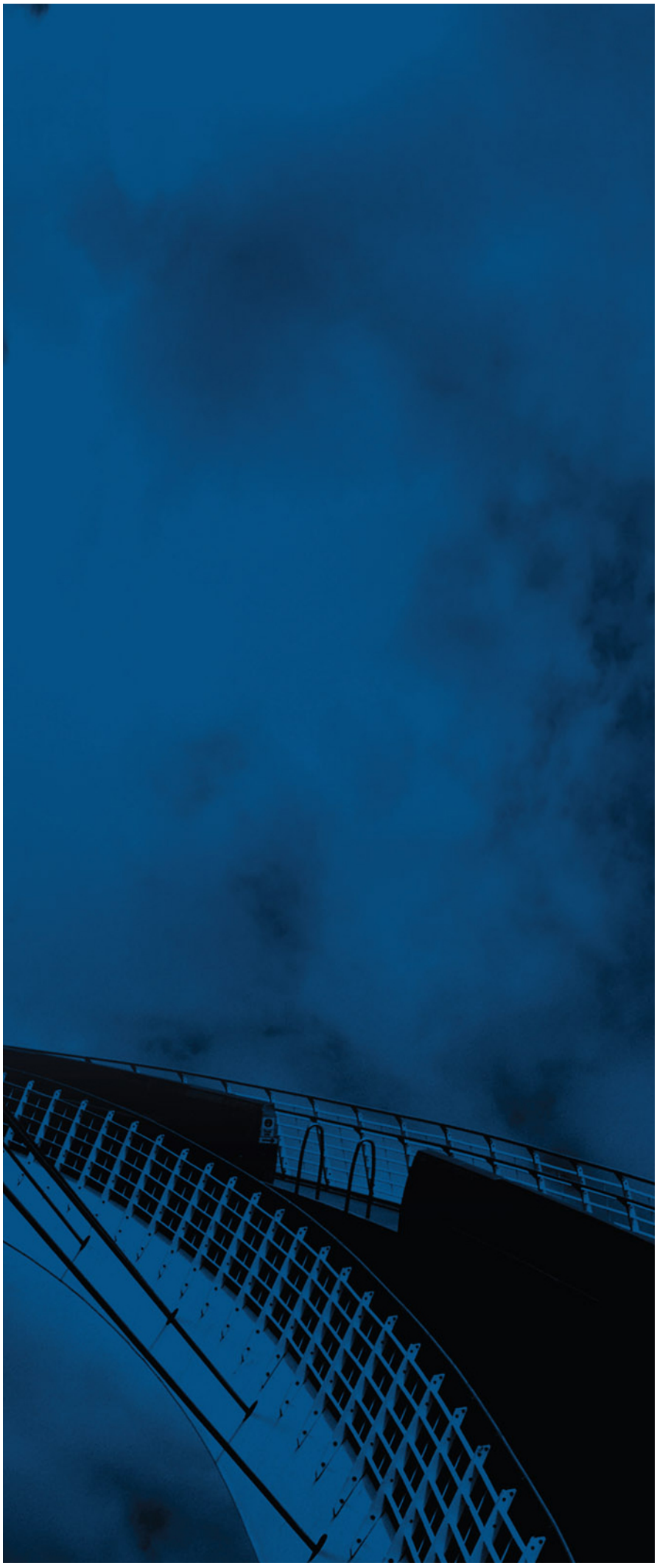

A Report for
Network Rail and the Office of Rail Regulation
from
Asset Management Consulting Limited (AMCL)

Version 1.0
10th March 2015

Review of CP5 Asset Management Roadmap Final Report

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Version	Sections	Amendment Details
Draft A	All	Initial draft for review of factual accuracy
Draft B	All	Incorporation of Network Rail and ORR comments
1.0	Exec. Summ, 7 & Appendix B	Incorporation of Network Rail and ORR comments

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Executive Summary

AMCL (Asset Management Consulting Limited) is the Independent Reporter for Asset Management to the Office of Rail Regulation (ORR) and Network Rail. As part of that role AMCL has undertaken a number of assessments of Network Rail's Asset Management capability maturity using its proprietary AMCL Asset Management Excellence Model™ (AMEM).

The latest AMEM assessment was carried out at the End of Control Period 4 (CP4), during February to April 2014 and established baseline scores for Network Rail against the six-groups and 39-subjects of Asset Management defined in the Global Forum for Maintenance and Asset Management's (GFMAM's) 'Asset Management Landscape', Second Edition. Due to the timing of the publication of the 'Asset Management Landscape', Second Edition, in March 2014, the End of CP4 Assessment had already been scoped and designed against the First Edition. AMCL has since completed a further refinement of the AMEM against the Second Edition of the 'Asset Management Landscape' and it is this latest version of the AMEM that has been used to underpin the work documented in this report.

The purpose of this work was to provide Network Rail and ORR with a 'prima facie' view of the sufficiency of Network Rail's Asset Management Roadmap for Control Period 5 ('CP5 Roadmap'). The outputs are intended to provide a 'simple headline review' of the robustness of the CP5 Roadmap in terms of achieving group level scores of 72% for each of the six groups of Asset Management at January 2018. This target has been set as a specific Regulated Output Measure for CP5.

