



An Roinn Iompair,
Turasóireachta agus Spóirt
Department of Transport,
Tourism and Sport

Review of the Infrastructure Manager Multi-Annual Contract 2014 to 2018

December 2019

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ACRONYMS

Acronym	Definition
CCE	Chief Civil Engineer
CIÉ	Córas Iompair Éireann
CRR	Commission for Railway Regulation
CTC	Central Traffic Control
DART	Dublin Area Rapid Transit
DTTAS	Department of Transport, Tourism and Sport
EU	European Union
GDA	Greater Dublin Area
GSM-R	Global Systems for Mobile Communications - Railways
HABD	Hot Axle Box Detector
IÉ	Iarnród Éireann
IMB	Independent Monitoring Body
IM	Infrastructure Manager
IMMAC	Infrastructure Manager Multi-Annual Contract
KPI	Key Performance Indicator
LCRM	Level Crossing Risk Model
NTA	National Transport Authority
NWRM	Network Wide Risk Model
OHLE	Overhead Line Equipment
P&C	Points and Crossings
PSC	Public Spending Code
PSO	Public Service Obligation
PSR	Permanent Speed Restrictions
RSP	Railway Safety Programme
RU	Railway Undertaking
SET	Signalling, Electrical and Telecommunications
SMS	Safety Management Systems
TMS	Track Management Software
TOPS	Train Operations Performance System
TSR	Temporary Speed Restrictions

Summary of Recommendations

In 2008 the European Commission published a *Communication on Multi-annual contracts for rail infrastructure quality*¹ which outlines the potential advantages the IMMAC framework should bring to the maintenance and renewal of railway infrastructure such as –

- A long-term financing framework for maintenance;
- Complementing the charging system;
- Enabling effective cost control;
- Enabling benchmarking and regulatory supervision;
- Improving performance and quality control; and
- Securing the effectiveness of the contractual arrangements.

The Review Group has considered IMMAC 2014 to 2018 within the framework referred to above. Section 10 of the Report details the Review Group's Conclusions and Recommendations in full with a summary of Recommendations provided in the Table below –

Summary of Review Group Conclusions and Recommendations	
<i>A long-term financing framework for maintenance</i>	
1.	IMMAC 2020 to 2024 should, subject to the voted expenditure allocations as published in the Revised Estimates of Public Services each year, provide a 5 year funding framework in line with the requirements identified in section 9.2.
<i>Complementing the charging system</i>	
2.	As part of any future review of IMMAC 2020 to 2024, the Review Group recommends the views of the Essential Functions Body are more formally sought in relation to the proposed access charge framework over the next 5 year period.
<i>Enabling effective cost control</i>	
3.	The Review Group recommends that the CRR and the IM develop improved financial performance indicators to allow for appropriate monitoring of the efficiency and effectiveness of the increased levels of investment planned over 2020 to 2024.
4.	The Review Group considers it particularly important that these improved indicators allow for oversight of unit cost performance in key areas of the IM's work programme over the next contract period of 2020 to 2024.
5.	The Review Group recommends that DTTAS engage with the CRR in relation to the resources that are available to it to allow for an enhanced monitoring role in relation to the IM's financial performance under the IMMAC.

¹ European Commission (2008); [Multi-annual contracts for rail infrastructure quality](#)

Summary of Recommendations and Conclusions	
<i>Enabling benchmarking and regulatory supervision</i>	
6.	The Review Group recommends that the CRR and the IM agree a methodology and/or process to set, and vary, annual performance thresholds against agreed key performance indicators and that the methodology and/or process is set out in the IMMAC.
7.	The Review Group recommends that annual performance thresholds should be robust and appropriately challenging to allow for effective monitoring of performance.
8.	The Review Group recommends continued IM engagement with the EU PRIME work in developing performance indicators and, in the interim, that any revised national level performance indicators are developed cognisant of the work underway at EU level.
9.	The Review Group considers it necessary that financial expenditure information be provided by the IM to DTTAS on a monthly basis but that detailed reporting is only required by DTTAS in the form of the CRR's quarterly report as independent regulator.
<i>Improving performance and quality control</i>	
10.	The Review Group recommends that the CRR and the IM agree improved performance indicators, with appropriate performance thresholds, which allow for better linkages between IM outputs and service delivery outcomes.
11.	The Review Group recommends that the IM develop a 5 year outline work programme for the period 2020 to 2024 with summary expected benefits capable of measurement within the framework of revised performance indicators to be agreed between the IM and the CRR.
12.	The Review Group recommends that the 5 year outline work programme and the annual work programme as developed each year is submitted by the IM to DTTAS and the CRR for observations prior to inclusion within Schedule C of the contract.
13.	The Review Group recommends engagement between the IM and DTTAS on the issue of closed and abandoned lines.
<i>Securing the effectiveness of the contractual arrangements</i>	
14.	The Review Group recommends the IMMAC require engagement between the IM and DTTAS (and the CRR as appropriate) prior to any withholding of Exchequer grants as permitted by section 8 of the IMMAC.
15.	The Review Group recommends both parties endeavour to a more timely finalisation of necessary amendments and restatement of the IMMAC as may be required each year.
16.	The Review Group recommends that IMMAC 2020 to 2024 be subject to a Value for Money and Policy Review commencing in Q3 2023.

1. Introduction

1.1 In 2014 the Minister for Transport, Tourism and Sport and Iarnród Éireann entered into the *Infrastructure Manager Multi-Annual Contract (IMMAC) 2014 to 2018*. In December 2018 a 1-year extension was agreed to facilitate the work referred to in section 1.2 below.

1.2 In 2018 a Review Group, comprising officials from DTTAS, NTA, CRR and Iarnród Éireann Infrastructure Manager (the “IM”), was established to review the current IMMAC and its effectiveness in order to inform the development of a new IMMAC for the next multi-annual contract period.

1.3 The Review Group was tasked to collectively examine the following:

- (1) To examine the funding requirements for investment in railway maintenance and renewal programme to form the basis of a Infrastructure Manager Multi-Annual Contract (IMMAC) with Iarnród Éireann commencing in 2019 for a to-be-determined period and to make a recommendation on the level of Exchequer funding per annum taking due account of:
 - i. a review of the stated and achieved outcomes of the current IMMAC for the period 2014 to 2018;
 - ii. the findings of the *Rail Review Report 2016*;
 - iii. the Infrastructure Manager Business Plan (to ensure consistency with the provisions of the Contract);
 - iv. assessment of a detailed submission from Iarnród Éireann of the annual investment requirements to renew and maintain the existing railway asset condition and network, on a fit-for-purpose basis, with forecast outputs, results, and impacts over the investment period identified; and
 - v. allocations in the current four year Capital Envelope 2018-2021 and the National Development Plan 2018-2027 and the National Planning Framework 2040.
- (2) To review and consider funding for network enhancements, if any, based on identified priorities and available funding.
- (3) To consider the effectiveness of the incentives and Key Performance Indicators (KPIs) in the current IMMAC contract in encouraging the delivery and achievement of the Programme in an efficient and cost effective basis and to recommend incentives and KPIs for future contract arrangements.
- (4) To review the processes including but not exclusive to: the reporting mechanism as laid out in the contract, the period of contract and the

methodology for its annual updating , to ensure the most efficient method of delivery.

- (5) To review updated relevant EU Directives and Regulations to ensure that the future contract enables/ensures all requirements under amended legislation continue to be met.
- (6) In the context of Brexit, to review processes in place to ensure that the future contract enables/ensures alignment of standards and continued interoperability as required with the Northern Ireland railway network.

2. Background

- 2.1** Directive 2012/34/EU establishing a single European railway area provides for a consolidation of the economic aspects of European railway legislation which date from 1991 and the Directive's provisions were given effect in Irish law through the European Union (Regulation of Railways) Regulations 2015 (S.I. No. 249 of 2015) ("the Regulations"). Directive (EU) 2016/2370 of the European Parliament and of the Council of 14 December 2016 amends Directive 2012/34/EU and is to be transposed into national legislation, as regards the opening of the market for domestic passenger transport services by rail and the governance of the railway infrastructure.
- 2.2** The regulatory framework governing railways in the European Union requires the functional separation of the role of maintaining the network (known as the Infrastructure Manager (IM)) from the role of providing services (known as the Railway Undertaking (RU)). In Ireland IÉ has implemented a functional separation of the Railway Undertaking (RU) and the Infrastructure Manager (IM) roles within the company and separate audited accounts are published for these and other roles alongside the consolidated company accounts.
- 2.3** In Ireland, the regulatory framework also includes the "Essential Functions Body" which is the body charged under the Regulations with decision-making on train path allocation, including both the definition and the assessment of availability and the allocation of individual train paths, and on infrastructure charging, including determination and collection of the charges in accordance with the Regulations. Article 5 of the Regulations state that the Essential Functions Body shall be Córas Iompair Éireann (CIÉ).
- 2.4** The Regulations *inter alia* provide that –
- The Minister for Transport, Tourism and Sport is the competent authority for the purposes of the Regulations;
 - A contractual agreement shall be entered into between the Minister as competent authority and the IM;
 - The contractual agreement shall fulfil the basic principles and parameters as set out in Schedule 3 of the Regulations;
 - The contractual period shall be for a period not less than 5 years; and
 - The Commission for Railway Regulation is the independent monitoring body in relation to monitoring the performance of the IM against its contractual obligations as set out in the IMMAC.

- 2.5** Under Article 8 of Directive 2012/34/EU, Member States are required to “*ensure that, under normal business conditions and over a reasonable period, which shall not exceed a period of five years, the profit and loss account of an infrastructure manager shall at least balance income from infrastructure charges, surpluses from other commercial activities, non-refundable incomes from private sources and State funding, on the one hand, including advance payments from the State, where appropriate, and infrastructure expenditure, on the other hand*”.
- 2.6** Income sources for the IM are dominated by Exchequer funding provided under the IMMAC and access charges which are paid to the IM by railway undertakings which make use of the infrastructure. In practice, the vast majority of access charges are paid by the RU division of IÉ as it is by far the largest railway undertaking in Ireland and is itself the recipient of significant Exchequer funding under its Public Services Contract with the NTA. There is very limited scope for commercial revenues in the short-term.
- 2.7** The first IMMAC was entered into between the Minister and the IM on 13 June 2014 and, in line with the recommendations of the Working Group Report (January 2014), it was finalised with actual funding figures for 2014 and indicative funding figures for 2015 to 2018 included, pending an assessment of the 2015 to 2018 requirements in order to address certain data gaps identified by the Working Group. The contract was amended and restated for each subsequent contract to reflect actual funding figures and also to update the work programme for the relevant year as required in Schedule C.
- 2.8** In addition to the IMMAC funding which relates specifically to maintaining the railway infrastructure, DTTAS and the NTA also provide funding for investment in network enhancement projects which, as stated in section 5 of the IMMAC, are dealt with by separate arrangements and are outside the scope of the IMMAC.
- 2.9** It is also important to note in the context of the IMMAC that the Safety Management System (SMS) requirements, on which Safety Authorisation has been granted to the IM, require the duty holder to subject any ‘significant change’ to a formal risk assessment in accordance with Commission Regulation (EC) No.352/2009 (common safety method on risk evaluation and assessment as referred to in Article 6(3)(a) of Directive 2004/49/EC – the Railway Safety Directive) and in compliance with its approved SMS standards for the management of change. Furthermore, such risk assessment will need to be independently validated, and any mitigation measures necessary for the assurance of safety will need to be clearly understood and agreed by all parties.
- 2.10** In summary the statutory requirements of Directive 2012/34/EU and the Regulations, and the requirements of amending Directive 2016/2370/EU which is

to be transposed into national legislation and the safety regulatory requirements as outlined in the previous paragraph, are key drivers of decisions on the investment programme for the IMMAC. These requirements must be addressed having regard to the current condition of the rail infrastructure and the level of resources available for its maintenance and renewal.

3. Railway Infrastructure – the IM and the IMMAC

3.1 The IM is responsible for establishing, managing and maintaining the railway infrastructure and traffic management, control command and signalling systems.

3.2 Railway infrastructure is defined within the Regulations as –

- Access way for passengers and goods, including access by road and access for passengers arriving or departing on foot;
- Buildings used by the infrastructure department, including a proportion of installations for the collection of transport charges.
- Engineering structures: bridges, culverts and other overpasses, tunnels, covered cuttings and other underpasses; retaining walls, structures for protection against avalanches, falling stones, etc.;
- Ground area;
- Level crossings, including appliances to ensure the safety of road traffic;
- Lighting installations for traffic and safety purposes;
- Plant for transforming and carrying electric power for train haulage: substations, supply cables between substations and contact wires, catenaries and supports; third rail with supports;
- Safety, signalling and telecommunications installations on the open track, in stations and in marshalling yards, including plant for generating, transforming and distributing electric current for signalling and telecommunications; buildings for such installations or plant; track brakes;
- Superstructure, in particular: rails, grooved rails and check rails; sleepers and longitudinal ties, small fittings for the permanent way, ballast including stone chippings and sand; points, crossings, etc.; turntables and traverses (except those reserved exclusively for locomotives);
- Track and track bed, in particular embankments, cuttings, drainage channels and trenches, masonry trenches, culverts, lining walls, planting for protecting side slopes, etc.; passenger and goods platforms, including in passenger stations and freight terminals; four-foot way and walkways; enclosure walls, hedges, fencing; fire protection strips; apparatus for heating points; crossings etc.; snow protection screens.

3.3 Within the IM there are four business units with responsibilities for the management and maintenance of railway infrastructure, control command and signalling systems:

- IMO (Infrastructure Manager Operations): responsible for the management, control, supervision, delivery and recovery of train control

operations activities and is the interface between Railway Undertakings (RUs) and the IÉ Network.

- SMS (Safety Management Systems): provides the basis on which safety is managed, it supports good business practice and provides compliance with all relevant European and Irish legislation.
- CCE (Chief Civil Engineering) Department: responsible for the maintenance and renewal of the civil engineering infrastructure assets on the railway system and is organised on a regional basis.
- SET (Signalling Electrical & Telecommunications) Department: responsible for the maintenance and renewal of the SET systems and is organised on a discipline and regional basis.

3.4 The IMMAC imposes a general standard of performance upon the IM that railway infrastructure is at all times provided –

- In an efficient, effective and safe manner; and
- By appropriately knowledgeable, experienced, qualified and trained personnel.

3.5 The IMMAC establishes Key Performance Indicators (KPIs) and performance is measured on a year to date basis against annual performance targets which reflect the current state of the network and the available funding for maintenance and renewal works over the review year.

3.6 The IMMAC provides for both penalties and incentives, in line with the Regulations and Directive 2012/34/EU. Persistent failure to perform by the IM in the KPI relating to service cancellations may give rise to ‘persistent failure to perform’ penalties; however, the IMMAC also provides for better than target performance in other KPIs to be used to off-set any such penalty in order to reward and incentivise better than planned performance.

