September 2009;
- Opening of the C1 extension to passenger service in December 2009;
- Completion of work on the Red Cow roundabout in December 2009.

The following events were recorded in passenger service during the year 2009:

- 1 major road traffic accident
- 22 minor road traffic accidents
- 18 minor contacts with a pedestrian
- 1 derailment
- 1 tram failure

The number of road traffic accidents (RTA) significantly decreased compared to 2008, and the average tram-kilometres run between RTA is now over 100.000 kilometres. However, a major RTA occurred on 16th September 2009 when a tram was in collision with a Dublin Bus double-deck city bus at the O'Connell Street junction, resulting in injuries to 22 persons. Of these, three bus passengers and the tram driver were seriously injured. This accident is under investigation by the Gardaí and the RAIU.

The rate of emergency brake applications continued to decrease: with 350 events recorded for 2009. There was an increase in the number of times the emergency handle was used, from 43 in 2008 to 108 in 2009, of which only 13 were for good reason.

3.4 Industrial Systems

Bord na Mona is the only industrial railway system that interfaces with the public road. The RSC's involvement is limited to its interfaces with public roads and other railways.

In 2009 there were two level crossing incidents at the same location, both related to premature operation of level crossing gates by third parties whilst trains were on the crossings, resulting in the derailment of wagons. No injuries or fatalities resulted. An RSC inspection of the site was undertaken and recommendations were made.

3.5 Heritage Railways

Only one incident was reported by a heritage railway in 2009, when a track fault resulted in a low speed derailment with no injuries. Whilst the safety performance of the sector was generally satisfactory, the RSC is working with a number of heritage railway operations to raise safety standards.

4. Corporate Governance and Administration

4.1 Introduction

Corporate governance comprises the systems and procedures by which enterprises are directed and controlled. In this regard, the RSC has adopted and is compliant with the Code of Practice for the Governance of State bodies, as published by the Department of Finance.

4.2 Finance

4.2.1 Funding

Our funding is provided in part by the Department of Transport by a Grant-in-Aid and in part by a levy on the railway undertakings. In 2009 the Grant-in-Aid funding amounted to €1.9m. In 2008 the RSC invoked the provision of section 26(1) of the Railway Safety Act 2005 and made regulations to impose a levy of each of the Railway undertakings. These regulations are made annually and the regulations for 2010 are contained in Statutory Instrument No. 10 of 2010.

Our accounts for 2008 were subject to audit by the Comptroller and Auditor General and were approved by them in September.

4.2.2 Statement on Internal Financial Control

The RSC acknowledges responsibility for ensuring that an effective system of internal financial control is maintained and operated. The system can provide only reasonable and not absolute assurance that assets are safeguarded, transactions authorised and properly recorded, and that material errors or irregularities are either prevented or would be detected in a timely manner. Maintaining the system of internal financial controls is a continuous process and the system and its effectiveness are kept under ongoing review.

4.2.3 Financial Control Environment

This is the fourth year of the RSC's existence. We are continuing to develop processes and procedures to ensure a strong internal control environment. A number of measures have been identified to assist in creating this environment and steps have been taken to embed them in the RSC:

- Clear definition of management responsibilities
- Establishment of formal procedures for monitoring the activities and safeguard the assets of the organisation
- Adoption of the principles of corporate governance contained in the Code of Practice for Governance of State Bodies
- Establishment of an Internal Audit function to advise the RSC on discharge of its responsibilities for the internal financial control system.

During 2009, the RSC had made further progress in developing a strong internal control environment through a framework of regular management information, administrative procedures including segregation of duties, and a system of delegation and accountability. In particular this framework includes:

- A comprehensive budgeting system with an annual budget which is reviewed and agreed by the RSC;
- Regular and ongoing review of all payments by the Commissioner;
- Certification of all invoices, including travel and subsistence claims, prior to payment and authorisation by the Commissioner;
- Setting targets to measure financial and other performance.

The RSC confirm that all appropriate procedures for financial reporting, internal audit, procurement and asset disposal are being carried out.

4.2.4 Tax Compliance

The RSC is compliant with regard to its tax obligations.

4.2.5 Travel and expenses

The RSC is compliant with all relevant Department of Finance circulars on travel, subsistence and associated expenses.

4.3 Joint Oireachtas Committee on Transport

In September the RSC reported to the Joint Oireachtas Committee on Transport following the collapse of the Broadmeadows Viaduct.

4.4 Irish Language commitment

The RSC is committed to implementing the relevant parts of the Official Languages Act 2003. Our signage and stationery are currently in both Irish and English.

4.5 Freedom of Information

The former Railway Inspectorate division, our forerunner under the aegis of the Department of Transport, was subject to the Freedom of Information Act. It is expected that the RSC will be included among the organisations governed by this Act by 2010. In the meantime, we are committed to conforming to the principles of this Act.

