Control Period 6

Capital Investment Capability Framework

Summary report on the baseline
assessment of Network Rail regions

Contents

1. Introduction to the Capital Investment Capability Framework

1.1 This report

Under the Independent Reporter framework mandate reference L2Ni008b, Nichols was commissioned to undertake a baseline assessment of capability maturity of each of the five Network Rail regions against a capital investment capability framework (the 'framework') between March and September 2020.

This report is a summary of the baseline capability assessment process and its outcomes.

1.2 The origins and focus of the framework

Based on learnings from Control Period 5 (CP5), ORR wanted an objective, repeatable, route-focused mechanism for assessing Network Rail's capability to undertake its role as 'Specifier' of Capital Investments in the rail network in CP6. Capital Investment means both enhancements and renewals, funded and financed from a variety of sources.

Therefore, in early 2019 the framework was jointly developed by ORR, Network Rail and Nichols as a bespoke assessment tool for this purpose. It was derived from both Network Rail's and external organisations' experience of and learning from delivering complex capital projects and programmes. It also took account of anticipated future challenges arising from the changing context for Network Rail from CP5 to CP6.

The focus for the framework is Network Rail's role as a 'Specifier' of capital investments during the early stages of project development. It has been designed to complement other capability maturity frameworks already used by ORR/Network Rail such as Portfolio, Programme and Project Management Maturity Model (P3M3), Asset Management Excellence Model (AMEM) and Health and Safety Risk Management Maturity Model (RM3). It has been designed to be agnostic of organisational structure, investment lifecycle and process, given that these can be subject to change over time.

To put this in context, Figure 1 shows the span of the framework and how it maps to Network Rail and Department for Transport's (DfT) Investment Decision Framework (IDF). Similarly, Figure 2 shows how it maps to Transport Scotland's (TS) Rail Enhancements & Capital Investment.
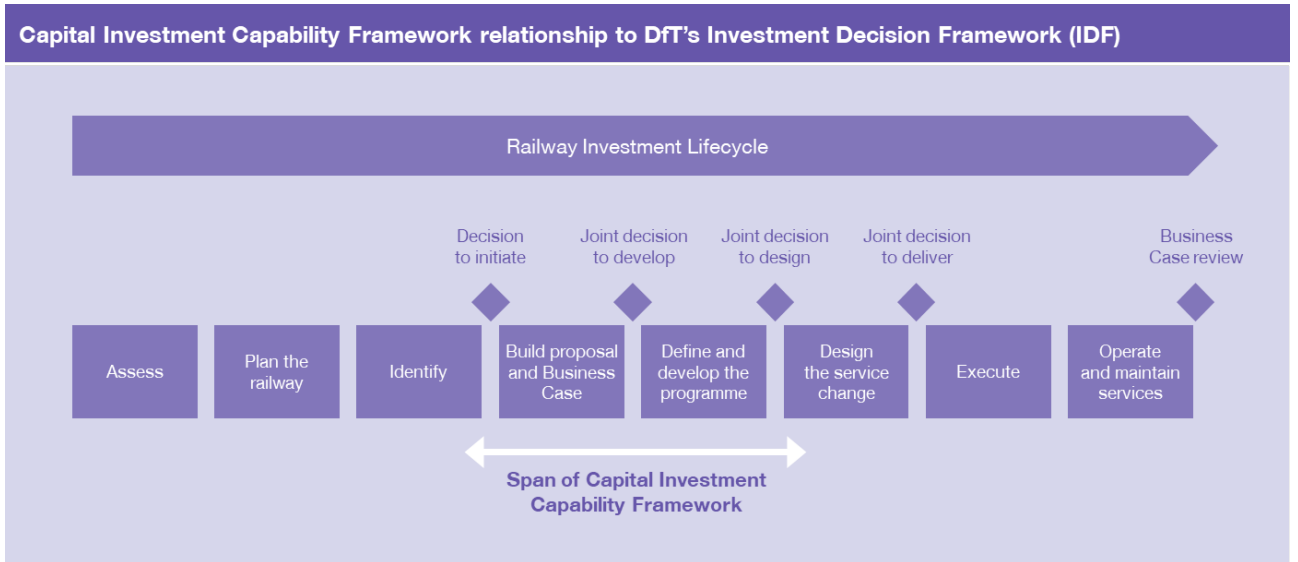
Figure 1: Mapping to the Network Rail and Department for Transport's Investment Decision Framework (IDF)
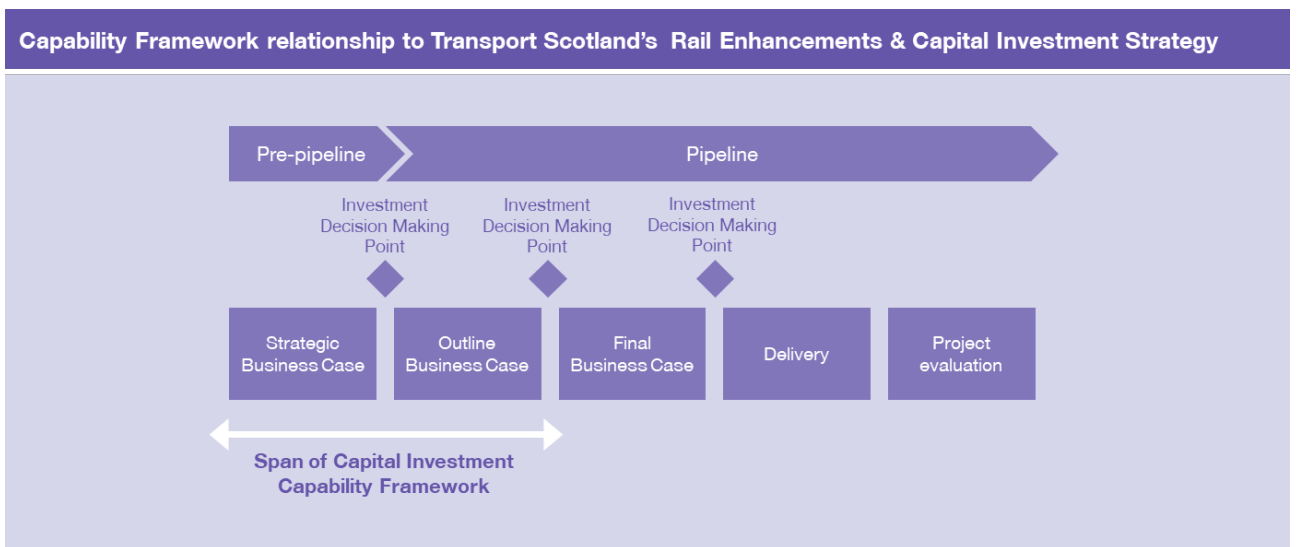