3.7 The KPIs are measured and reported upon, on a quarterly and annual basis, by the IM to the CRR. A meeting is held by DTTAS each quarter to review the CRR’s report of the previous quarter. The report assesses the IM’s performance against the agreed criteria (see Section 7 for further detail) and is subject to discussion between representatives of DTTAS, the CRR and the IM. Each year the CRR completes an annual report of the IM’s performance.

3.8 The objectives of the Key Performance Indicators and Persistent Failure to Perform Penalties are to:

- a) Ensure that that the railway infrastructure service provided by the IM is of a consistent quality and meets the requirements of the Minister in the context of the available funding; and
- b) Provide a mechanism whereby the Minister can attain meaningful recognition of any inconvenience and/or loss resulting from the IM's failure to deliver the level of infrastructure service for which it is contracted to deliver.

3.9 In 2008 the European Commission published a Communication ([COM/2008/0054 \(Final\) Multi-annual contracts for rail infrastructure quality](#)) which sets out '*the measures that Member States and infrastructure managers should take to combine financial equilibrium with an appropriate level of rail infrastructure services*'.

3.10 The Commission's Communication outlines the potential advantages the IMMAC framework should bring, such as –

- A long-term financing framework for maintenance;
- Complementing the charging system;
- Enabling effective cost control;
- Enabling benchmarking and regulatory supervision;
- Improving performance and quality control; and
- Securing the effectiveness of the contractual arrangements.

3.11 In Ireland IMMAC 2014 to 2018 was developed in line with the measures outlined above and the statutory requirements of Directive 2012/34/EU and the Regulations.

3.12 In December 2018 a 1-year extension to IMMAC 2014 to 2018 was agreed in order to facilitate the work of the Review Group and agreement of a new IMMAC 2020 to 2024.

4. Working Group Report 2014

4.1 As noted previously, prior to the formalisation of the first IMMAC a Working Group of relevant officials was established to –

(1) To examine the funding requirements for investment in railway maintenance and renewal programme to form the basis of a Multi-annual Infrastructure Manager Contract (IMMAC) with Iarnród Éireann commencing in 2014 for a period of up to 3-5 years and to make a recommendation on the level of Exchequer funding per annum taking due account of –

- (i) allocations in the current capital plan to 2016*
- (ii) assessment of a detailed submission from Iarnród Éireann of the annual investment requirements to renew and maintain the existing railway asset condition and network, on a fit for purpose basis, with forecast outputs, results, and impacts over the investment period identified*
- (iii) conclusions and recommendations of Railway Safety Programme 3 Mid - Term review of October 2012.*

(2) To review and consider funding for network enhancements based on priorities proposed by Iarnród Éireann and available funding

(3) To recommend the incentives and KPIs in the IMMAC contract that would encourage the delivery and achievement of the Programme in an efficient and cost effective basis.

4.2 The Working Group identified six main challenges facing the IM in the immediate short term –

- The need to invest in track, in particular Cork, Belfast, Galway and DART lines – with prioritisation based on asset age, condition and operational usage (tonnages and passengers).
- The need for a significant program of bridge repairs and renewals.
- The continuation of the Level Crossings Investment Program.
- The need for renewal of key Points & Crossings (P&C) in particular in the DART area.
- The need for safety investment in station buildings including essential mechanical and electrical renewal works at buildings to achieve basic legislative and regulatory compliance.
- The need for signalling systems renewal/upgrades to eliminate/offset obsolescence and reduce risk.

- 4.3** In terms of funding, the Working Group noted that submissions made by the IM in relation to the annual IMMAC funding requirements over the period of 2014 to 2018. IÉ's submissions were based on analysis carried out on its behalf by AECOM in 2011 and that analysis concluded the annual 'steady state' funding requirement amounted to €244million (comprising contributions from both the Exchequer and access charges imposed on RUs) per annum over a period of 20 years².
- 4.4** The Working Group tasked Leigh Fisher/Jacobs to review the IM funding requirements. That review largely accepted the requirements as put forward by the IM; however, it recommended that more detailed analysis was required in relation to the SET associated expenditure (€69m per annum) and that recommendation was accepted by the Working Group.
- 4.5** The Working Group's Final Report included 11 conclusions which are summarised below with updates provided against any relevant conclusion as required –

Table 4.1 Conclusions of Working Group Report 2014	
Number	Conclusion
1.	The RSP delivered an acceptable level of safety for the rail network. However an optimal steady state position has not been reached and key sections of the busiest sections of the network now require a major renewal programme.
2.	A "deferral" scenario has significant implications for the overall cost of the asset over its lifetime and also for the efficient operation of the network.
3.	A substantial investment programme is required to bring the identified three critical lines (Cork, Belfast and DART) to an acceptable maintainable state.
4.	The IM work programme for 2014 should be agreed based on the available funding of €186.84m. For the purposes of the IMMAC, the actual figures for 2014 should be used and indicative figures for the remaining four years. UPDATE: Completed
5.	IÉ should be in a position to provide route by route data on performance, revenues and costs by mid-2014. This data will provide a more comprehensive view of the relative performance of individual lines.

² As noted in the *Rail Review* this steady state funding requirement relates to the operational network and does not include a specific allocation toward the IM's responsibilities in relation to closed and abandoned lines.

	UPDATE: Completed
6.	SET steady state funding requirement to be verified by mid-2014. UPDATE: Completed
7.	IE to review the Network Wide Risk Model mid-2014 taking account of the Consultants' views. UPDATE: Completed
8.	IE to address the suggestions by Leigh Fisher for efficiencies, better asset management, improved information systems, etc. UPDATE: Completed
9.	IE to provide a clear picture on abandoned lines and the related bridges and structures and associated costs with a view to DTTAS and IE preparing a plan to minimise this cost by transferring responsibility for those lines/bridges where other agencies have an interest such as local authorities and tourism bodies. UPDATE: Considered as part of the Rail Review
10.	The Working Group notes also that the implications of a "significant change" in funding for "Safety Authorisation" must be assessed fully and a risk assessment undertaken to ensure full compliance with the Railway Safety Directive. The Railway Safety Commission will determine if "significant change" has occurred. A risk assessment may require mitigation measures that will affect operational performance. The Railway Safety Commission has indicated that, based on available funding, a formal risk assessment will be required for 2014. UPDATE: While no formal risk assessment was undertaken IE confirms that there was full compliance with the Railway Safety Directive.
11.	There is a need for the development of a railway policy framework which takes a view on the future role of rail transport in Ireland based on available funding, transport needs, safety and commercial realities. This should be addressed in the 2014 review if, as appears likely, there is less funding available than required to maintain rail infrastructure for the current network in a "steady state" condition. UPDATE: Rail Review completed

5. Rail Review

- 5.1** The *Rail Review*³ was jointly undertaken by the National Transport Authority (NTA) and Iarnród Éireann and published in August 2016. The purpose of the *Rail Review* was to examine the existing rail network, the funding required to maintain the network and provide for necessary capital works and the gap that exists in funding.
- 5.2** In effect the *Rail Review* provided a mid-term review of the funding requirements of the IM and Appendix 4 of the *Review* contained a report from AECOM entitled *Maintenance and Renewal Spending – Update from 2030 Rail Network Strategy Review*.
- 5.3** The *Rail Review* identified that, while funding in some areas was broadly in line with identified requirements, the overall underfunding of the IM through the IMMAC was resulting in an increasing level of deferred expenditure in certain areas of the CCE and SET business units.
- 5.4** The analysis concluded that the annual funding level required to reach steady state performance now amounted to €276m per annum out to 2030. The Table below outlines the analyses' overview of the funding provided and funding required to reach steady state.

Table 5.1 Rail Review Steady State Funding Annualised Requirements			
	'Steady State' (2011 Prices)	IM Actual Expenditure 2011 - 2016	Revised 'Steady State' (2017 prices)
IMO €m	21.0	23.0	28.3
SMS €m	9	9.2	9.0
CCE €m	144.8	119.1	158.7
SET €m	69.2	47.4	80.8
IMMAC Total	€244.0m*	€198.7m	€276.8m*

***Steady state' figures of €244m / €276M per annum relate to the operational network and do not include maintenance obligations in relation to closed and abandoned lines.*

- 5.5** The NTA published the *Rail Review* in 2016 for public consultation and approximately 320 submissions were received. Since publication of the *Rail Review*, a number of developments have taken place, including improved revenues in both the RU, through increased PSO funding and passenger

³ NTA / IÉ (2016); https://www.nationaltransport.ie/wp-content/uploads/2016/11/151116_2016_Rail_Review_Report_Complete_Online.pdf

revenue, and the IM, through increased IMMAC funding and increased access charges.

6. IMMAC 2014 to 2018: IM Overview

6.1 Expenditure

6.1.1 The level of investment delivered under IMMAC 2014 to 2018 is summarised in Table 6.1.

Table 6.1 IMMAC 2014 -2018 annual spend (€m) by category.					
	2014	2015	2016	2017	2018
IMO	21.6	22.7	23.9	25.8	25.9
SMS	8.9	8.8	8.9	9.1	10.9
CCE	112.6	124.6	132.6	146.1	143.9
<i>Track and Associated Works</i>	48.2	58.0	60.8	68.0	62.2
<i>Bridges</i>	9.4	12.9	10.6	11.7	10.2
<i>Cyclical Asset Inspections</i>	8.9	8.8	9.1	8.8	10.0
<i>Cuttings & Embankments</i>	7.1	10.0	7.9	9.3	12.7
<i>Points & Crossings</i>	14.0	11.9	11.0	12.5	12.9
<i>Fencing</i>	4.1	2.6	2.3	3.4	3.6
<i>Level Crossings</i>	4.1	3.9	3.9	4.7	4.6
<i>Technical Department</i>	3.7	2.9	4.8	3.8	2.6
<i>Mechanical Maintenance</i>	3.7	3.2	3.3	8.3	8.1
<i>Small Capital Items</i>	0.9	0.6	0.8	3.0	2.9
<i>Buildings & Facilities</i>	8.6	9.9	10.3	12.7	14.2
<i>Storm Damage Repair Works</i>			8.0		
SET	48.2	49.3	48.0	74.0	67.0
<i>SET Maintenance</i>	32.1	31.5	33.0	37.5	39.2
<i>Signalling</i>	8.4	11.1	9.2	23.3	11.2
<i>Telecommunications</i>	6.2	5.4	4.3	11.7	14.2
<i>Electrification</i>	1.6	1.3	1.4	1.5	2.4
IMMAC Total	191.2	205.3	213.4	254.9	247.8
<i>IMMAC Exchequer Funding</i>	140.5	144.2	134.0	158.8	160.0
<i>% Exchequer Funding</i>	73%	70%	63%	62%	65%

6.1.2 IMMAC expenditure is funded through a direct Exchequer grant which over the period 2014 to 2018 amounted to an average of 67% of annual IMMAC expenditure with the balance largely funded through access charges paid by Railway Undertakings to the IM. As noted in section 2.6, in practice the vast majority of access charges are paid by the RU division of IÉ as it is by far the largest railway undertaking in Ireland and is itself the recipient of significant Exchequer funding under its Public Services Contract with the NTA.

6.1.3 As can be seen from the above, the total ‘steady state’ expenditure figure of €244m per annum over the five year period 2014 to 2018 was met in 2017 and 2018, while the average annual spend across the entire period amounted to €222.5m per annum. It should be noted however that the *Rail Review* revised upward the steady state funding requirement from €244m per annum to €276m per annum out to 2030. The increase to steady state requirement arose due to the backlog in infrastructure, maintenance and renewal expenditure between 2011 and 2016. Notwithstanding the increases in expenditure in both 2017 and 2018, the revised steady state funding requirement was not attained in any year.

6.2 IMO Outputs 2014 to 2018

Table 6.2 IMO Expenditure (€m) 2014 to 2018					
	2014	2015	2016	2017	2018
IMO	21.6	22.7	23.9	25.8	25.9
IMMAC Total	191.2	205.3	213.4	254.9	247.8
<i>IMO as % of Total</i>	<i>11.2%</i>	<i>11%</i>	<i>11.1%</i>	<i>10.1%</i>	<i>10.4%</i>

6.2.1 The IMO was established as a business unit in 2013 and acts as an interface between the IM and the RU within Iarnród Éireann in terms of signalling control, gate keepers and level crossings. IMO expenditure is largely headcount related and over the period of IMMAC 2014 to 2018, expenditure levels were broadly in line with requirements.

6.2.2 The IMO also has responsibility for the management, control, supervision, delivery and recovery of train control operations and over the lifetime of IMMAC 2014 to 2018 it has introduced a number of initiatives to streamline delivery and improve efficiencies through better work practices.

6.2.3 A number of these key initiatives are summarised below –

- Central Traffic Control
 - CTC resources have been increased and improved procedures have been adopted to address Customer Information during disruption.
 - CTC workstation control areas have been realigned to enable more efficient operations including of the proposed DART 10 minute timetable.
- Organisational Change
 - Organisational initiatives have been pursued including management of traffic restrictions and service curtailments during the Ballast Cleaning program and supporting change to the operational /

engineering track access process with the implementation of possession mapping.

- Organisational initiatives have been implemented to support change affecting operating staff through improved communications and staff engagement.
- Train control operations
 - Improvements introduced at both Limerick and North Wall through better signalling and resource allocation;
 - New systems and procedures introduced to capture and analyse data relating to train operations.

6.3 SMS Outputs 2014 to 2018

Table 6.3 SMS Expenditure (€m) 2014 to 2018					
	2014	2015	2016	2017	2018
SMS	8.9	8.8	8.9	9.1	10.9
IMMAC Total	191.2	205.3	213.4	254.9	247.8
<i>SMS as % of Total</i>	<i>4.6%</i>	<i>4.2%</i>	<i>4.1%</i>	<i>3.5%</i>	<i>4.4%</i>

6.3.1 The SMS business unit supports good business practice and provides compliance with all relevant European and Irish legislation. Similar to the IMO unit, its expenditure is largely headcount related and over the period of IMMAC 2014 to 2018 expenditure was broadly in line with the identified requirements. The increase in spend for 2018 has arisen due to the establishment of a dedicated Asset Management Unit.

6.3.2 In March 2018, the Safety Management System was subject to successful review and reauthorisation by the CRR in accordance with relevant EU and Irish legislation.

6.3.3 A number of other key activities and outputs of the SMS unit over the period are summarised below –

- Compliance monitoring
 - Introduction of a new Accident Incident Monitoring System (AIMS) in 2015 which replaced an older database and locally held spreadsheets with a single, central system for recording safety accidents, incidents, near misses and other hazards / close call occurrences.