4.6 Customer charter

The Customer Service charter was prepared in 2006 and is available on our website. This charter describes the level of service a customer can expect from the RSC. No customer service complaints were received in 2009.

4.7 Risk Management

The RSC has a risk management system in place to review key risks to its business.

4.8 Code of Ethics and Business Conduct.

A Code of Ethics and Business Conduct is in place for the Commissioner and all staff and it is being adhered to.

4.9 Statement of Strategy 2009-2011

In 2009 the RSC produced their second Statement of Strategy. This document identifies the strategic direction of the RSC, including the RAIU, for the period 2009 to 2011, providing external stakeholders with a clear guide to our goals and business objectives. In carrying out our responsibilities, we will be guided by this Statement of Strategy.

5. Looking Forward

The RSC will continue to implement its responsibilities under the RSA 2005 and SI 61 of 2008 during 2010. Particular areas for priority in 2010 are:

- Safety Certification of the heavy rail network against European criteria;
- Preliminary Design approval for underground railways; Metro North and Underground DART;
- Audit and Monitoring of all railway undertakings.

European affairs are expected to generate a healthy workload also as deadlines for implementation of Directives and Regulations arrive. Further work on vehicle and infrastructure registers as well as defining the technical rules and dimensions of the Irish network is anticipated.

In carrying out our functions we will be aware of the economic climate we are in.

Appendix 1

Appendix 1: Iarnród Éireann Statistics

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Staff	5,759	6,021	5,833	5,590	5,462	5,114	4,933	4,845	N/A
Train-km passenger	12,356,000	12,602,000	12,245,000	11,777,000	13,034,000	14,505,000	16,060,000	18,044,657	16,190,950
Train-km freight	4,133,000	2,895,000	2,705,000	3,350,000	4,953,000	3,737,000	772,000	1,034,173	946,374
Train-km total	16,489,000	15,497,000	14,950,000	15,217,000	17,987,000	18,242,000	16,832,000	19,918,501	18,182,358
Total passenger journeys	34,206,000	35,370,000	35,558,000	34,550,000	37,653,000	43,350,000	45,513,000	44,646,000	38,800,000
Passenger-km total	1,515,303,000	1,628,410,000	1,600,615,000	1,581,698,000	1,781,400,000	1,872,067,000	2,007,065,000	1,975,786,000	1,681,100,000
Route Km								1657	1665*

** Note that during 2009 the basis for calculating Network route Km was adjusted. This provided a new figure for 2008 and 2009. During 2009 the Midleton line re-opened, increasing the Route Km.*

Appendix 2

Appendix 2: Iarnród Éireann Rail incidents and injuries 2001-2009

Railway operations and track maintenance: fatal injuries	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fatal injury to person due to a train accident, not at level crossing	-	-	-	-	-	-	-	-	-
Fatal injury to passenger traveling on a train, other than in train accident	-	-	-	-	-	-	-	-	-
Fatal injury to passenger attempting to board or alight from train	-	1	-	-	-	-	-	-	-
Fatal injury to customer, no train involved	-	-	-	-	-	-	1	-	-
Fatal injury due to railway accident at a level crossing	-	1	-	1	-	-	1	1	-
Fatal injury to employee at a level crossing due to train in motion	-	-	-	-	-	-	-	-	-
Fatal injury to employee due to train in motion (other than at a level crossing)	1	-	-	-	-	-	-	-	-
Other fatal injury to employee on the railway	-	1	-	-	-	-	-	-	-
Fatal injury on railway or level crossing where trespass or suspicious death was indicated	11	9	10	11	8	7	5	8	5
Injury to passenger due to a train accident not at level crossing	11	5	-	-	12	-	-	-	2
Injury to passenger traveling on train, other than in a train accident	60	54	66	70	73	41	35	22	40
Injury to passenger attempting to board or alight from train	65	43	69	65	48	55	50	43	17
Injury to passenger in station or visitor to premises	81	108	81	86	105	69	84	74	88
Employee injury involving train movement or train accident	10	5	12	8	4	15	8	9	13
Employee injury while working on railway	118	104	109	118	100	69	78	79	65
Employee injury at level crossing	3	1	2	-	1	2	4	-	-
Person injured in railway accident at level crossing	3	1	-	-	-	-	1	-	-
Passenger injury in railway accident at level crossing	-	-	-	1	-	-	-	-	-
Level crossing user injured	2	3	-	3	4	-	1	1	1
Injury to other person	2	4	6	6	3	5	1	2	-

Train incidents	2001	2002	2003	2004	2005	2006	2007	2008	2009
Derailment of any passenger or goods train on running line	1	1	4	-	2	3	1	2	1
Other derailment on running line	1	-	1	-	-	2	2	2	2
Train collision with any passenger or goods train on running line	1	-	1	-	1	1	-	-	1
Train collision with buffer-stop (passenger train in service on running line)	2	1	-	-	-	-	-	1	-
Other train/train collision on running line	-	-	1	-	-	-	-	1	-
Train collision with a motor vehicle at a level crossing	2	4	-	2	2	1	4	4	-
Train collision with attended gates at a level crossing	4	3	2	3	-	2	2	1	-
Train collision with a vehicle obstructing the line (not at a level crossing)	-	2	2	-	-	-	-	-	-
Train collision with animal(s)	32	32	43	40	42	43	42	33	20
Train collision with other obstacle on the line	2	2	3	1	-	5	9	17	10