Figure 2: Mapping to Transport Scotland's Rail Enhancements & Capital Investment Strategy

1.3   The scope of the framework

Capital Investment in the rail network is primarily driven by funder requirements (e.g. DfT, Transport Scotland) to achieve strategic outcomes from which the funder can derive benefits. Network Rail's System Operator and Regions advise funders and other industry parties, through appropriate analysis, of the choices available to funders and needs of the railway itself. The outcomes sought may be enabled by one or more changes in the railway system, such as: re-franchising; changes to rolling stock; timetable changes; and infrastructure change arising from various combinations of infrastructure enhancements and renewals.

The scope of the framework reflects the required focus on the 'specifier' role. It comprises 18 capabilities grouped into three capability areas. It only contains 'material' capabilities that have been demonstrated as having the biggest influence on successful outcomes for capital investments. Figure 3 shows the three capability areas most relevant to the 'specifier' role. A list of the underlying 18 capabilities can be found in Appendix 1.
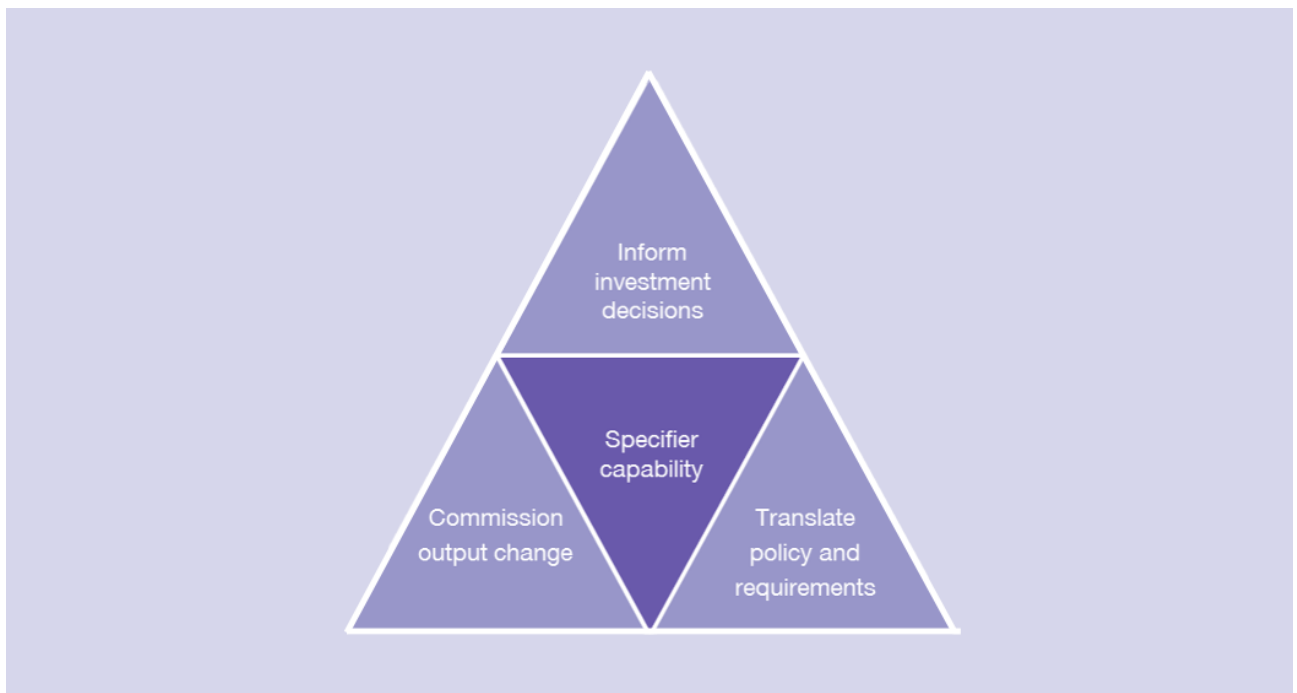