- Increased activity undertaken by the safety assurance team which assesses compliance with the Safety Management System, an overview of activity is provided below –

Table 6.4 Safety Assurance Activity 2014 to 2018			
	Safety Tours Completed	Safety Validations	Audits against SMS
2014	1320	50	15
2015	1821	53	11
2016	1757	79	12
2017	1694	64	12
2018	1679	56	12

- Procedural and process improvements
 - Development and roll-out of a new competency system across the IM with the establishment of a certification and approval process for all safety critical training course.
 - Continued development and improvement of both the emergency response process and the investigation process with the latter seeking to encourage greater emphasis on transparency and openness to enable better understanding of the root cause.
- Training
 - A total of 28,394 training days were provided between 2014 and 2018 with 17,522 attendees over the same period.
 - Development of training courses for Road Rail Vehicle operators, human factors, strategic safety leadership and mental health first aid.

6.4 CCE Outputs 2014 to 2018

Table 6.5 CCE Expenditure (€m) 2014 to 2018.					
	2014	2015	2016	2017	2018
CCE	112.6	124.6	132.6	146.1	143.9
<i>Track and Associated Works</i>	48.2	58.0	60.8	68.0	62.2
<i>Bridges</i>	9.4	12.9	10.6	11.7	10.2
<i>Cyclical Asset Inspections</i>	8.9	8.8	9.1	8.8	10.0
<i>Cuttings & Embankments</i>	7.1	10.0	7.9	9.3	12.7
<i>Points & Crossings</i>	14.0	11.9	11.0	12.5	12.9
<i>Fencing</i>	4.1	2.6	2.3	3.4	3.6
<i>Level Crossings</i>	4.1	3.9	3.9	4.7	4.6
<i>Technical Department</i>	3.7	2.9	4.8	3.8	2.6
<i>Mechanical Maintenance</i>	3.7	3.2	3.3	8.3	8.0
<i>Small Capital Items</i>	0.9	0.6	0.8	3.0	2.9
<i>Buildings & Facilities</i>	8.6	9.9	10.3	12.7	14.2
<i>Storm Damage Repair Works</i>			8.0		
IMMAC Total	191.2	205.3	213.4	254.9	247.8
<i>CCE as % of Total</i>	58.8%	60.6%	62.1%	57.3%	58.0%

6.4.1 The CCE is a key unit within the IM and is responsible for the maintenance and renewal of the civil engineering infrastructure assets on the railway system. As can be seen from the Table above, in terms of expenditure CCE accounts for almost 60% of total IMMAC expenditure as averaged over the current IMMAC period. Expenditure in CCE was below that required as compared to the steady state level established in the AECOM 2011 report (€144.8m per annum) and the revised steady state level as set out in the *Rail Review* (€158.7m per annum).

6.4.2 Within CCE the annual expenditure by category was as set out in **Table 6.6**.

Table 6.6 CCE Expenditure (€m) by Category 2014 to 2018.					
	2014	2015	2016	2017	2018
Total CCE €m expenditure	112.6	124.6	132.6	146.1	143.9
<i>% Labour</i>	41%	36%	36%	34%	39%
<i>% Materials</i>	46%	51%	51%	57%	51%
<i>% Overheads</i>	13%	13%	13%	9%	10%

6.4.3 In terms of expenditure, CCE, along with SET, is an area where expenditure over the current contract period was not in line with the requirements identified and therefore expenditure was prioritised over the period with a view to –

- Asset safety and risk
- Asset condition;
- Asset performance;
- Compliance with technical standards; and
- Regulatory requirements.

6.4.4 In relation to track and associated works, CCE carried out annual programmes in relation to ballast cleaning, track relaying and, since 2016, rail milling. Output levels for each of these activities are provided in **Table 6.7** below.

Table 6.7 CCE Track and Associated Works Outputs 2014 to 2018										
	2014		2015		2016		2017		2018	
	<i>Act.</i>	<i>Plan.</i>	<i>Act.</i>	<i>Plan.</i>	<i>Act.</i>	<i>Plan</i>	<i>Act.</i>	<i>Plan.</i>	<i>Act.</i>	<i>Plan.</i>
Ballast Cleaning	-	-	25.4	24.9	25.6	25.6	24.2	24.7	23.5	24.3
New Track Relaying	2.1	2.0	4.6	5.4	5.9	6.6	15.6	14.0	6.6	7.2
2nd hand Track Relaying	3.5	3.9	4.6	4.5	3.1	2.9	0.5	1.0	0.3	0.1
Rail Milling	-	-	-	-	17.9	18.3	102.5	104.9	101.0	109.7

**Act. = Actual (miles); Plan. = Planned (miles)*

6.4.5 The introduction of rail milling in 2016, at an approximate cost of just 10% of rail replacement, offers the benefit of extending the life cycle of the average rail by anything between 10 and 20 years and resulting in less speed restrictions. Its introduction has also been critical as, due to the introduction of other emerging technologies such as identification of discreet, yet potentially critical, rail defects such as gauge corner cracking, there is a major requirement for dealing with these identified defects preventatively.

6.4.6 In terms of bridge and culverts, a total of 149 degraded or life-expired bridges and 11 culverts were renewed across the network. The scope of the bridge interventions varied from minor repair works to existing steel, masonry or concrete right up to full renewal of bridges that were life expired and beyond repair.

- 6.4.7 As noted by the *Working Group Report 2014* a key challenge over the current IMMAC period was the need to renew key points and crossings on the DART network. Over the period renewals were carried out at operationally critical locations across the DART network including renewal of points at Connolly Station and barrier machines, boom and control equipment renewals at the 10 DART level crossings. Large scale renewals were also carried out in Cork Yard, Limerick and Waterford stations as well as general renewal of life expired assets on the Galway and Belfast routes.
- 6.4.8 Similar to the above, in line with the challenge identified in the *Working Group Report 2014* there was continued investment in the Level Crossings programme with a total of 62 closures achieved over the period with improvements / upgrades made to another 223 crossings on public roads, including updated signage and road markings.
- 6.4.9 Cutting and embankment earth structures remain the most unpredictable asset bases. Interventions tended to be reactive following slip events. Preventative interventions were also carried out on all routes as arising risks were identified through the asset inspection process. A total of 48 assets were addressed over the 2014 to 2018 period. CCE's ability to deal with this key risk area has improved with the development and implementation of a risk model and decision support tool.
- 6.4.10 In terms of coastal defences, there are increasing challenges presented by climate change and sustained severe adverse weather events. A number of emergency interventions were required to save the railway from coastal erosion, in addition to a number of planned protection works projects which were successfully carried out at a number of sites, including Greystones, Bray, Kilcoole and Ballygannon.
- 6.4.11 As well as the above, the work programme over 2014 to 2018 included a wide range of maintenance activities, and some improvement works, to buildings and facilities across the network, while the funding provided also allowed for the general maintenance of the permanent way and associated tasks.

6.5. SET Outputs 2014 to 2018

Table 6.8 SET Expenditure (€m) 2014 to 2018.					
	2014	2015	2016	2017	2018
SET	48.2	49.3	48.0	74.0	67.0
<i>SET Maintenance</i>	32.1	31.5	33.0	37.5	39.2
<i>Signalling</i>	8.4	11.1	9.2	23.3	11.1
<i>Telecommunications</i>	6.2	5.4	4.3	11.7	14.1
<i>Electrification</i>	1.6	1.3	1.4	1.5	2.4
IMMAC Total	191.2	205.3	213.4	254.9	247.8
<i>SET as % of Total</i>	25.2%	24%	22.4%	29%	27%

6.5.1 SET is responsible for the maintenance and renewal of the signalling, electrical and telecommunications systems across the network and accounted for approximately 26% of average annual expenditure over the current IMMAC period. Expenditure in SET was below that required as compared to the steady state level established in the AECOM 2011 report (€69.2m per annum) over the period 2014 to 2016 and, despite significant increases in both 2017 and 2018, was also below the revised steady state level as set out in the *Rail Review* (€80.8m per annum) for those years.

6.5.2 Within SET the annual expenditure by category was as set out in **Table 6.9**.

Table 6.9 SET Expenditure (€m) by Category 2014 to 2018.					
	2014	2015	2016	2017	2018
Total SET €m expenditure	48.2	49.3	48.0	74.0	67.0
<i>% Labour</i>	57%	54%	59%	41%	45%
<i>% Materials</i>	36%	34%	27%	48%	40%
<i>% Overheads</i>	8%	12%	14%	11%	15%

6.5.3 As seen above, overheads as a percentage of SET expenditure has almost doubled over the period. This increase is attributed partly to an increased insurance charge and more significantly to the greater use of agency staff in recent years which are categorised as overheads. The dependency on agency staff is expected to decrease in the coming years in line with the planned recruitment of own staff.

6.5.4 SET maintenance comprises the bulk of expenditure in this area and the infrastructure asset management system records approximately 20,500 Scheduled Preventative Maintenance Work Orders and 8,000 Fault Repair Work Orders were completed annually on average over the period 2014 to 2018.

- 6.5.5 Signalling is also a major component of SET expenditure and a number of significant signalling improvements were completed at Cherryville Junction (2015), Limerick (2017) and Kilkenny (2018) which saw the renewal and replacement of obsolete systems and provided for the removal of speed restrictions with resultant improved journey times.
- 6.5.6 Electrification works are obviously DART focussed and as seen in **Table 6.8** expenditure in this area was relatively low over the period. This reflects constrained levels of current resources within the section and also difficulties in attracting suitable staff which have both impacted the ability to maintain a continuous level of expenditure. A number of smaller projects were progressed over the period and recent recruitment of a number of graduate engineers will allow for expansion of the planned work programme over the next IMMAC contractual period.
- 6.5.7 Expenditure on telecommunications was prioritised toward maintaining essential operational and safety systems and addressing imminent obsolescence issues. This prioritised work programme included –
- Partial renewal of the national backbone transmission network;
 - Upgrading of station services (e.g. public address systems; help points, CCTV etc.)
 - Renewal of communications/telephone systems (e.g. life expired telephones at level crossings, obsolete voice recorder equipment for safety critical communications).
- 6.5.8 The SET work programme has also allowed for the continued planning and development of the new Train Protection System (TPS) and GSM –R projects which will form a significant part of the work programme for 2020 to 2024.

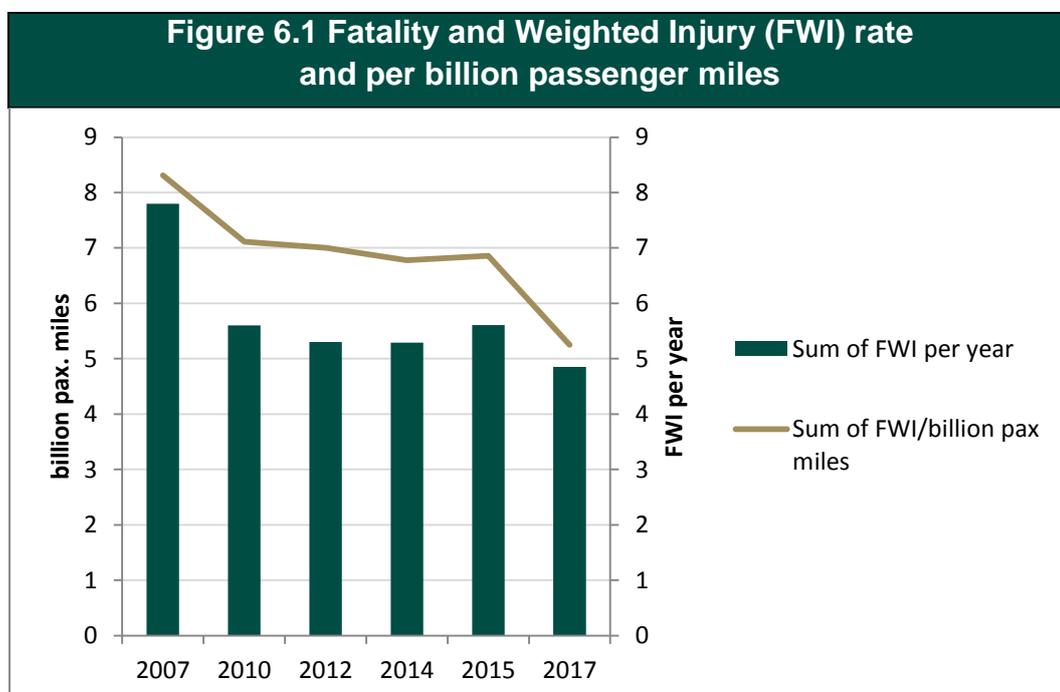
6.6 IMMAC 2014 to 2018 Outcomes

- 6.6.1 A key consideration in terms of the outcomes achieved over the period 2014 to 2018 is the impact on safety and passenger experience. In both areas there have been some notable improvements as a result of the investments made under IMMAC 2014 to 2018.
- 6.6.2 The Network Wide Risk Model (NWRM) is the key tool for assessing and evaluating risk across the organisation and for identifying trends or changes in risk profiles with a view to indicating at a high level the potential areas for investment so that risk is safely managed.

6.6.3 The NWRM is re-run every two years as required by the SMS unit. With each run of the model, the incident and data from the preceding two years is incorporated, the current timetable is incorporated, and infrastructure assets, rolling stock assets and soft asset ratings are reviewed and revised as necessary. Soft assets are the safety critical roles which influence safety risk. With each update an opportunity is taken to review the model logic and enhance where possible.

6.6.4 A key safety related performance indicator used internationally in the railway sector is the Fatality and Weighted Injury (FWI) rate. The most recent run of the NWRM shows IÉ at its lowest estimated risk level since its introduction in 2003. It should be noted that the model is particularly sensitive to single fatality events, such as a fatality at a level crossing, or an accidental fatality of a trespasser on the line, and the absence of such events in the 2 years data added at the last re-run would have been an important factor in achieving the current low risk estimate of 4.85 FWI.

6.6.5 **Figure 6.1** below shows the FWI rate and also the FWI rate per billion passenger miles, the latter of which highlights the significant reduction through the lifetime of the NWRM. There are now no sectors in the network with intolerable risks and all sectors are well below the upper limit of tolerability as set by IÉ.



6.6.6 There has been a notable improvement in the integrity of rail assets over the period also, with the total number of asset defects / failures declining year-on-year over the period 2014 to 2018 as can be seen in **Table 6.10**.

Table 6.10 Network Condition Assets Defects / Failures Recorded						
Defects / Failures	2014	2015	2016	2017	2018	2014 vs 2018
Structural defects	2	0	1	0	3	1
Track defects	37	39	19	22	30	-7
OHLE & Traction	1	1	1	2	3	2
Points Failure	580	470	544	506	533	-47
Signal failures	1062	832	764	637	556	-506
SET level crossing failures	1623	1471	1367	1238	1358	-265
Train detection failures	592	476	558	515	471	-121
HABD failure (hotbox)	57	37	37	49	30	-27
Total defects / failures	3954	3326	3291	2969	2984	-970

6.6.7 In terms of passenger experience, outputs recorded under both the CCE and SET work programmes have had a positive impact for passengers on a number of important routes in terms of reducing journey times, removing speed restrictions and improving reliability.