Rolling stock incidents	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fire or smoke on locomotives or other rolling stock	7	11	8	9	4	13	27	13	6
Train dividing in running	-	2	1	-	3	-	1	1	1
Rolling stock door incident	-	4	3	-	-	1	11	4	1

Permanent way & infrastructure incidents	2001	2002	2003	2004	2005	2006	2007	2008	2009
Rail on passenger line fractured from head to foot	3	5	3	1	6	4	1	2	4
Bridge under the railway struck by road vehicle	79	99	137	123	203	194	140	86	97
Bridge parapet over the railway struck by road vehicle	3	4	6	13	12	23	40	26	17
Main (running) signal passed at danger where warning was given in time	29	22	32	29	36	25	22	12	17
Total signals passed at danger	n/a	n/a	n/a	n/a	n/a	n/a	n/a	22	22

n/a indicates statistic not available at the time of compilation of this report

Appendix 3

Appendix 3: LUAS Statistics
Dublin Light Rail operating and accident statistics 2004-2009

Year	2005	2006	2007	2008	2009
Tram Km (000)s	2,500	2,661	2,751	2,744	2,695
Road Traffic Accidents (RTA)	36	24	28	32	23
Contact of person with tram	8	21	18	20	18
Collision tram/tram	1	-	-	-	-
Derailment in depot	4	-	3	1	-
Derailment on mainline	1	1	-	-	1
- First Aid	5	1	3	1	5
- Medical Attention	10	9	11	4	20
- Hospital care	2	2	2	1	4
Total Injuries	17	12	16	6	29
Emergency Handle	14	21	22	43	108
Emergency Brake	946	747	540	435	350

(- denotes Zero. N/A denotes information not available)

Note: The first complete year of LUAS operation was 2005

Appendix 4

Appendix 4: Approvals granted by RSC in 2009

Infrastructure Projects	Project Phase		
	Preliminary Design	Detailed Design	Operation Commission
City Centre Re-signalling	√		
Cork Cobh Re-signalling	√		
Dublin Cork Line : Hopes Bridge	√	√	
Dublin Cork Line : Two Bridges	√	√	√
Dublin Galway Line : Three Bridges	√	√	√
Dunboyne Commuter Rail	√	√	
Exit Validation Project	√	√	
Hot Axle Box Detectors	√	√	√
Kildare Route Project			√
Leixlip Confey Platform Repairs	√	√	√
Limerick Southern Link Road : Overbridge			√
LUAS Line A1		√	
LUAS Line B1		√	
LUAS Line C1			√
LUAS Line A – Footbridge		√	√
M7/M8 : Clonboyne Overbridge	√	√	
M7/M8 : Coolballyogan Overbridge	√	√	
M7/M8 : Maghernaskeagh Overbridge	√	√	
M7/M8 : Shanboe Overbridge			√
M50/N3 : Junction Improvement Scheme	√	√	
Malahide Viaduct	√	√	√
Midleton Line			√
N6 : Ballygarraun Overbridge	√	√	√
N6 : Farranblake Overbridge	√	√	√
N6 : Monksland Overbridge	√	√	√
N6 : Newford Overbridge	√	√	√
N6 : Newtown Overbridge	√	√	√
N7 : Widening OBN57A	√	√	
N8 : Woodhill Overbridge			√
N9/N10 : Dunkitt Overbridge	√	√	
N25 : Granny Junction Overbridge			√
N25 : Newrath Overbridge	√	√	√

Infrastructure Projects	Project Phase			
		Preliminary Design	Detailed Design	Operation Commission
N25 : WSVR* Overbridge		√	√	
N51 : Kingscourt Overbridge				√
N51 : Tara Mines Overbridge				√
Shannon Bridge at Dromod		√	√	√
Waterford New Ross Line : Overbridge		√	√	
Western Link : WSVR*		√	√	
Western Rail Corridor		√	√	

**WSVR = Waterford and Suir Valley Railway*

Rolling Stock Projects	Project Phase				
	Concept	Preliminary Design	Detailed Design	Test & Comm	Service
Ballast Wagons	√				
Barclay Steam Locomotive 2265	√	√	√	√	√
Intercity Railcars	√				
LUAS 402 tram			√	√	√
LUAS Road Rail Cleaning Vehicle	√				
Mk3 Enterprise Generator Van	√				
Metro North	√				
Points & Crossing Tamper		√			
Steam Locomotive for West Clare Railway					√
Vehicle Interior Conversion					√