Figure 3: Framework capability areas

1.4   What is the purpose of a capability maturity framework?

The purpose of a capability maturity framework is to provide an assessment of the degree to which an organisation's processes are deterministic and repeatable. This framework assesses the degree to which:

For renewals, if a group of asset managers were each independently given exactly the same set of assets, with the same asset information whether:

- they would choose largely the same interventions on largely the same assets.

- specification of the required intervention would be largely the same.

- governance, assurance and eventual acceptance of the output changes would be largely the same.

For enhancements, if a group of Sponsors (or equivalent role), were each given the same requirement to achieve specified client outcomes, then would the:

- strategic fit of and potential impact on the rest of the rail network of providing those outcomes be assessed in largely the same way.

- range of whole-system (timetabling, rolling stock, infrastructure, franchising and operations) options assessed, and assessment of those options be largely the same.

- business cases supporting investment be largely the same.

- specification of output changes be largely the same.

- governance, assurance and eventual acceptance of the output changes would be largely the same.

The use of the term "largely the same" recognises that the five regions operate within specific socio-political contexts and priorities.

The underlying premise of maturity models is that systems of work which lack determinism and repeatability lack the levers to be made more efficient and effective. Stated simply, a process cannot be improved if it is neither written down nor followed. Whilst a certain level of process is a prerequisite for achieving certain levels of maturity, there is no explicit nor implied requirement that the level of process should be burdensome or excessive. In most cases the opposite is true – the clearer and simpler a process then the easier it is to follow and comply with. In many cases, criteria-based processes are sufficient to get repeatability.

Equally, higher levels of maturity do not require processes to be "one size fits all". Processes can differ depending on characteristics and circumstances. The material issue is determinism, i.e. whether in a given combination of characteristics and circumstances someone can work out what specific processes and actions should apply.

1.5   Framework benefits and limitations

The framework offers many benefits, including:

- Providing a structured and consistent approach to measure Network Rail's capability and its improvement over time and across regions.

- Providing an assessment of Network Rail's capability that enables an open dialogue between ORR and Network Rail to examine progress, areas in need of improvement and best practice. Discussions can focus on any of the 18 capabilities within either the renewals or enhancements portfolios.

- Enabling organisational improvement, with the goal of delivering capital investments with ever increasing consistency, predictability and efficiency.

There are also some limitations to the framework that are also worth understanding:

- The method of assessment (including document reviews and interviews) being conducted by several teams of assessors working in parallel, is not "a perfect science". There can still be a residual margin of error in assessed levels of capability maturity even with precautions taken to moderate levels of maturity across regions and between renewals and enhancement portfolios.

- The framework does not measure individuals' professional judgement undertaking the 'specifier' role. Good professional judgement should enhance the outcomes from these capabilities; however it does not negate the need to assess them.

- The framework has been developed to recognise the specific context for Network Rail's capital investment projects i.e. it is bespoke to Network Rail. This limits any direct cross industry comparison of assessed maturity levels with other infrastructure capital delivery organisations.

2. Outcome of the assessment / maturity levels

2.1   Capability maturity level definitions

Each of the 18 capabilities in the framework are assessed against five increasing levels of capability maturity. This is illustrated in Figure 4 as a capability maturity ladder; to achieve the next level requires the previous level to be met in full. The concept of five assessment levels is commonly used across different capability maturity models.

Capital Investment Capability Framework, the 5 levels in the capability maturity ladder

Level 5 Optimised — The organisation seeks innovative ways to improve the effectiveness and efficiency of the way it undertakes a capability. Improvements are pro-active and seek to optimise how the capability is undertaken in specific circumstances. An aspirational level.

Level 4 Measured — The organisation quantitatively measures and assesses the effectiveness of the way it undertakes the capability and reactively changes the process based on that assessment.

Level 3 Standardised — The organisation's approach to ensuring the capability is undertaken in a consistent and repeatable and is standardised in a management system. Use of the management system can be evidenced.

Level 2 Repeatable — The way that the capability is undertaken is consistently formalised, but that formalisation differs across the organisation. There is evidence that the different parts of the organisation do what they say they will.

Level 1 Aware — There are examples of the organisation undertaking good practice related to the capability. However, this tends to be ad-hoc or an uncontrolled approach that is not formalised and is a matter of personal professional opinion.