6.6.8 **Table 6.11** shows the fastest journey time by route over the period of the current IMMAC. A significant contributor to improved journey times across the Dublin to Cork/Limerick, Tralee and Waterford services has been the ballast cleaning programme as detailed in section 6.4.4, as well as the limited track relaying programme along the Dublin – Cork mainline.

Table 6.11 – Fastest Journey Time by Route 2014 to 2018					
	2014	2015	2016	2017	2018
Belfast*	02:00	02:00	02:05	02:05	02:05
Cork	02:30	02:30	02:15	02:15	02:15
Galway	02:11	02:10	02:11	02:11	02:11
Limerick	02:06	02:04	02:04	02:01	02:01
Sligo	02:55	02:58	02:55	02:55	02:55
Tralee	03:45	03:45	03:42	03:40	03:40
Waterford	01:50	01:50	01:50	01:48	01:48
Westport	03:02	03:05	03:02	03:05	03:06

**Belfast journey time was increased to improve timetabled reliability of service*

6.6.9 In terms of punctuality, **Table 6.12** shows the service punctuality levels across the network over the contractual period. This indicator is reported upon by the RU as part of its Public Service Contract with the National Transport Authority.

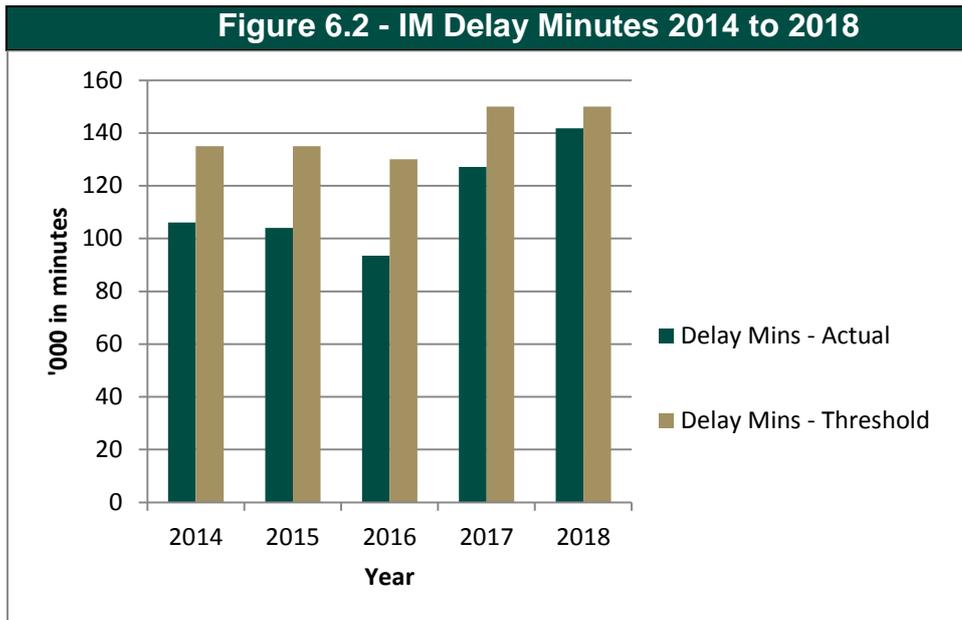
6.6.10 Performance in this area over the period is mixed and it should be noted that while punctuality is impacted by IM-attributable reasons there can be other non-IM attributable reasons also and the table below does not disaggregate those reasons. Examples of main non-IM reasons include operational RU issues, such as longer station dwell times, mechanical issues and other operational issues such as include weather and anti-social behaviour. The main IM-attributable reasons would include speed restrictions, weather (including low rail adhesion), points trouble and signal faults.

Table 6.12 – Punctuality by Route 2014 to 2018						
	Service	2014	2015	2016	2017	2018
0–10mins	Commuter AM Peak	98.5%	96.5%	98.4%	98.0%	98.8%
0–10mins	Commuter PM Peak	98.5%	98.9%	98.5%	98.0%	98.3%
0–5mins	Commuter OFF Peak	96.6%	97.9%	96.2%	94.3%	95.8%
0–10mins	DART AM Peak	98.6%	98.1%	98.2%	98.1%	98.3%
0–10mins	DART PM Peak	97.8%	97.7%	98.0%	97.4%	97.7%
0–5mins	DART OFF Peak	96.3%	95.7%	94.7%	93.2%	94.1%
0–10mins	Total Intercity	97.2%	96.7%	97.0%	97.0%	97.5%
0–10mins	Limerick - Galway	92.3%	93.0%	90.0%	97.5%	99.2%
0–10mins	Limerick - Waterford	98.7%	98.0%	97.9%	97.7%	99.4%
0–10mins	Limerick - Ballybrophy	97.5%	95.1%	98.7%	98.1%	99.5%

6.6.11 Another indicator which is recorded as part of the RU's Public Service Contract with the National Transport Authority is customer satisfaction and their views on service value for money. On both measures there are improvements recorded over the period 2014 to 2018. However, as with punctuality it should be noted that these measures are obviously influenced by both IM-attributable reasons and non-IM attributable reasons and **Table 6.13** does not disaggregate.

Table 6.13 – Customer Satisfaction and Service Value for Money					
	2014	2015	2016	2017	2018
Intercity Services					
Customer Satisfaction	90%	92%	93%	93%	93%
Service Value for Money	55%	53%	55%	58%	61%
DART & Commuter Services					
Customer Satisfaction	89%	94%	95%	95%	94%
Service Value for Money	45%	53%	57%	63%	66%

6.6.12 In terms of delay minutes, there was noticeable improvement in performance over the period 2014 to 2016; however, this improvement was reversed in 2017 with an approximate 35% increase. The IM states this increase was as a result of more services operating in 2017 and 2018 arising from the Phoenix Park Tunnel route to Dublin City Centre. Furthermore, two additional reporting routes were included into TOPS – Mallow to Cork and Limerick to Galway. **Figure 6.2** shows the total IM delay minutes per annum over the period as well as the annual performance threshold in each year also.



6.7 IMMAC 2014 to 2018: Deferred Expenditure

6.7.1 Notwithstanding the outcomes that have been achieved over the period 2014 to 2018, the level of investment available meant a greater focus on reactive maintenance rather than renewal with the result that there is an increasing amount of deferred expenditure now apparent across the network.

6.7.2 Across the CCE areas of activity, the rate of renewal in track, bridges and culverts and level crossings in particular was significantly below the optimal levels identified in the *Rail Review*. The impact of these deferrals is reflected in the almost 10% increase in 'steady state' funding levels identified by the *Rail Review* for the CCE work programme over the period 2017 to 2030.

6.7.3 In SET, a number of key signalling works have been deferred across the network and which will now be considered as part of the work programme for 2020 to 2024. These include –

- Cork yard which has mechanical signals and pneumatically operated mechanical points that are electrically detected;
- Geashill interlocking, consisting of 25km of single line Portarlington - Athlone signalled in 1976, which is life expired with a risk of wiring degradation as occurred in Cherryville;

- Portlaoise interlocking, consisting of 11.3km of line Portlaoise – Portarlinton signalled in 1976, which is life expired with a risk of wiring degradation as occurred in Cherryville; and
- Portlaoise to Ballybrophy, consisting of 19.3km originally signalled in 1976, which is life expired and monitored through Portlaoise interlocking.

In addition a number of planned telecommunications works have been deferred and the rate of system renewals curtailed to align with the funding available over the period 2014 to 2018. These deferrals include –

- Remedial works on trackside cable network in excess of 20 years old, both fibre optic and copper cables, to maintain continued performance;
- Refurbishment of trackside cable route infrastructure to maintain the security and integrity of the networks;
- Renewal of the access layer of the backbone transmission network (obsolete PDH technology);
- Improvements to the environmental controls, security and monitoring of equipment rooms accommodating safety critical systems; and
- System enhancements to improve the availability and management of critical networks.

7. IMMAC 2014 to 2018: Performance Monitoring

7.1 Monitoring Framework

7.1.1 The CRR is the independent monitoring body appointed pursuant to Article 9 of the Regulations to monitor the performance of the IM in relation to its obligations under the IMMAC. The Regulations state that the functions of the CRR are –

- a) To act as the independent body to monitor the performance of the infrastructure manager in respect of its obligations under the contractual agreement;
- b) To arbitrate where a dispute arises between the parties as to the requirements for compliance with the contractual agreement;
- c) To approve the performance monitoring system developed by the infrastructure manager;
- d) To advise the Minister of –
 - a. any persistent failure-to-perform trends of the infrastructure manager; and
 - b. the detail of any performance improvement plan including any decision regarding any changes to the prioritisation of works.

7.1.2 The IMMAC requires the CRR to report on both a quarterly and annual basis on the performance of the IM in relation to its obligations. There are quarterly meetings held to discuss the performance of the IM at which DTTAS, the CRR and the IM are represented.

7.1.3 Following the *Working Group Report 2014* there was engagement between the CRR and the IM in relation to establishing an approved performance monitoring system. The system agreed established a basic set of criteria against which the IM's performance could be monitored by the CRR.

7.1.4 The five agreed criteria are –

- Financial performance
- Asset condition
- Delay minutes (attributable to the IM)
- Temporary Speed Restrictions (or TSRs) limits (daily exceedances)
- Service cancellations (attributable to the IM).

7.1.5 For three of the above criteria – IM delay minutes, TSR limits and service cancellations- annual performance thresholds were included as part of Schedule D of the IMMAC.

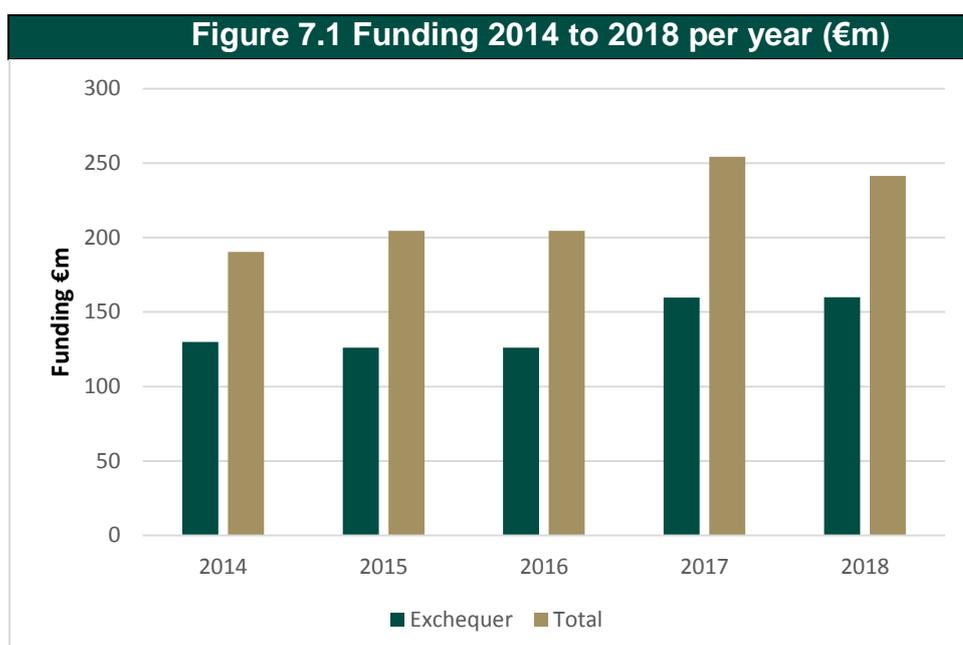
7.1.6 However, the CRR state that these annual performance thresholds have varied year-to-year since 2016 and the current IMMAC does not provide for such variance to be subject of any input from, and/or agreement with, the CRR. **Table 7.1** details the annual performance thresholds in 2014 and 2018 for IM delay minutes per service type and shows the variance between both years.

Table 7.1 Annual Performance Thresholds – IM Delay Minutes			
	InterCity	Connecting	Commuter
2014	60,221	13,544	56,235
2018	56,942	12,812	80,246

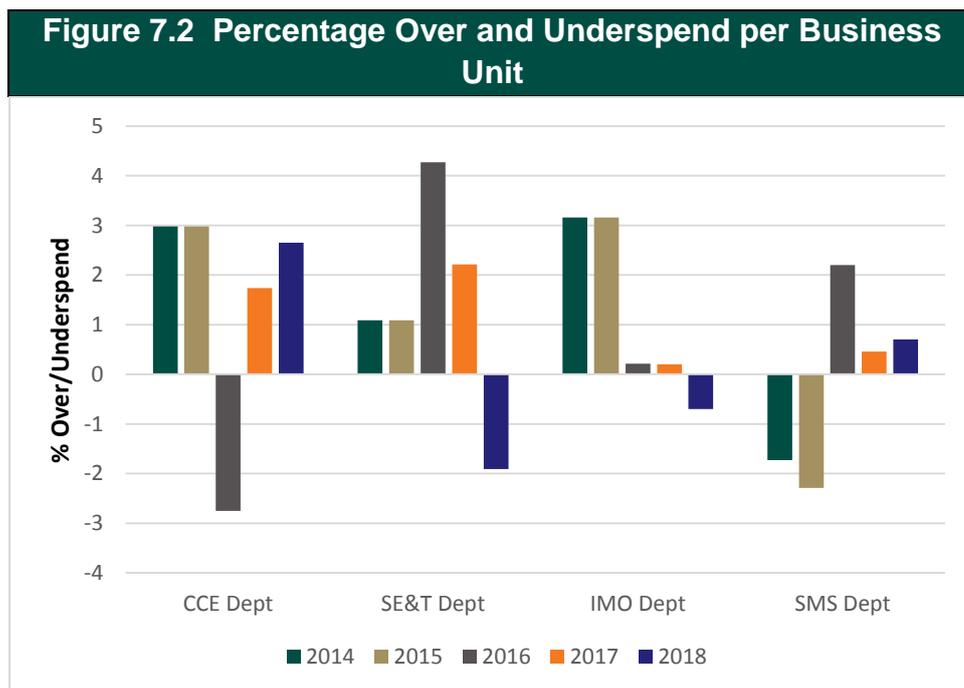
7.2 Financial Performance

7.2.1 Financial performance is a criterion against which performance is monitored by the CRR; however, it is not subject to any annual performance threshold and the indicators used to measure performance are basic and essentially measure funding trends and planned vs. actual expenditure by IM business units.

7.2.2 In terms of funding trends, **Figure 7.1** shows total funding over the period 2014 to 2018 and the funding source in each year.



7.2.3 In relation to expenditure by business unit, **Figure 7.2** shows that actual expenditure per business unit was in line with budgeted expenditure over 2014 to 2016. However, 2017 witnessed some significant variances in both the CCE and SET units. In CCE the overspend related to land acquisition costs required to facilitate level crossing closures, while in SET the overspend related to additional works and the earlier commencement of other works originally planned to occur in 2018. All variances were within the contractually permitted levels as detailed in Schedule C of the IMMAC.