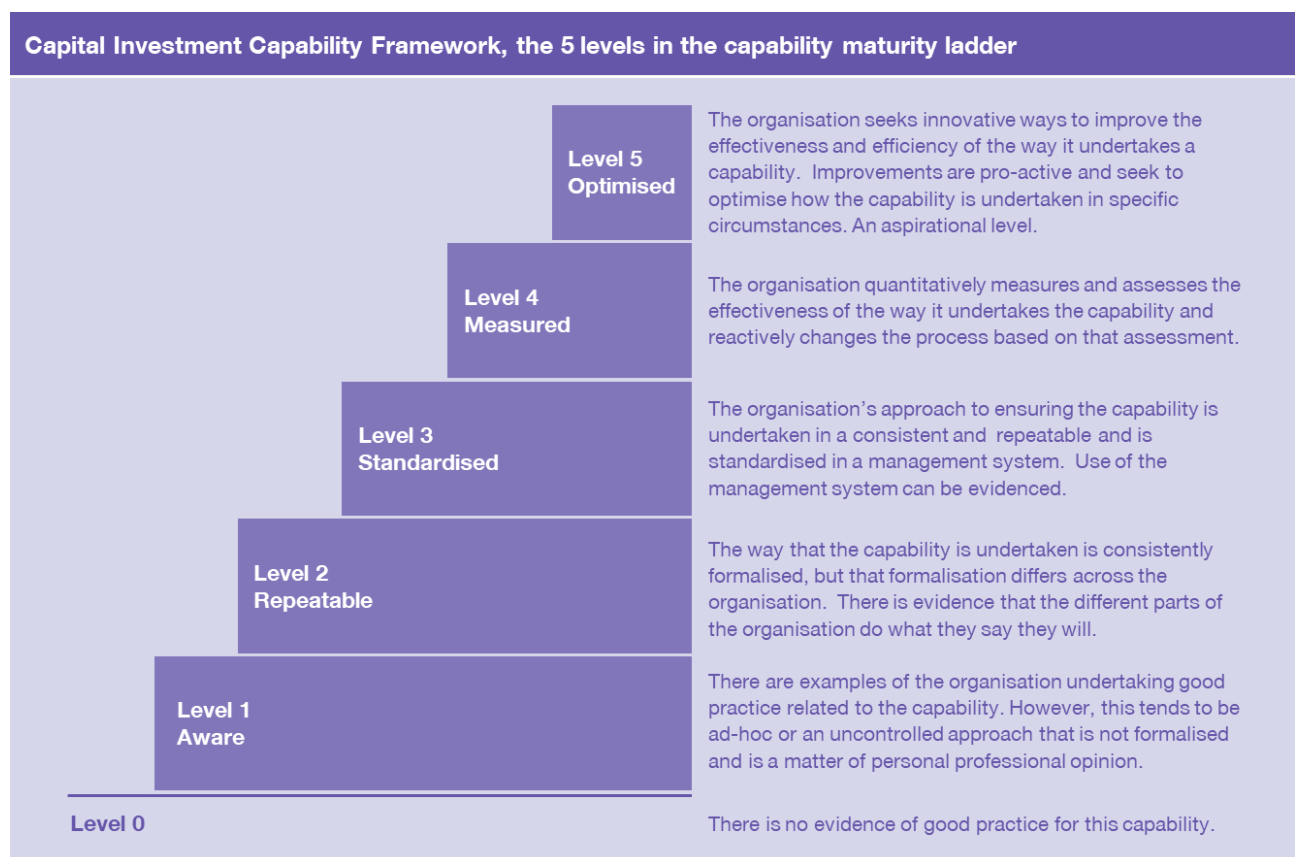**Level 0** — There is no evidence of good practice for this capability.

Figure 4: The five levels in the capability maturity ladder

The capability maturity ladder starts at Level 0, the lowest point in the model, whereby the organisation does not demonstrate any good practice. Level 1 is the first step in maturity, with some instances of good practice undertaken by the organisation but with no formalised processes to ensure it is repeatable. This level is often characterised as the organisation relying on "heroes to deliver". Level 2 introduces repeatability in practices, with formalisation of the capability within the organisation, however the formalisation differs across the organisation. Level 3 is often characterised by the statement that "the organisation has a process and follows it". Level 4 is incremental and is characterised by an organisation routinely quantitatively measuring the effectiveness and efficiency of its process performance e.g. quality of outcomes and speed. Level 5 builds on this again and is characterised by an organisation using the management information intrinsic in Level 4 to gain insights and to use it to optimise its efficiency and effectiveness. Level 5 should be regarded as an aspirational level.

2.2   Outcomes of the baseline assessment by Region

With reference to the levels of maturity shown in Figure 4 the baseline assessments of overall maturity for renewals and enhancement for all of the regions can be summarised as operating at or just under Level 2. Within the Framework, this is characterised as "there being some form of process addressing the assessment criteria but does not fully meet the criteria; there is inconsistency in how the capability is undertaken or has identified gaps in compliance". In our experience, level 2 is a typical level for an organisation's initial baseline capability maturity assessment.