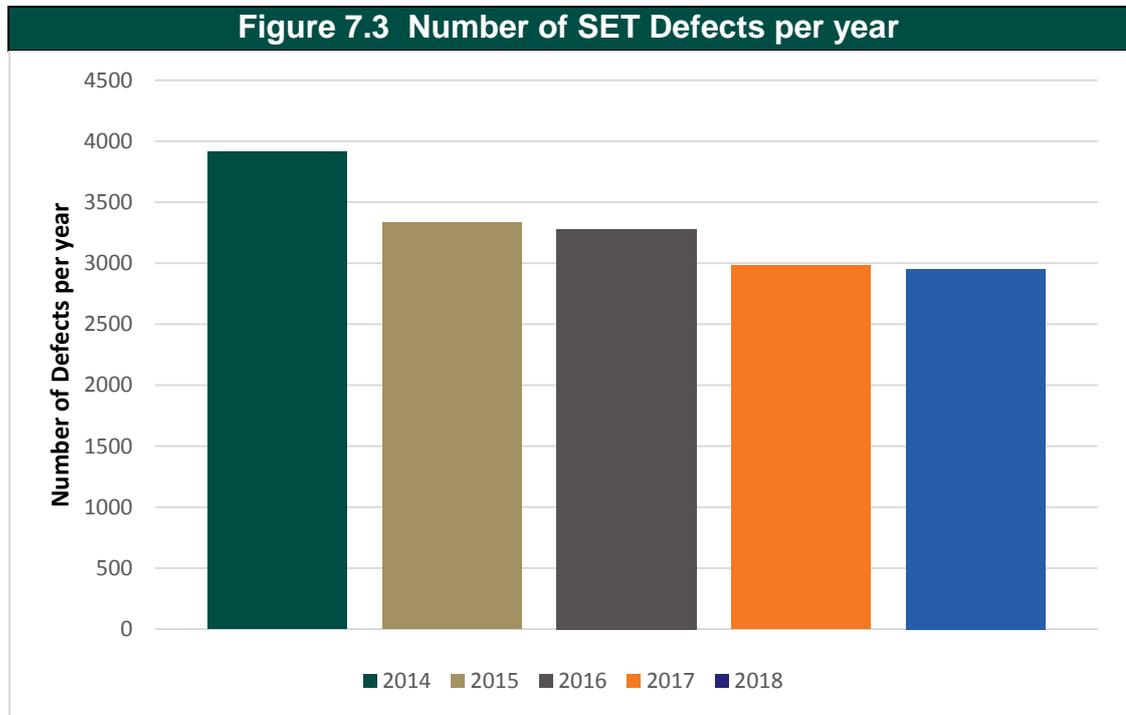


7.3 Asset Condition

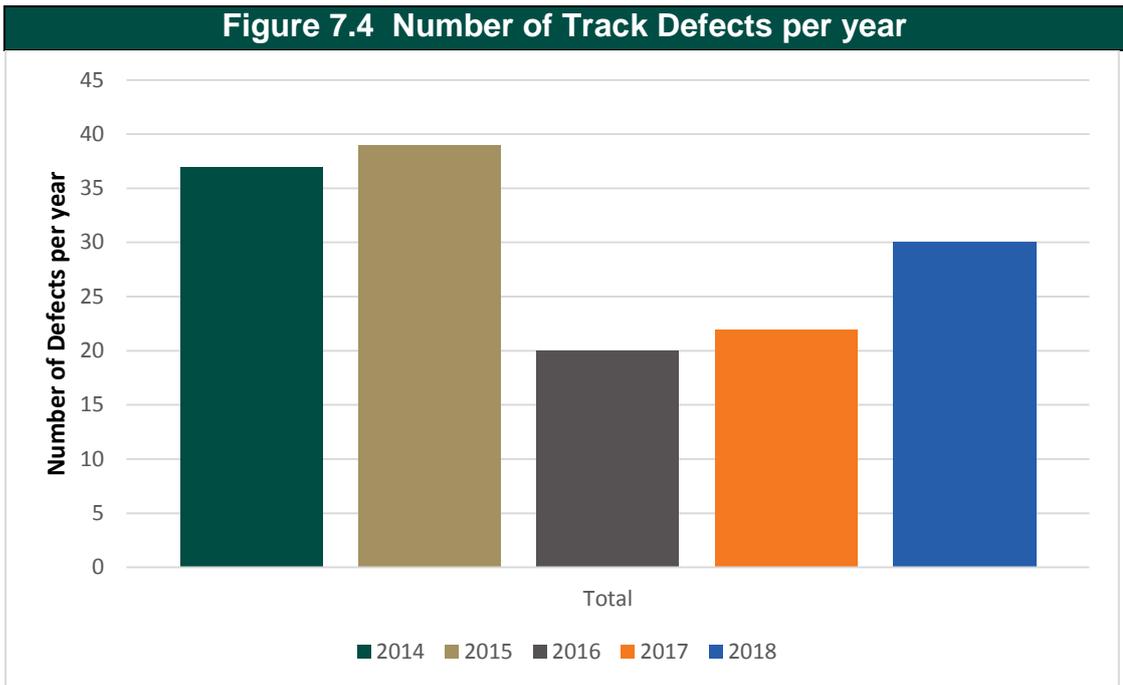
7.3.1 Asset condition is another of the five performance criteria and similar to financial performance it is not a criterion with an annual performance threshold rather it is provided for information purposes.

7.3.2 The network asset condition is assessed by examining and reporting on specific asset defects. These include structural failures of viaducts, bridges, tunnels, culverts, cuttings or embankments. Track defects including broken rails, rail buckles and broken fishplates are also reported on, as are a range of SET defects. SET defects include the failure of overhead lines, points, signal, SET level crossings or hot axel box detector equipment. Recording of these failures can give an overview of the network condition and potentially indicate failure trends.

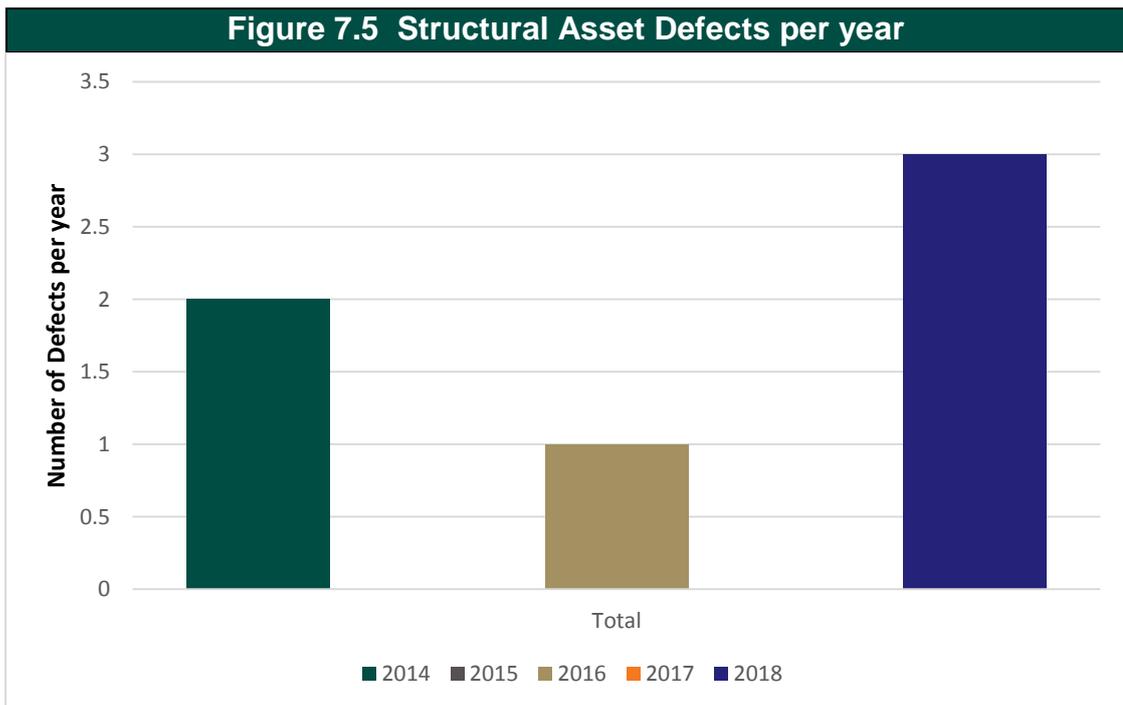
7.3.3 The overall trends in total SET defects show a 24.7% reduction reported over the 2014 to 2018 period going from a figure of 3915 in 2014 to 2951 in 2018. A review of the defect type show the main reductions relate to signal failures (47% reduction) and to SET level crossing failures (17% reduction). No trend is evident in all other areas.



7.3.4 The overall level of track defects is low with a noted drop in total defects from 2016 onwards. This is primarily due to a significant drop in broken fishplates in 2016 and 2017 with a 21% reduction recorded in both years for that category of track defect. Other track defect categories – broken rail, rail head defects and track buckle – remained broadly similar over the period albeit at a very low level overall (zero instances in the case of track buckle). It is the CRR’s view that the relevance of monitoring fishplates and their inclusion in a quarterly report should be reviewed as these are considered more suited as an indicator of developing trends rather than as a performance indicator.



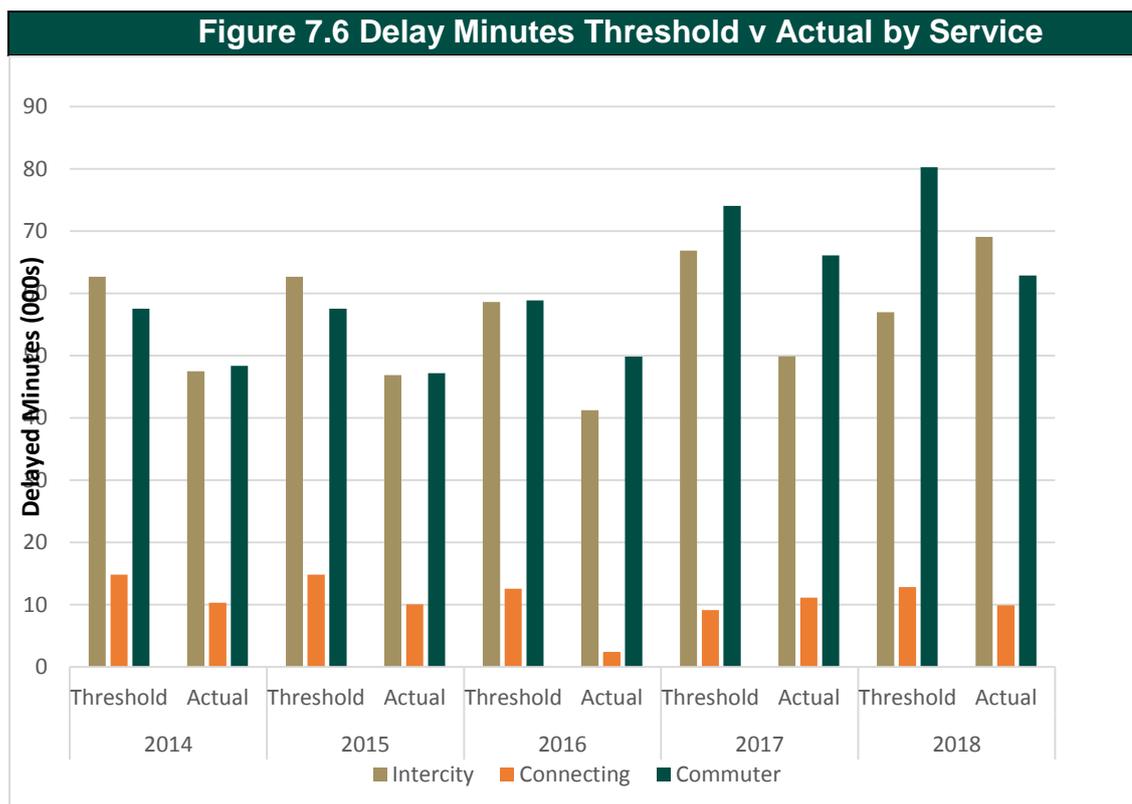
7.3.5 In terms of structural defects, the overall level of failure is extremely low, indeed in 2015 and 2017 there were none, and the value of this particular criterion is therefore questionable. There is a similar limitation for certain track defects. Where the defect is linked to failure it is the view of the CRR that their value as a performance criteria should be reviewed to determine if there are alternative indicators suitable for use.



7.4 Delay Minutes

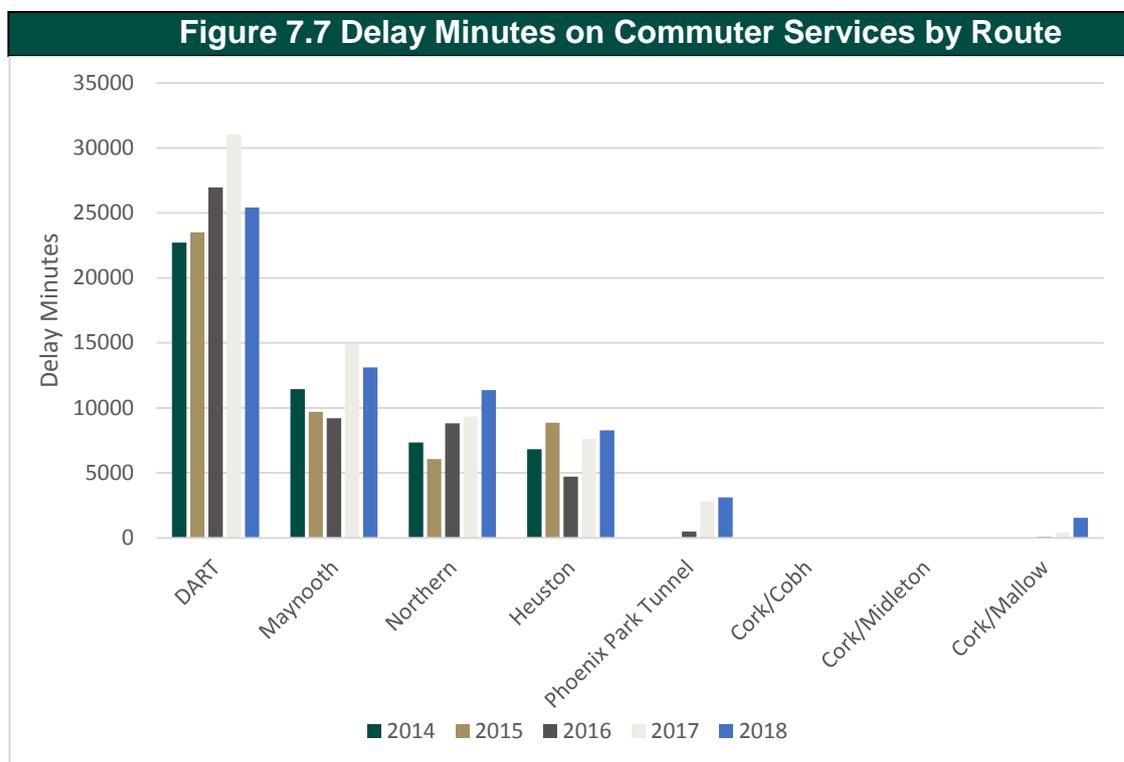
7.4.1 Delay minutes captures delays to services which are attributable to the IM as a result of infrastructure failures such as issues relating to signalling, power supply or track. These delay minutes are separate to the delay minutes attributed to the RU which are reported to the NTA under the Public Service Contracts.