We do not consider that differences between the overall maturity levels achieved by each region as significant. This is due to inherent variability in the selection of evidence provided by the regions, the people interviewed and the assessment methodology. Although the overall differences were not significant between the regions, there were some notable (regarded as greater than or equal to one level) differences within the 18 capabilities.

Figure 5 and Figure 6 illustrate the spread across regions of the levels assessed for each of the 18 capabilities for renewals and enhancements respectively (See Table 2 in Appendix 1.1 for descriptions of the 18 capabilities). The shading in the figures and the median line indicate where there is a variance in the levels assessed for specific capabilities. For example, there was a notable variation in capability C4 (Manage change) across regions for renewals and similarly capability B5 (Learn from experience) for both renewals and enhancements
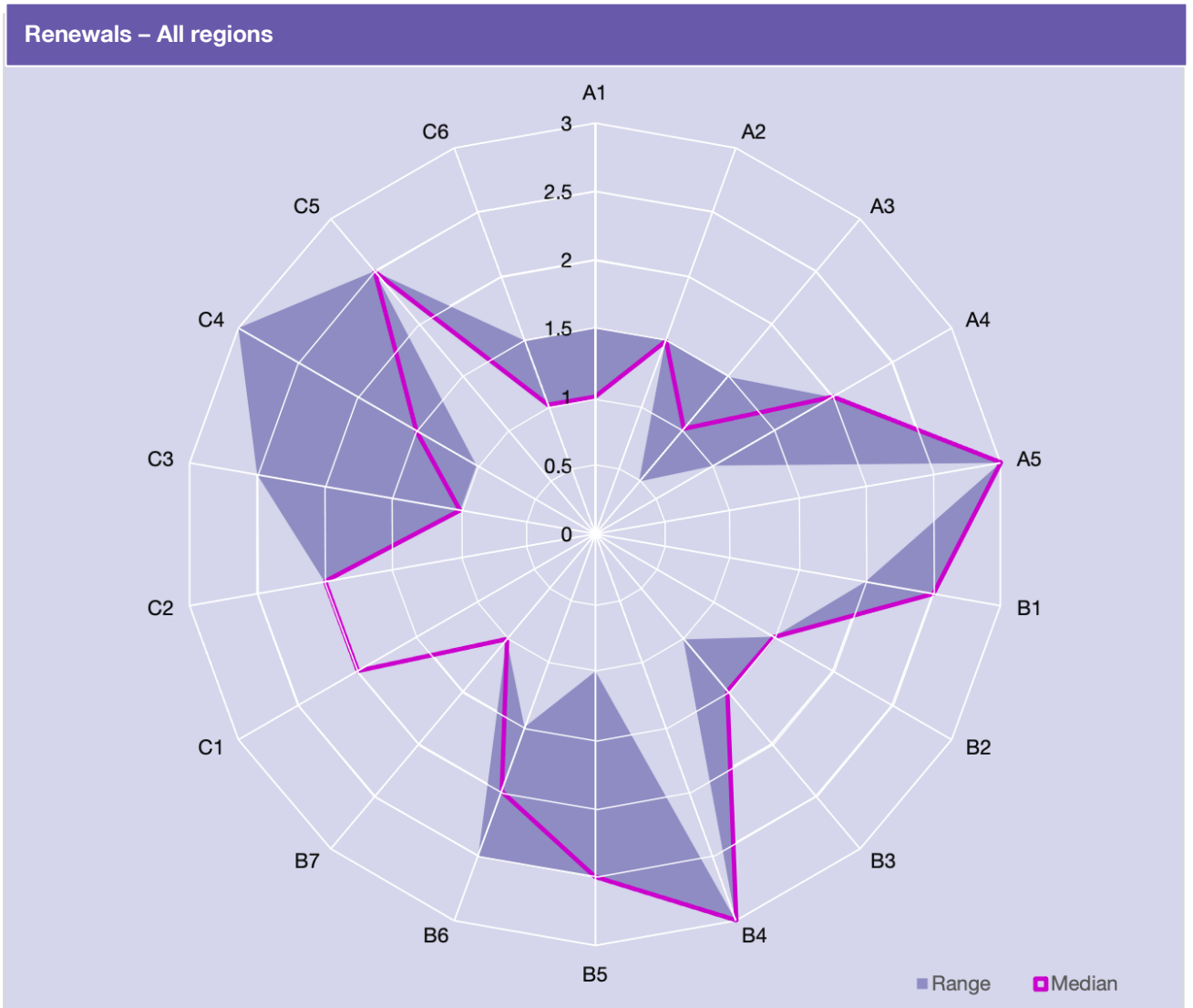
Renewals – All regions