7.4.2 As previously noted, the annual performance threshold for delay minutes varied on a year to year basis in each of the constituent services (InterCity, Commuter, Connecting) since 2014 and the current IMMAC does not require any agreement or consultation between the IM and the CRR in relation to such variance.



7.4.3 In terms of delay minutes by route, it is noticeable that there is a relatively significant trend upward in IM delay minutes on the DART network over the period 2014 to 2017. The IM attributes these increases to a greater number of signal and points failures in the Connolly and Howth Junction areas which

are compounded by the increased service levels on the DART network. **Figure 7.7** shows IM delay minutes by route.



7.5 TSR Limits

7.5.1 TSRs (Temporary Speed Restrictions) are mitigating measures, primarily for reasons of safety, imposed as the need arises on any part of the rail network (incl. at level-crossings) and at any time.

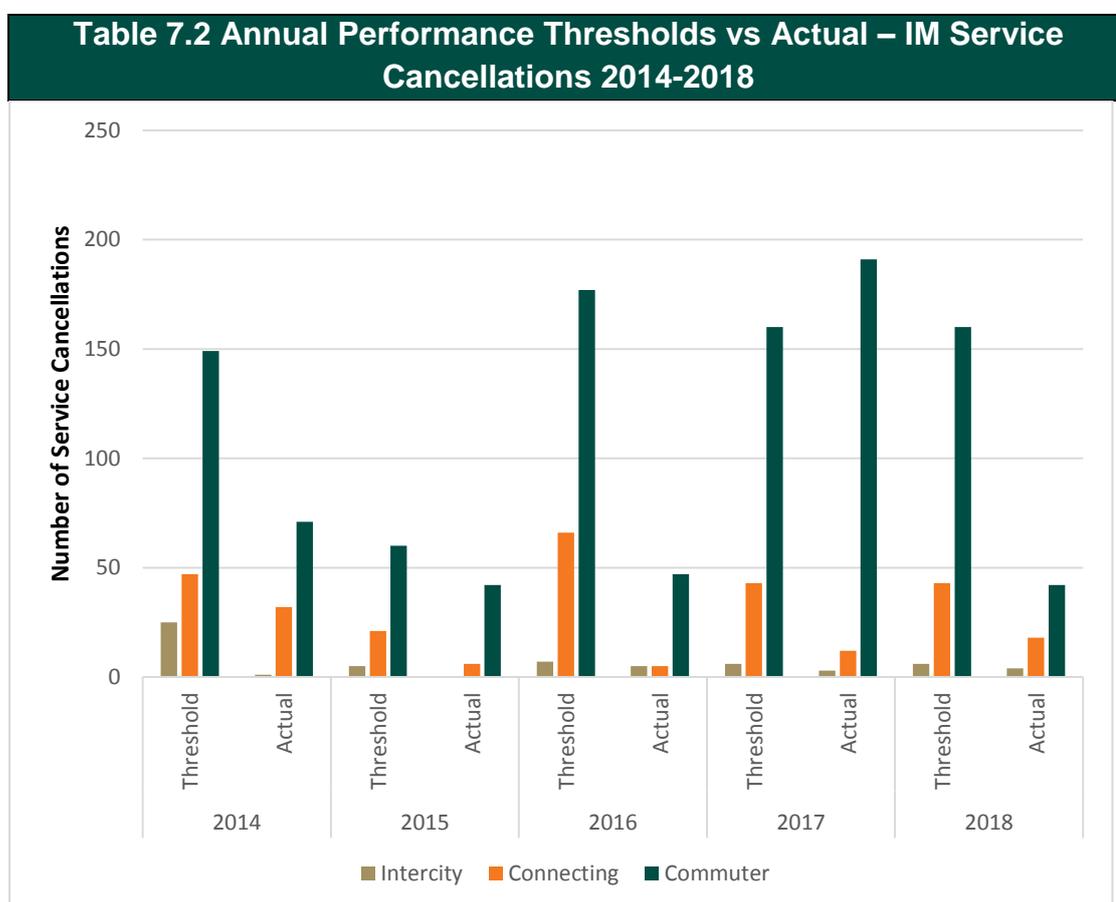
7.5.2 TSRs are another of the criteria which have annual performance thresholds included within Schedule D of the IMMAC; however the annual performance threshold set for TSR's per line has only been exceeded three times between 2014 and 2018, the TSR exceedance was on the Dublin – Cork line during the line improvement works. There has been no TSR exceedance recorded on any line for 2017 or 2018 (to date).

7.5.3 Given the performance over the period of the contract as compared to the annual performance threshold set it is questionable if the performance indicator as currently monitored and reported upon has value.

7.6 Service Cancellations

7.6.1 Service cancellations records the numbers of services which are cancelled due to an infrastructure incident, examples of these include axle counter faults, signalling works and OHLE faults. Service cancellation is another criterion subject to annual performance thresholds and as with those others the threshold has varied since 2016. However, unlike the other criteria service cancellations is the only one which is linked to “persistent failure to perform” penalties.

7.6.2 Annual performance thresholds vs Actual for InterCity, Connecting, Commuter services for 2014-2018 are as set out in **Table 7.2**.



7.6.3 It is important to note that the IM categorises a service as ‘cancelled’ if that service has been fully cancelled. Where a partial service operates, it is not deemed ‘cancelled’.

7.7 CRR perspective on current performance monitoring system

- 7.7.1 The functions of the CRR as independent monitoring body is primarily a financial regulatory role and as the national safety authority in the context of the Railway Safety Directive. The statutory independence of the CRR ensures that monitoring of the IMMAC is undertaken in an impartial and unbiased manner. The primary role of the CRR over the period 2014 to 2018 has involved monitoring and reporting on the criteria within the agreed performance monitoring system.
- 7.7.2 Financial performance has been based on the comparison of actual versus planned expenditure and the request for explanations where they have been either over- or under- spends. The CRR note that it does not currently have specific financial expertise to undertake detailed audit or analysis of the financial expenditure. The availability of such a service is seen by the CRR as critical for its continuing role.
- 7.7.3 The CRR note that the performance monitoring system developed by the IM and approved by the CRR has remained consistent for the duration of the contract. However, the CRR has identified difficulties aligning the criteria with the specifics of the annual programme of work identified with the annual contract. It is also noted that the annual performance thresholds for the delayed minutes and service cancellations have varied year on year from 2016 without any input or consultation with the CRR.
- 7.7.4 Data is provided in relation to network condition, delay minutes and TSRs by the IM to the CRR to inform its view on the need for, and scope of, a Performance Improvement Plan to be agreed with the IM. However, the data provided is limited and not sufficient for data analysis. TSR data for example has limits that are very rarely exceeded while data on IM delay minutes has an annual performance threshold which is variable. Data on service cancellations attributable to the IM is the only criteria linked to persistence failure to perform penalties. Again this criterion has specified levels relating to an annual performance threshold but these have varied year on year since 2016. The basis on which KPIs can be amended warrants further discussion.
- 7.7.5 While there is a need for accountability and impact for failure to meet performance targets the CRR believes the concept of financial penalty requires consideration, particularly in a context where funding provided is below that required for steady state.

- 7.7.6 The CRR believes that PRIME KPIs for performance benchmarking, as published by the Platform of Rail Infrastructure Managers in Europe, should be considered in the context of the next IMMAC.
- 7.7.7 The provision of certain data to both DTTAS and the CRR also needs to be reviewed in the context of what use each body makes of the data provided.
- 7.7.8 Targets set for performance monitoring should be to some degree challenging in that they should drive improvement in services linked to the maintenance of the infrastructure funded by the contract. Data on targets should also have the ability to extract data on specific geographic locations either instead of or in addition to national performance targets. Consideration should also be given to linking expenditure on infrastructure maintenance to elements such as passenger journeys where relevant.

8. BREXIT

- 8.1 The impact of Brexit on issues specific to the IMMAC is considered to be limited; however, obviously there are potential regulatory and operational issues which the CRR and IÉ are both considering.
- 8.2 Both domestic and international rail transport sectors are regulated by EU law. Cross border passenger rail services run from Dublin to Belfast in joint partnership between IÉ-RU and Northern Ireland Railways. At present, the Dublin-Belfast operation is an international rail passenger service for the purposes of EU railway safety and rail regulatory regulation.
- 8.3 Subject to the model of Brexit that the UK chooses to pursue there exists the potential for very real and negative impacts on those services. Following Brexit the Dublin-Belfast rail passenger service would no longer be an international passenger service for the purposes of EU and associated national railway law. The roles of our national competent authorities (the CRR as national safety authority and the Railway Accident Investigation Unit as national railway accident investigation body) with responsibility for railway regulation, railway safety and railway accident investigations involve interface, co-operation and reporting between EU Member States so these may have to be reviewed based on the final form of Brexit.
- 8.4 Some of the EU ‘parent’ rail legislation provides for measures that apply to third countries but, to date, these provisions were not applicable for Ireland and did not require transposition into national law.
- 8.5 The Dublin – Belfast line is currently identified as a “core” network for the purposes of the EU’s Trans-European Networks Transport (TEN-T) Regulation and is therefore eligible for funding in line with the Regulation and its associated funding stream, the Connecting Europe Facility. The UK’s exit from the EU will mean the route no longer forms part of this EU network and thus will no longer be eligible for such funding.
- 8.6 IÉ, both the RU and IM, is undertaking contingency and preparedness planning to identify relevant issues and the matter is under constant review ahead of the UK’s exit from the EU. The CRR is assisting in the process.

9 IMMAC 2020 to 2024

9.1 IM summary work programme 2020 to 2024

9.1.1 In line with the conclusions of the *Rail Review*, the IM has developed a summary work programme based on a 'steady state' funding requirement of approximately €280m per annum in 2018 prices (detailed further in Section 9.2).

9.1.2 The summary work programme is designed to address the key challenges identified by the IM in the coming contractual period, which are detailed below:

- **Addressing infrastructure safety risks:** There is a need to identify, on an ongoing basis, the major contributors to infrastructure safety risks throughout the network and to address these (bridges / culverts, cuttings / embankments, points and crossings, level crossings, coastal defence) on a planned rather than a reactive basis.
- **Buildings and Facilities:** Mechanical & Electrical mandatory servicing, inspection, testing and certification of all station systems including power, lighting, heating, fire detection, automated doors and lift/escalators require to be carried out on an on-going prioritised basis to achieve basic legislative and regulatory compliance in these areas. There is also a need for planned interventions for structural repairs and upgrades along with upgrades of aged electrical wiring and life-expired mechanical heating & hot water systems.
- **DART Infrastructure and Systems:** Much of the DART infrastructure and systems date back to the early/mid 1980s and other more recent assets require periodic renewals. Required maintenance/upgrades (apart from the track, buildings and facilities and signalling) include points and crossings, traction, OHLE and telecommunication systems.
- **Miscellaneous/general maintenance programmes (CCE & SET):** There is an ongoing requirement for a wide array of works that include regular asset inspections including remote monitoring, reactive fault repair, planned cyclical maintenance and preventative measures (bridge strikes / level crossing collisions).
- **Safety Critical Systems:** There is a need to accelerate the delivery of a number of safety critical systems including GSM-R and TPS over the

next contractual period. The prioritisation afforded to delivery of these safety critical systems will require consideration of the funding profile of other work-programme areas.

- **Signalling systems:** Signalling is a vital safety critical component of the railway network. Arising from a backlog in works there is a need for signalling systems renewal / upgrades to eliminate/offset obsolescence, reduce risk and to improve the reliability of the rail services.
- **Track:** There is a need to continue with the current rail milling programme and ballast cleaning programme and extend this to other routes and particularly the Belfast route. There is also need to address the backlog of track renewal works mainly on the Cork, Belfast and DART routes given the age of the track on these routes. The Cork route is the major priority to achieve 100 mph operations as the standard for the route.

9.1.3 The summary work programme submitted by the IM is as per Table 9.1 below.

Table 9.1 IM Summary Work Programme 2020 to 2024
IMO
<ul style="list-style-type: none"> • Continuation of current activities, further development of systems including Mobile Response Teams and preparatory activities for new NTCC in 2023.
SMS
<ul style="list-style-type: none"> • Continuation of current SMS activities and further development of systems in line with 4th Railway Package and audit and inspection recommendations. • Ongoing development of asset management systems for mobility, optimising investment and delivering of value for money.
CCE
<p><u>CCE areas of investment subject to prioritisation *:-</u></p> <ul style="list-style-type: none"> • Increased ballast cleaning and rail milling programmes, increased track renewal programme and track system and component renewal (with prioritisation of Cork, Belfast and DART lines and the Galway route thereafter). • Prioritised programme of bridge renewals and repairs throughout the network. • Risk and condition based programme of P&C asset renewal particularly in the DART area.

- Coastal protection asset renewal in conjunction with east coast county council.
- Risk and condition based programme of urban and rural fencing renewal
- Level Crossings Investment Program addressing high risk assets through elimination or implementation of traffic light warning systems, general level crossing closures and improvements in the interface risk at crossings
- Prioritised, risk based programme of cutting and embankment (C&E) asset improvements combatting adverse weather events, and maintenance and renewal interventions
- Programme of building and facilities (B&F) upgrade works, customer interface improvements and regulatory compliance across the asset base
- Technical programmes, remote asset monitoring, on-going investment in new technologies / technical programmes including Track Recording Vehicle, etc.
- Day to day maintenance of the Per Way – track patrolling, mechanical maintenance etc.
- Limited provision for basic maintenance and renewal of the lightly used lines.

**Prioritisation required to facilitate use of CCE monies to address issues which may arise on closed and abandoned lines.*

SET

SET areas of investment subject to prioritisation:-

- Investment in signalling renewal at key locations (Dublin – Cork route, Portarlinton - Athlone, Cherryville – Waterford and Malahide – Dundalk) to address deferrals from IMMAC 2014 - 2019.
- A significantly higher 'electrical' spend rate on traction and OHLE to address the high level of deferred works in IMMAC 2014 – 2019 and to accommodate future anticipated developments.
- Renewal of telecommunications legacy systems deferred in IMMAC (2014 – 2019) along with a number of other renewals falling due over the next five years.
- Delivery of GSM-R project on a phased basis by 2022.
- Accelerated delivery of TPS.
- Increased funding for a planned cyclical maintenance, fault repair and general refurbishment programme to compensate in part for an inadequate renewal programme.
- Limited provision for basic maintenance and renewal of the lightly used lines.