Figure 5: Spread of levels achieved across the regions for the 18 capabilities for Renewals.
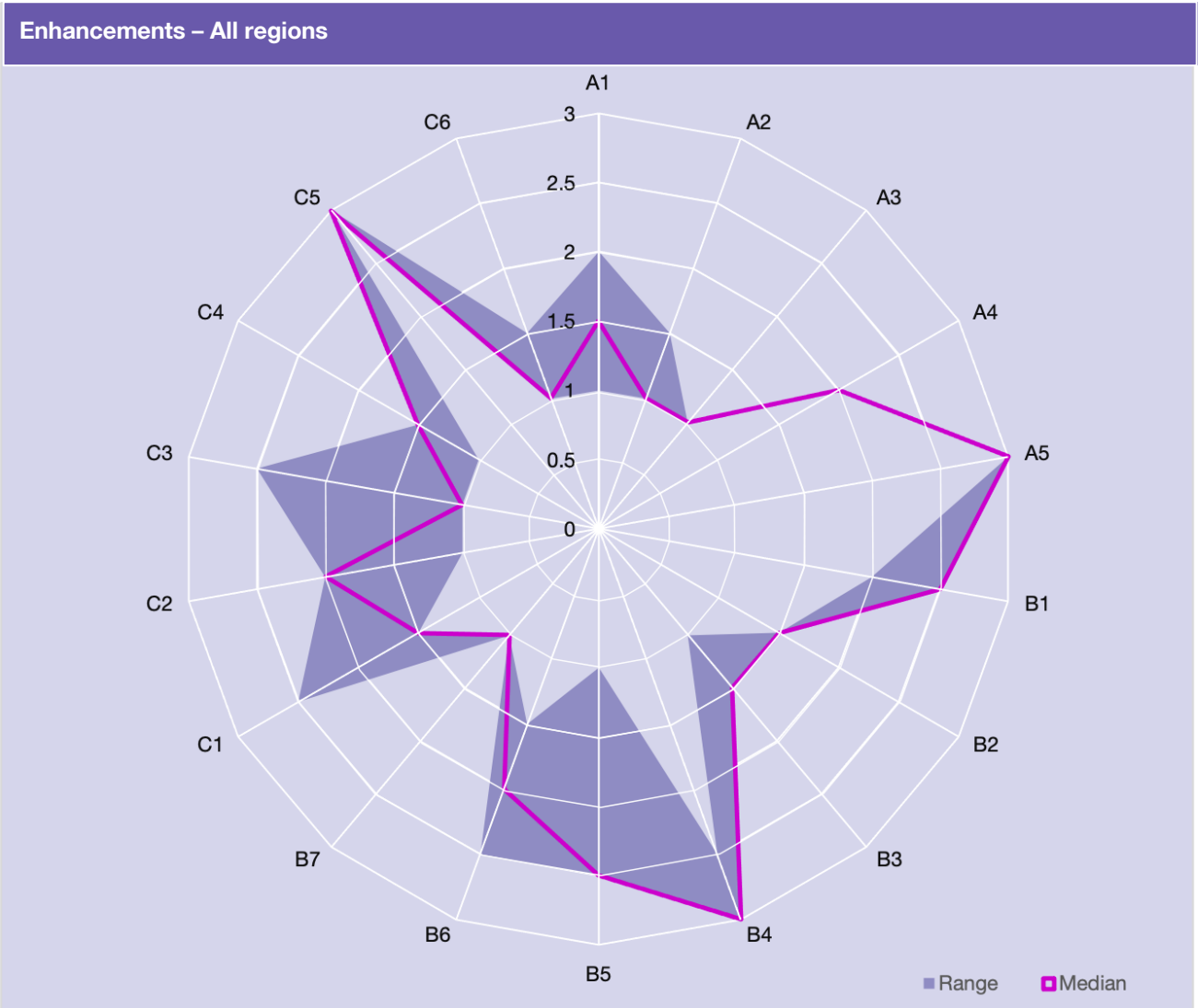
Enhancements – All regions

Figure 6: Spread of levels achieved across the regions for the 18 capabilities for Enhancements

2.3 Using the assessment outcomes

Capability maturity assessments are used as the basis for improvement planning. The typical process is to assess baseline maturity; set maturity improvement targets and establish an improvement plan to achieve those targets. It was agreed at the time the framework was established that targets would not be set before this baseline assessment. Now that the assessment has been completed, Network Rail and ORR may wish to consider setting future targets as part of their response.

After undertaking their initial maturity assessment many organisations consider that it is appropriate to set Level 3 as a minimum target level when developing improvement plans. For the purposes of planning, expectations and timing of future assessments, based on experience of P3M3, a rule of thumb is that it may make take up to 18 months to move up a maturity level.

However, maturity targets should be based on the needs of the organisation. It will almost certainly be the case that different regions will need different capabilities to operate at different levels of maturity depending on their workload and other specific circumstances. Those levels might also need to vary across renewals and enhancements in response to the investment mix within a region. We recommend that the baseline maturity levels be considered in the context of each region's priorities as should setting and agreeing any target maturity levels both for individual capabilities and overall for renewals and enhancements within regional specific improvement plans. Regions may also consider there are some capabilities that will add value to achieve higher maturity levels in the future and so consider this in their improvement plans.

3. Next steps

3.1 Our recommendations

We identified a number of general themes from the assessment that have informed our improvement recommendations under two broad headings:

1. Network Rail's central management system

2. At a regional level.

Network Rail's central management system

The assessment methodology is described in Appendix 1 and the first stage involved a review of relevant documents from Network Rail's central management system. These documents came from several discipline-specific hubs, which are accessed via Network Rail's intranet, and described as collectively forming an integrated management system (IMS). We have used the term IMS throughout our reports to mean Network Rail's entire common central management system including standards, processes, procedures and work instructions. It has become apparent during the review process for our report that a comprehensive catalogue and definition of all Network Rail central management system documents is not available.

We reviewed 408 IMS documents. We noted that a particular role may be expected to discharge responsibilities within a significant number of those documents. For example, the sponsor role has duties in over half of the IMS documents reviewed. This makes it difficult to assimilate and follow all aspects of the management system that are relevant to a role. It is our view that better cataloguing of the IMS and mapping of its contents to the capabilities would be beneficial.

We understand that a review of Network Rail's IMS has commenced following completion of the Putting Passengers First organisational restructuring. As well as reflecting organisational change, such as the migration from Infrastructure Projects to Capital Delivery, there is an opportunity to provide further clarification of what are core processes that apply to all regions and what detailed arrangements can be devolved. As was seen in Southern region, local portals, quality systems and guidance are likely to emerge as the regions develop their identities and approach to local challenges.

The following is a summary of our improvement recommendations for the IMS in the context of the Capability Framework:

1. A catalogue should be prepared showing the full content of the IMS, the owner of each document, the date of its last revision and where it can be accessed.

2. The catalogue should be reviewed to determine the level where documents will be maintained after PPF (i.e. centrally, at regional level or by routes).

3. The catalogue should be mapped to show which documents support each capability within the Framework. This will support gap analysis in preparation for future assessments.

4. Consideration should be given to opportunities to reduce the number of documents in circulation and/or to improve familiarity and adherence to these in areas where the assessment indicates that improvements are needed.

Regional activities

As mentioned earlier, a number of factors need to be considered when determining each region's response to the baseline assessment and in developing improvement plans. The review of regional and regulatory objectives and other relevant factors and the development of such plans falls outside our remit and so our recommendations relate to generic matters which may already being undertaken as part of the PPF restructuring process.

1. Regions should agree the boundary between centrally maintained IMS documents and the regional management system.

2. Similarly, Regions should set a boundary between which processes will be standard for the whole region and which will be delegated to routes.

3. Regions should develop and maintain a catalogue of their management system and how it maps to the Framework capabilities as described above for the central IMS.

4. Regions should consider how best to share good practice. Examples of good practice seen during the assessment are set out in Appendix 1.

5. Where routes have been assimilated into newly constituted regions, an action plan should be developed to align and embed relevant processes.

6. Each region should develop an improvement plan to develop its capabilities to specific levels as appropriate to its workload and operational priorities. This should be agreed with ORR to inform future assessments.

3.2   Network Rail's response

We understand that Network Rail is developing improvement plans that incorporate existing improvement activities alongside the recommendations from this assessment.

Appendix 1 – Further Information

A1.1   The framework

This section provides further details for the framework.

Capital investment capabilities

The framework was derived from analysis of past railway capital schemes and identifies the capabilities associated with successful outcomes. The framework comprises 18 capabilities grouped into three key capability areas (A to C) as described in

Table 1 below.

Capability area	Description
A. Inform investment decisions	Network Rail has a unique position in UK rail Capital Investments as the owner and operator of the national rail network infrastructure. This means Network Rail is in a position to maintain an overall view of the current and potential capability of the rail network, and the totality of the changes required to meet outcomes sought by funders and Network Rail in its role as duty holder for railway infrastructure of the national rail network.
	As such, Network Rail need to support and provide input to decision-making on how desired Outcomes can be achieved; whether desired Outcomes align with existing regional and route strategies and that of the independently minded System Operator; and understanding impacts of desired Outcomes.
B. Translate policy and requirements	Network Rail may lead or co-ordinate the translation of Outcomes desired by funders into the capability and rail system output changes necessary to achieve those Outcomes. This needs to balance the desires of various funders and other stakeholders across the network as a whole.
C. Commission output infrastructure change	Network Rail is typically accountable for commissioning the delivery of changes to infrastructure and hence outputs required to achieve funder Outcomes. This may either be achieved through Network Rail's internal capital delivery teams, or other mechanisms at the discretion of the regions and their routes. As such, regions need to be capable of commissioning and overseeing the changes to any infrastructure outputs it is accountable for.

Table 1: Description of the three capability areas

The 18 capabilities within the three areas are listed in

Table 2 below. Each capability is assessed against specific criteria to determine the level of capability maturity against the maturity ladder presented in in Figure 4 earlier.

Capability area	18 Capabilities
A. Inform investment decisions	A.1 Strategic fit A.2 Choices to funders A.3 Impact assessments A.4 Commercial and deliverability input A.5 Stakeholders
B. Translate policy and requirements	B.1 Specify B.2 Assess complexity and risk B.3 Drive and demonstrate value for money B.4 Secure consents and industry change B.5 Learn from experience B.6 Facilitates good outcomes B.7 Competence and experience
C. Commission output infrastructure change	C.1 Govern and assure C.2 Delivery mechanisms address intent C.3 Optimise and align across programmes C.4 Manage change C.5 Secure funding C.6 Monitor, validate and challenge delivery

Table 2: The 18 capabilities under the three capability areas

A1.2 Baseline assessment process

This section provides further details regarding the baseline capability assessment undertaken.