9.2 IMMAC 2020 to 2024: Funding requirements

9.2.1 The importance of ensuring steady state levels of investment was recognised in the IMF’s *Public Investment Management Assessment Ireland*^[1] report which noted that “adequate levels of maintenance funding are critical for sustainable service delivery from capital investment”.

9.2.2 The Review Group’s assumption is that the railway infrastructure is at steady state when it is capable of delivering the level of services required by the RU on a reliable, cost effective and consistent basis and with a minimum of works related TSRs. Under this scenario the required annual level of investment in maintenance and renewal is predictable and does not vary significantly from one year to the next.

9.2.3 At steady stated the status of the infrastructure is such that the major emphasis is on regular maintenance and timely renewal of assets before they become obsolete or unnecessarily expensive to maintain. Under a steady-state scenario infrastructural renewal works can be scheduled on a predictable basis and KPIs (safety, operations, value for money) can be maintained or improved upon on a year by year basis.

9.2.4 The revised level of annualised steady state funding was established as part of *Rail Review*. **Table 9.2** shows this revised figure and then incorporates issues (such as inflation etc.) which have arisen since publication of the *Rail Review* to identify the steady state funding requirement over the period 2019 to 2024. It should be noted that this is an annualised and averaged figure based on the identified funding requirement as set out in the *Rail Review Report*.

Table 9.2 IM steady state funding requirements					
	2020	2021	2022	2023	2024
IM steady state level (€m) (<i>Rail Review</i>)	275.8	275.8	275.8	275.8	275.8
Required IM funding (€m) (including impact of forecasted inflation / wages / material etc.)	283.6	286.6	289.5	292.7	295.9

9.2.5. In order to support the summary work programme identified in **Table 9.3**, the forecasted expenditure per IM business unit over the period is –

^[1] IMF (2017); [Ireland : Technical Assistance Report-Public Investment Management Assessment](#)

Table 9.3 IM Forecasted Indicative Expenditure per IM business unit					
	2020	2021	2022	2023	2024
Required IM funding (€m)	288.3	291.4	295.3	298.5	301.4
<i>IMO</i>	29.0	29.4	29.9	30.4	30.9
<i>SMS</i>	13.0	13.8	13.9	14.1	14.3
<i>CCE</i>	165.1	166.0	167.0	168.0	169.0
<i>SET (incl. accelerated TPS*)</i>	81.2	82.2	84.5	86.0	87.2
Total Forecasted Expenditure (€m)	288.3	291.4	295.3	298.5	301.4

**Train Protection System*

The above Table provides an indicative outline per business unit of forecasted expenditure over the period; however, actual expenditure per business unit may vary and will be determined by the IM in line with its annual work programme as provided for by the IMMAC.

9.3. IÉ Strategic Plan 2020 to 2024

9.3.1. As noted by the European Commission's *Communication on Multi-Annual contracts for rail infrastructure quality*, any agreed multi-annual contract should be consistent with the IM's business plan.

9.3.2. IÉ's corporate *Strategic Plan 2020 to 2024* was submitted to D/TTAS in June 2019 and reviewed by NewERA. In addition, a copy of the IM's submission on the IMMAC 2020 to 2024 was also reviewed by NewERA.

9.3.3. In relation to the IM, the *Strategic Plan 2020 to 2024* affirmed the funding requirement over the period 2020 to 2024 to be as set out in **Table 9.4** with the forecasted revenue from access charges over the period also shown.

Table 9.4 IÉ Strategic Plan 2020 to 2024 IM Funding Requirements					
	2020	2021	2022	2023	2024
IM Funding Requirements (€m)	288.3	291.4	295.3	298.5	301.4
<i>Of which –</i>					
<i>Exchequer Funding</i>	199.7	202.5	205.4	208.6	211.5
<i>Forecasted minimum access charges (€m)</i>	88.6	88.9	89.9	89.9	89.9

9.4. IMMAC 2020 to 2024: Exchequer funding profile

9.4.1. As noted in the National Development Plan, and reflective of the recommendations of the IMF's *Public Investment Management Assessment Ireland*⁴, the funding priority for the rail network is to protect the investment already made in the network and direct investment toward maintenance and rehabilitation expenditure to prevent degradation of the existing capital stock in order to regain and maintain at a steady state.

9.4.2. In line with this funding priority, Government has committed toward the following funding profile to support delivery of IMMAC 2020 to 2024 –

Table 9.5 IMMAC 2020 to 2024 : Exchequer Funding Allocations				
2020	2021	2022	2023	2024
€199.7m	€202.5m	€205.4m	€208.6m	€211.5m

9.4.3. The exact funding allocations outlined in **Table 9.5** are subject to the voted expenditure allocations as published in the Revised Estimates for Public Services each year.

9.4.4. However, subject to the above, it is noted that the funding profile outlined in **Table 9.5** together with the forecasted access charges detailed in **Table 9.4**, result in the total required IM funding level to be attained in each year of IMMAC 2020 to 2024.

9.5. IMMAC 2020 to 2024: Expected Outcomes

9.5.1. Both the IM's submission on IMMAC 2020 to 2024 and IÉ's *Strategic Plan 2020 to 2024* provides a number of expected outcomes based on a steady state expenditure profile as compared against non-steady state.

9.5.2. The IM's submission details the main benefits from steady state investment levels over the period as –

- Improved track quality
 - Potential for further journey time improvements, particularly on the Dublin – Cork line which would also benefit services on other mainline routes subject to the delivery of a five year track renewal programme.

⁴ IMF (2017); Ireland : [Technical Assistance Report-Public Investment Management Assessment](#)

- Improved service reliability and punctuality
 - Lower incidents of disruptive events associated with asset failures, particularly aged SET assets, and severe weather conditions.
- Improved safety
 - Targeted renewal of high risk assets including bridges, embankments, train protection and other aged SET assets.
- Lower life cycle costs
 - Move toward proactive maintenance and renewal rather than reactive repair should result in lower life cycle costs for key assets such as track, structures and SET assets.

9.5.3. IE's *Strategic Plan 2020 to 2024* contains a number of Key Performance Indicators which depict expected outcomes based on both a steady state model and an alternative funding profile based on previous levels of Exchequer allocations (described here as 'non-steady state').

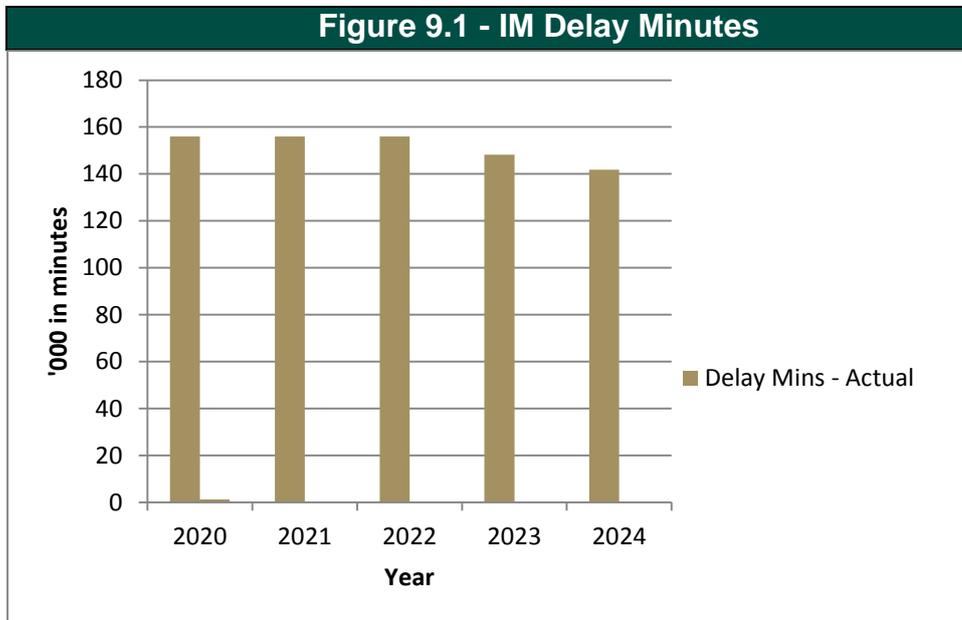
9.5.4. As noted in section 6, a key consideration in terms of the outcome of IMMAC related expenditure is the impact on safety and expenditure is prioritised toward safety related measures at all times. As stated in section 6.6, the Network Wide Risk Model (NWRM) is the key tool for assessing and evaluating risk across the IM's activities. The NWRM is re-run every two years and the last re-run in 2017 estimated a collective risk of 4.85 FWI (fatality weighed index), and made a prediction for 2022 of a 14% risk increase to 5.52 FWI per year in 2022.

9.5.5. This 5 year risk prediction, takes into consideration

- the asset deterioration predicted by engineering departments; and
- the projected increase in passenger train miles and passenger journeys.

9.5.6. The model run does not account for any asset upgrades or renewals planned to be undertaken during the 5 year period, as part of IMMAC 2020 - 2024, or other capital investment. As assets are renewed or upgraded, this should result in improved asset readings in the model, which all other things being equal, will result in a reduction in the calculated risk in re-runs of the model over the next five years.

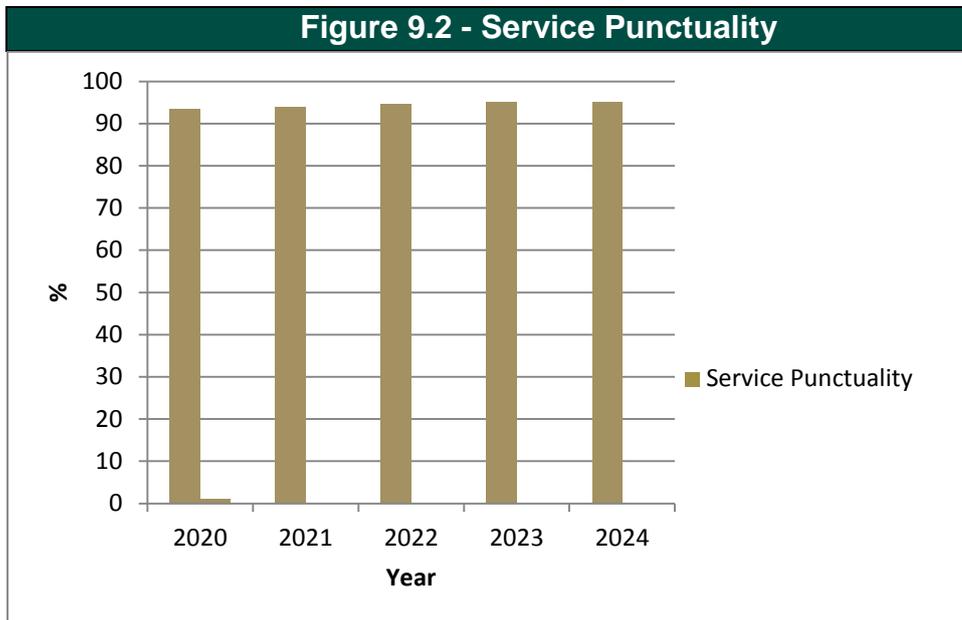
9.5.7. **Figure 9.1** shows the expected outcomes in relation to IM attributable delay minutes over the period 2020 to 2024. Over the contract period, based on a steady state funding level, annual IM delay minutes are expected to decrease by approximately 9% which will benefit passengers on the network.



Source: IÉ Strategic Plan 2020 to 2024

9.5.8. In terms of service punctuality, **Figure 9.2** displays the expected performance over period based within the 0 - 10 minute range. It is forecasted that by 2024 and under a steady state funding level service punctuality will be at 95% as compared to previous forecasts of circa 87% under a non-steady state funding level⁵.

⁵ As noted in IÉ Strategic Plan 2020 to 2024



Source: IÉ Strategic Plan 2020 to 2024

9.6. Network Enhancements

9.6.1. As noted in section 2.7, funding provided under the IMMAC relates specifically to maintaining and renewing the railway infrastructure and network enhancement projects are typically funded under separate arrangements.

9.6.2. Over the period 2020 to 2024, and in line with the commitments made in the National Development Plan, there is a significant programme of investment planned for the rail network.

9.6.3. From the perspective of the IM, the most significant projects planned include –

- Construction of a new National Train Control Centre;
- Completion of the City Centre Re-signalling project; and
- Commencement of the DART Expansion programme.

9.6.4. Funding for the above projects will be provided to IÉ through the NTA and funding for all of these projects is over and above the funding to be provided under the IMMAC 2020 to 2024.

9.7. Lightly Used Lines

9.7.1. The issue of lightly used lines was considered by the *Rail Review* which was subject to a public consultation. The *Rail Review* identified four routes on which patronage and financial performance, as compared to the network as a whole, was considered to be poor –

- Limerick to Ballybrophy
- Limerick Junction to Waterford
- Limerick to Galway
- Dublin to Rosslare

9.7.2. The *Rail Review* provided detailed analysis in terms of patronage levels and the levels of Exchequer financial support required to operate the lines. Government has subsequently indicated that no route closures are being considered.

9.7.3. IMMAC 2020 to 2024 will provide for maintenance and renewal of rail infrastructure along all parts of the network, including those lines previously identified as being lightly used. However, dependent upon policy decisions taken in relation to those lines it should be noted that additional investment from within the IMMAC funding envelope will require consideration of funding priorities across the broader network. As with the network as a whole, enhancements to those lines would require separate funding outside of that provided under IMMAC 2020 to 2024.

9.8. Closed and Abandoned Lines

9.8.1. There are currently 10 closed lines with 387 bridges and 80 abandoned lines with 1,107 bridges. Responsibility for closed lines, including such maintenance as may be required, remains with the IM while certain responsibilities can be removed in relation to abandoned lines following a formal Abandonment Order.

9.8.2. Maintenance of closed and abandoned lines is currently met from within the overall IMMAC funding programme.

9.8.3. The IM would prefer to reduce the funding requirement associated with closed and abandoned lines through transferring maintenance responsibilities for all bridges to relevant local authorities on abandoned lines and initiating Abandonment Orders in relation to any Closed Lines. Alternatively the IM states it is open to working with relevant stakeholders in relation to converting certain closed or abandoned lines into greenways.

10. Conclusions and Recommendations

10.1 Introduction

10.1.1 As noted in sections 3.9 to 3.10, in 2008 the European Commission published a *Communication on Multi-annual contracts for rail infrastructure quality*⁶ which outlines the potential advantages the IMMAC framework should bring to the maintenance and renewal of railway infrastructure such as –

- A long-term financing framework for maintenance;
- Complementing the charging system;
- Enabling effective cost control;
- Enabling benchmarking and regulatory supervision;
- Improving performance and quality control; and
- Securing the effectiveness of the contractual arrangements.

10.1.2 In concluding the Review of IMMAC 2014 to 2018 and looking forward to IMMAC 2020 to 2024, this Report has therefore examined issues for consideration within those parameters set by the European Commission's *Communication*.