Methodology for the assessment

The assessment was undertaken between January and August 2020 and assessed both renewals and enhancements in each region. It was carried out in five stages:

• Planning of the assessment with both the regions and Network Rail's capital delivery Centre of Excellence

• Central desk review of material from Network Rail's central integrated management system provided to us by the Centre of Excellence

• Regional assessments consisting of a desk review of submitted materials and interviews with up to 50 regional staff

• Moderation and reporting

• Feedback

A central point of contact in Network Rail and in each of the regions selected the materials and individuals to be assessed based on guidance we provided. Where the assessors were made aware at interview of materials or individuals that might materially impact the assessment then they requested the materials or follow-up interviews.

During the review of our draft report, Network Rail identified some additional centrally defined materials relating to both renewals and enhancements that had not been provided at the time of our central desk review activity. We reviewed the additional information provided to us and determined that they related to capabilities A.1 (strategic fit), A.2 (choices to funders), A.3 (impact assessments) and C.3 (optimise across programmes). It is our opinion that the additional material would have had the potential to improve the assessed maturity level for the four relevant capabilities during the central desk review. However, it is also our opinion that any improvement in maturity levels would not have then carried through into improved maturity levels in the regional assessments. Our rationale is that maturity assessment considers both the existence of formal processes and the extent to which they are embedded within the organisation. We found no evidence of the additional materials being embedded across the regions; they were not identified and submitted for review by the Network Rail Centre of Excellence and they were not referred to by interviewees during the regional assessments.

In a small minority of cases where we believe that the materials or individuals chosen were not sufficiently representative, and so might have materially impacted the maturity level for a specific capability, then we noted this in the observations contained in the regional reports.

A1.3   Areas of good practice and improvement initiatives

Throughout the assessments, we saw examples of approaches, processes, and systems that either support, or have the potential to support, aspects of improved maturity in the capabilities. Whist none of the practices fully support the assessment criteria for the listed capabilities, we suggest that they provide a useful reference point for planning improvements. The initiatives are summarised in

Table *3*. Please note that we have only highlighted initiatives which appear to have the most potential to impact on maturity assessment levels. We also heard about many other more general business improvement initiatives with a much lesser impact that we have not included.

Practice	Region	Description and how (potentially) contributes to maturity
Team Scotland Execution Plan (TSEP)	Scotland	The TSEP provides a consolidated view of a significant proportion of the governance arrangements for the region's enhancements. The approach provides significant clarity of the region's governance arrangements compared with other regions reviewed albeit still having gaps in how it addresses the requirements of the capabilities. Potentially supports capabilities: A.1, A.2, A.4, B.6, C.1, C.3, C.4, C.5.
Western route Sponsorship Management Plan	Wales & Western	This document describes the accountabilities of the Sponsor, what they need to do and how to navigate the organisation's governance. In doing so, it provides an individually focused view of what to do and when in order to follow process. Potentially supports capabilities: B.7, C.1, C.5 and potentially others (but note the risk of overlap with the Sponsors' Handbook).
Integrated Management System	North West & Central	This system provides an integrated geographical view of work within the region by engineer's line reference provides a degree of business process automation for the management of renewals workbanks and renewals change control. Potentially supports capabilities: A.2, A.4, C.1, C.3, C.4 and C.5.
Holistic Access & Logistics Oversight (HALO)	North West & Central	The HALO team coordinates all disruptive possessions for both renewals and enhancements, with the objective of optimising the use of disruptive possessions. They indicated plans for the Network Rail team to collocate with staff from their principal Train Operating Company in order to further improve planning. Potentially supports capabilities: C.3.

Practice	Region	Description and how (potentially) contributes to maturity
Industry Systems Integration (ISI)	Wales & Western	The ISI process and team provides an overarching framework that links strategy through to demonstration of benefits, including accountabilities for delivery of timetable, rolling stock, infrastructure, franchising and operations outputs, and release of benefits. Whilst the approach is only applied in a limited way on the Western route, it appears to have significant potential to address capability gaps. Potentially supports capabilities: A.1, A.2, A.3, A.4, B.1, B.3, C.1, C.3, C.4, C.5.
Smarter Southern portal / regional quality manual	Southern	An initiative to provide a single access point for GRIP material along with relevant guidance and local work instructions. Potentially supports all capabilities but note the risk of duplication with central IMS portals.
Portfolio Management Office	Southern	An initiative to apply common programme management principles across all asset groups in the renewals portfolio and to use this as a platform to improve planning, coordination and other aspects of delivery. Potentially supports capabilities A4, B2, B3, B5, C1, C3, C4 but requires formalisation of processes.

Table 3: Selected improvement initiatives with potential to improve maturity assessment levels