10.2 A long-term financing framework for maintenance

10.2.1 The Review Group notes the level of investment outlined in section 6.1 and acknowledges that the overall level of investment, including the Exchequer contribution, was below the level deemed to be the required steady state levels outlined in the *AECOM 2011 Report* and updated in the *Rail Review*.

10.2.2 The Review Group also notes that the initial IMMAC was finalised with actual funding levels provided for 2014 and indicative levels provided for the period 2015 to 2018 pending further assessment of requirements as recommended by the then Working Group. The actual funding levels for each year were then restated on an annual basis and over the period there were increased levels of investment provided as compared to projected levels; however, those increases were provided as the Voted Expenditure of DTTAS allowed rather than on a planned basis within the framework of a multi-annual funding programme.

⁶ European Commission (2008); [Multi-annual contracts for rail infrastructure quality](#)

10.2.3 The Review Group believes that optimal realisation of the benefits accruing from a long-term financing framework require the level of funding to be in line with that identified in section 9.2 and that, subject to the voted expenditure allocations as published in the Revised Estimates of Public Services each year, the funding allocation outlined in IMMAC 2020 to 2024 should reflect that identified level of funding.

Review Group Recommendation

1. IMMAC 2020 to 2024 should, subject to the voted expenditure allocations as published in the Revised Estimates of Public Services each year, provide a five year funding framework in line with the requirements identified in section 9.2.

10.3 Complementing the charging system

10.3.1 Under the Regulations, CIÉ, as the Essential Functions Body, is responsible for the charging system, including the determination and collection of charges. As noted in the European Commission's *Communication "most infrastructure managers are not able to recoup full maintenance costs from user charges"* and therefore the funding provided under an IMMAC framework is required to "*achieve the necessary financial stability*".

10.3.2 User charges are a requirement of EU and Irish law and all RUs must pay for their usage of the infrastructure in line with the relevant charging framework. In Ireland, it is the case that in effect the vast majority of user charges paid to the IM originate in the RU division of IÉ, which is itself in receipt of significant Exchequer funding in accordance with the RU's Public Service Contracts with the NTA.

10.3.3 The Review Group notes that access charges over the period 2014 to 2018 comprised €350million, or 31% of total IMMAC funding, and that access charges over 2020 to 2024 are forecasted to total €419million or 29% of total IMMAC investment levels over the period.

10.3.4 As noted above, CIÉ, as the Essential Functions Body, is responsible for the charging system and the forecasted level of charges to be paid by the RU to the IM over the period 2020 to 2024. Those forecasted charges form part of the IÉ *Strategic Plan 2020 to 2024* and the levels established were communicated to the Review Group through the detail provided within the IÉ *Strategic Plan 2020 to 2024* and the IM's submission on the IMMAC 2020 to 2024.

Review Group Recommendation

2. As part of any future review of IMMAC 2020 to 2024, the Review Group recommends the views of the Essential Functions Body are more formally sought in relation to the proposed access charge framework over the next five year period.

10.4 Enabling effective cost control

10.4.1 A key benefit expected from the development of an IMMAC framework is to enable effective cost control through the certainty provided by multi-annual funding which can underpin the type of longer term planning required in relation to rail maintenance. This level of funding certainty should over time result in lower unit costs within the IM through the better deployment of resources.

10.4.2 The Review Group notes that over IMMAC 2014 to 2018 the certainty expected of an IMMAC funding framework was not in place over the contract period, with annual fluctuations occurring in each of the years 2014, 2015 and 2016 when comparing actual expenditure with forecasted levels for those particular years prior to the start of the year. While these fluctuations resulted in increased levels of investment as compared to forecasted levels in each of the three particular years, clearly annual changes in the funding framework are not optimal in the context of developing a longer-term maintenance and renewal programme.

10.4.3 As noted in section 7.2 financial performance is a criterion against which performance is reported upon by the IM on a quarterly basis and monitored by the CRR as the independent regulator. However, the Review Group notes that the current indicators essentially only monitor funding trends and expenditure by business unit. In addition, the Review Group acknowledges that further development of financial performance monitoring requires consideration of appropriate resources within the CRR to ensure effective oversight.

10.4.4 The Review Group considers it important that, in light of the funding levels proposed under IMMAC 2020 to 2024 and the benefits expected from the level of certainty such funding provides, both the IM and the CRR develop performance indicators to allow for appropriate monitoring of financial performance and the value for money aspects of the investment in, and expenditure of, the IM.

Review Group Recommendations

3. The Review Group recommends that the CRR and the IM develop improved financial performance indicators to allow for appropriate monitoring of the efficiency and effectiveness of the increased levels of investment planned over 2020 to 2024.
4. The Review Group considers it particularly important that these improved indicators allow for oversight of unit cost performance in key areas of the IM's work programme over the next contract period of 2020 to 2024.
5. The Review Group recommends that DTTAS engage with the CRR in relation to the resources that are available to it to allow for an enhanced monitoring role in relation to the IM's financial performance under the IMMAC.

10.5 Effective benchmarking and regulatory supervision

10.5.1 Section 7.1 outlines the monitoring framework established under the Regulations and given effect in IMMAC 2014 to 2018.

10.5.2 As noted in that section, in 2014 the CRR and the IM agreed upon five criteria against which the IM's performance would be monitored. For three of those criteria – IM delay minutes, TSR limits and IM service cancellations – annual performance thresholds are set by the IM which then form the threshold against which performance is measured. Over the period 2014 to 2018 annual performance thresholds were subject to change on a number of occasions without any agreed process in place between the IM and the CRR.

10.5.3 The Review Group notes the views of the CRR on the effectiveness and/or appropriateness of certain performance criteria as currently reported upon and monitored.

10.5.4 The Review Group welcomes the IM's participation in the EU wide development of key performance indicators as led by the Platform of Railway Infrastructure Managers in Europe (PRIME) and acknowledges the future potential of such work in providing an effective framework for benchmarking of performance.

Review Group Recommendations

6. The Review Group recommends that the CRR and the IM agree a methodology and/or process to set, and vary, annual performance thresholds against agreed key performance indicators and that the methodology and/or process is set out in the IMMAC.
7. The Review Group recommends that annual performance thresholds should be robust and appropriately challenging to allow for effective monitoring of performance.
8. The Review Group recommends continued IM engagement with the EU PRIME work in developing performance indicators and, in the interim, that any revised national level performance indicators are developed cognisant of the work underway at EU level.
9. The Review Group considers it necessary that financial expenditure information be provided by the IM to DTTAS on a monthly basis but that detailed reporting is only required by DTTAS in the form of the CRR's quarterly report as independent regulator.

10.6 Improving performance and quality control

- 10.6.1** As noted in the *Rail Review*, infrastructure renewal and maintenance plays a crucial role in overall safety, as well as in areas such as train speed and service frequency, and the outputs produced under IMMAC 2020 to 2024 will have an appreciable impact on the outcomes experienced by the passenger over that period.
- 10.6.2** The Review Group acknowledges the prioritisation afforded safety related works over the current IMMAC and notes the significant improvements reported in asset condition over the period 2014 to 2018.
- 10.6.3** The Review Group notes that the links between IM outputs and service delivery outcomes as experienced by the passenger are not clearly aligned under current IMMAC reporting and monitoring arrangements. It recommends that greater consideration is given by the CRR and the IM to developing improved service delivery performance indicators with appropriate performance thresholds.
- 10.6.4** The Review Group considers it appropriate that, in light of the greater certainty now provided in relation to the funding levels over 2020 to 2024, a five year summary work programme with expected outcomes be submitted by the IM to the Minister and the CRR for observations prior to inclusion within a revised IMMAC. Furthermore, for each year the detailed work programme for the following year should be submitted to the Minister and the CRR for their observations prior to inclusion within Schedule C. The contractual provision within section 8 of the IMMAC should be amended to reflect the above and to introduce a time-bound period within which observations must be made by either the Minister or the CRR.
- 10.6.5** The Review Group acknowledges the costs incurred by the IM in relation to ongoing maintenance of closed and abandoned lines and recommends engagement between the IM and DTTAS in relation to this issue over the lifetime of IMMAC 2020 to 2024.

Review Group Recommendations

10. The Review Group recommends that the CRR and the IM agree improved performance indicators, with appropriate performance thresholds, which allow for better linkages between IM outputs and service delivery outcomes.
11. The Review Group recommends that the IM develop a five year outline work programme for the period 2020 to 2024 with summary expected benefits capable of measurement within the framework of revised performance indicators to be agreed between the IM and the CRR.
12. The Review Group recommends that the five year outline work programme and the annual work programme as developed each year is submitted by the IM to DTTAS and the CRR for observations prior to inclusion within Schedule C of the contract.
13. The Review Group recommends engagement between the IM and DTTAS on the issue of closed and abandoned lines.

10.7 Securing the effectiveness of the contractual arrangements

10.7.1 The EU Commission's *Communication* states that "to be credible, any contractual arrangement needs to have sanctions to deal with non-compliance". The *Communication* goes on to state that sanctions should be progressive and proportionate and that before any such sanctions are imposed "the two parties (and the regulatory body) should endeavour to reach an amicable settlement."

10.7.2 Section 9 of the current IMMAC provides for "Penalties for Persistent Failure to Perform" and allows for the withholding of up to 2% of the Exchequer grant each year based on persistent failure to perform in relation to IM service cancellations with differing rates applicable dependent upon the service type category (e.g. Intercity / Connecting / Commuter / Freight).

10.7.3 Section 10 of the IMMAC deals with "Dispute Resolution" and notes that where disputes arise between the parties those disputes shall be referred to the Railway Regulator for arbitration.

10.7.4 The Review Group notes the observations of the CRR as railway regulator that the withholding of Exchequer funds in circumstances whereby funding provided is at sub-optimal levels requires consideration. However, as detailed in section 9.4 Exchequer funding over the period 2020 to 2024 will

be at a 'steady state' level and therefore the issue as it previously existed no longer exists. However, the Review Group notes that the current IMMAC does not explicitly require both parties (and the regulatory body) to "*endeavour to reach an amicable settlement*" as outlined in the Communication and therefore recommends that sections 9 and 10 of the current IMMAC be reviewed with a view to making explicit that requirement in the context of "Penalties for Persistent Failure to Perform".

10.7.5 The Review Group notes that over the lifetime of IMMAC 2014 to 2018 amendment and restatement of the contract on an annual basis to incorporate revised funding levels and annualised work programmes was often concluded at a far later stage of the year than might be considered optimal. The Review Group recommends that both parties commit to a more timely finalisation of any required processes each year.

10.7.6 The Review Group recommends that IMMAC 2020 to 2024 be subject to a Value for Money and Policy Review before finalisation of the next IMMAC contractual period with said Review commencing in Q1 2022.

Review Group Recommendations

14. The Review Group recommends the IMMAC require engagement between the IM and DTTAS (and the CRR as appropriate) prior to any withholding of Exchequer grants as permitted by section 9 of the IMMAC.
15. The Review Group recommends both parties commit to a more timely finalisation of necessary amendments and restatement of the IMMAC as may be required each year.
16. The Review Group recommends that IMMAC 2020 to 2024 be subject to a Value for Money and Policy Review commencing in Q3 2023.

Appendix 1: Terms of Reference and Membership of the Review Group

The following Terms of Reference were agreed at the first meeting of the Review Group on 16th April 2018.

1. Background

The current Multi-annual Infrastructure Manager Contract (IMMAC 2014-2018) which was established as required under EU Directives 2001/14/EC and 2012/34/EU, will expire at end December 2018. A Review Group is to be established, as outlined below, to review the current IMMAC and its effectiveness to inform in order to inform the development of a new IMMAC for the next multi-annual contract period.

2. Terms of reference

It is proposed that the Review Group will meet to collectively examine the following:

- (1) To examine the funding requirements for investment in railway maintenance and renewal programme to form the basis of a Multi-annual Infrastructure Manager Contract (IMMAC) with Iarnród Éireann commencing in 2019 for a to-be-determined period and to make a recommendation on the level of Exchequer funding per annum taking due account of
 - i. a review of the stated and achieved outcomes of the current IMMAC for the period 2014 to 2017;
 - ii. the findings of the Rail Review Report 2016;
 - iii. the Infrastructure Manager Business Plan (to ensure consistency with the provisions of the Contract);
 - iv. assessment of a detailed submission from Iarnród Éireann of the annual investment requirements to renew and maintain the existing railway asset condition and network, on a fit-for-purpose basis, with forecast outputs, results, and impacts over the investment period identified; and
 - v. allocations in the current 4 year Capital Envelope 2018-2021 and the forthcoming National Development Plan 2018-2027 and the National Planning Framework 2040.
- (2) To review and consider funding for network enhancements, if any, based on identified priorities and available funding.
- (3) To consider the effectiveness of the incentives and Key Performance Indicators (KPIs) in the current IMMAC contract in encouraging the delivery and achievement of the Programme in an efficient and cost effective basis and to recommend incentives and KPIs for future contract arrangements.

- (4) To review the processes including but not exclusive to: the reporting mechanism as laid out in the contract, the period of contract and the methodology for its annual updating, to ensure the most efficient method of delivery.
- (5) To review updated relevant EU Directives and Regulations to ensure that the future contract enables/ensures all requirements under amended legislation continue to be met.
- (6) In the context of Brexit, to review processes in place to ensure that the future contract enables/ensures alignment of standards and continued interoperability as required with the Northern Ireland railway network.

3. Membership

DTTAS: Derek Tierney* (Chair), Kevin Doyle, Maev Nic Lochlainn, Clare Smith (Secretary)

IÉ - IM: Don Cunningham, Michael Reidy, Jude Carey#

CRR: Brian Higgisson

NTA: Hugh Creegan

* upon transfer replaced by Garret Doocey

upon transfer replaced by Damien Brady

Appendix 2: List of Main Documents referenced

The Review Group had regard to the following reports in the course of its work:

- Commission for Railway Regulation (2018); IMMAC Review 2014 to 2018
 - Iarnród Éireann / AECOM (2011); 2030 Rail Network Strategy Review
 - Iarnród Éireann (2018); Strategic Plan 2019 – 2023
 - Iarnród Éireann (2019); Strategic Plan 2020 – 2024
 - Iarnród Éireann (2018); Network Statement 2018
 - Iarnród Éireann (2018); Submission on IMMAC 2019-2023
 - IMMAC 2014 – 2018: Contract between the Minister for Transport, Tourism and Sport and Iarnród Éireann-Irish Rail
 - Leigh Fisher (2013); Verification Report on IÉ proposals for a Maintenance and Renewal Programme 2014 -2018
 - Platform of Rail Infrastructure Managers in Europe (2018); PRIME 2016 Benchmarking Report
 - National Transport Authority / Iarnród Éireann (2016); Rail Review
 - Risk Solutions (2012); Mid Term Review of IÉ Third Railway Safety Programme
 - Working Group (2014); Report on the Funding for the Infrastructure Manager Multi-Annual Contract 2014-2018
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An Roinn Iompair,
Turasóireachta agus Spóirt
Department of Transport,
Tourism and Sport