The assessment process was undertaken in three stages for each of the 39-subjects:

1) ! Baseline View – the predicted AMEM maturity score in January 2018 should Network Rail implement the full scope of the CP5 Roadmap in a complete and timely manner;
2) ! Lower Estimate View – the predicted AMEM maturity score in January 2018, taking into account a number of weighted factors which could pose a risk to the complete and timely delivery of the full scope of the CP5 Roadmap; and
3) ! Comparison of these two views against the nominal maturity target of 72% and identification of further opportunities for Network Rail to assure alignment with best practice.

Completion of the above assessment stages allowed the 39-subject scores to be rolled-up to determine the Baseline and Lower Estimate Views at the six-group level. The top-level results are provided on the following pages.

The findings from this 'prima facie' review are included in the body of the report and AMCL's conclusions are captured in Section 6. The key recommendations of this review are:

1) ! By March 2015 Network Rail should define a consistent set of criteria which allow it to justify explicitly the prioritisation of its CP5 Roadmap activities at 39-subject level, and which provide guidance on the commensurate level of detailed planning and effort.
2) By June 2015 Network Rail should document appropriately detailed plans for each of the high-level activities identified in the CP5 Roadmap in an overall 12-month rolling programme, including addressing the outstanding matters identified in Appendix B and identifying accountability and responsibility, to assure appropriate sequencing and delivery.
3) By June 2015 Network Rail should document appropriate interim milestones and associated success criteria for each of the high-level activities defined in the CP5 Roadmap, to enable more rigorous monitoring of progress during CP5.
4) By December 2015 Network Rail should demonstrate that approved funding and resource plans are in place for all corporate initiatives contributing to the achievement of Asset Management Excellence during CP5 on a 2-year rolling basis as a minimum.

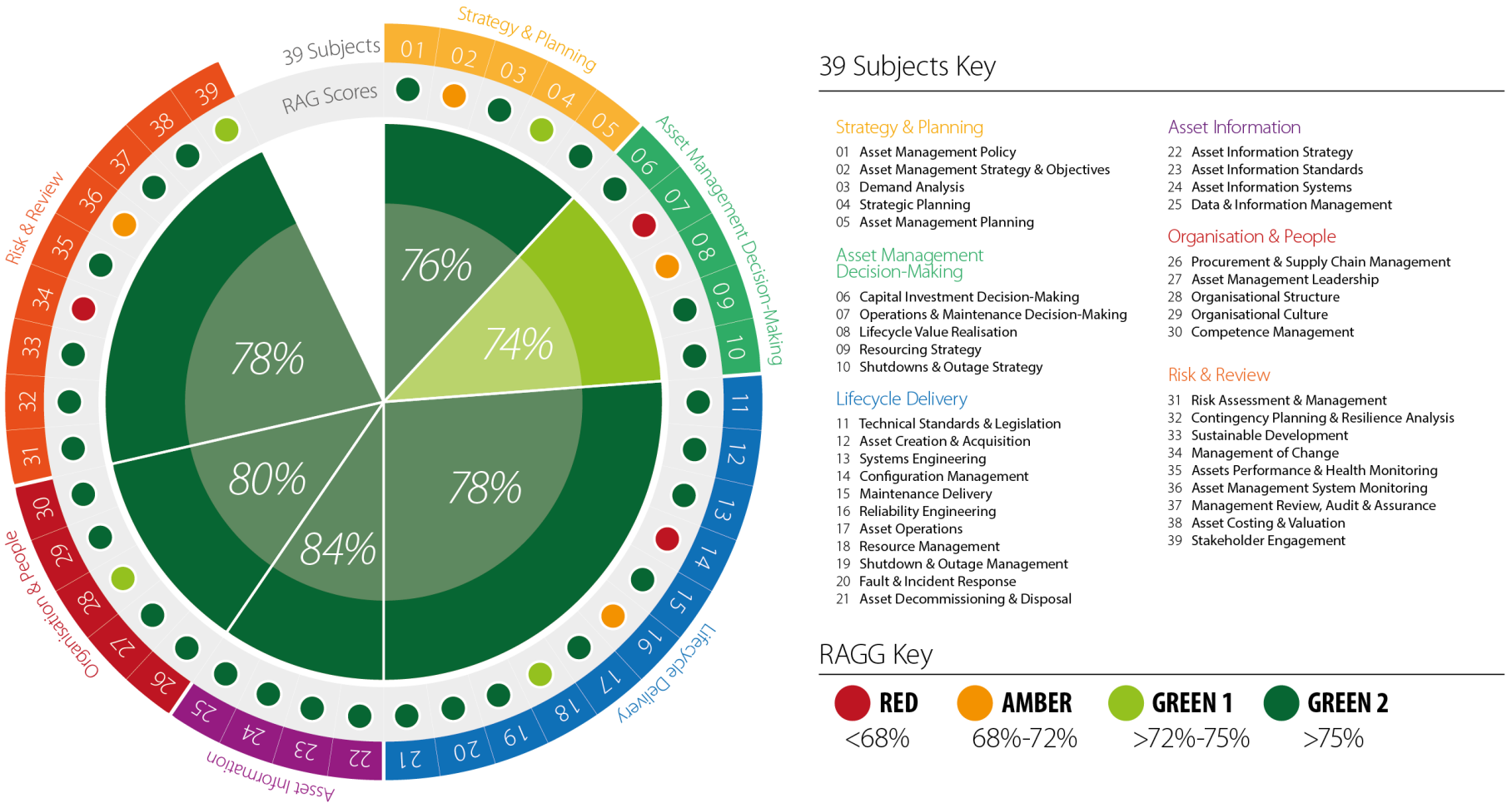

Diagram 1 Summary of Findings – Baseline View

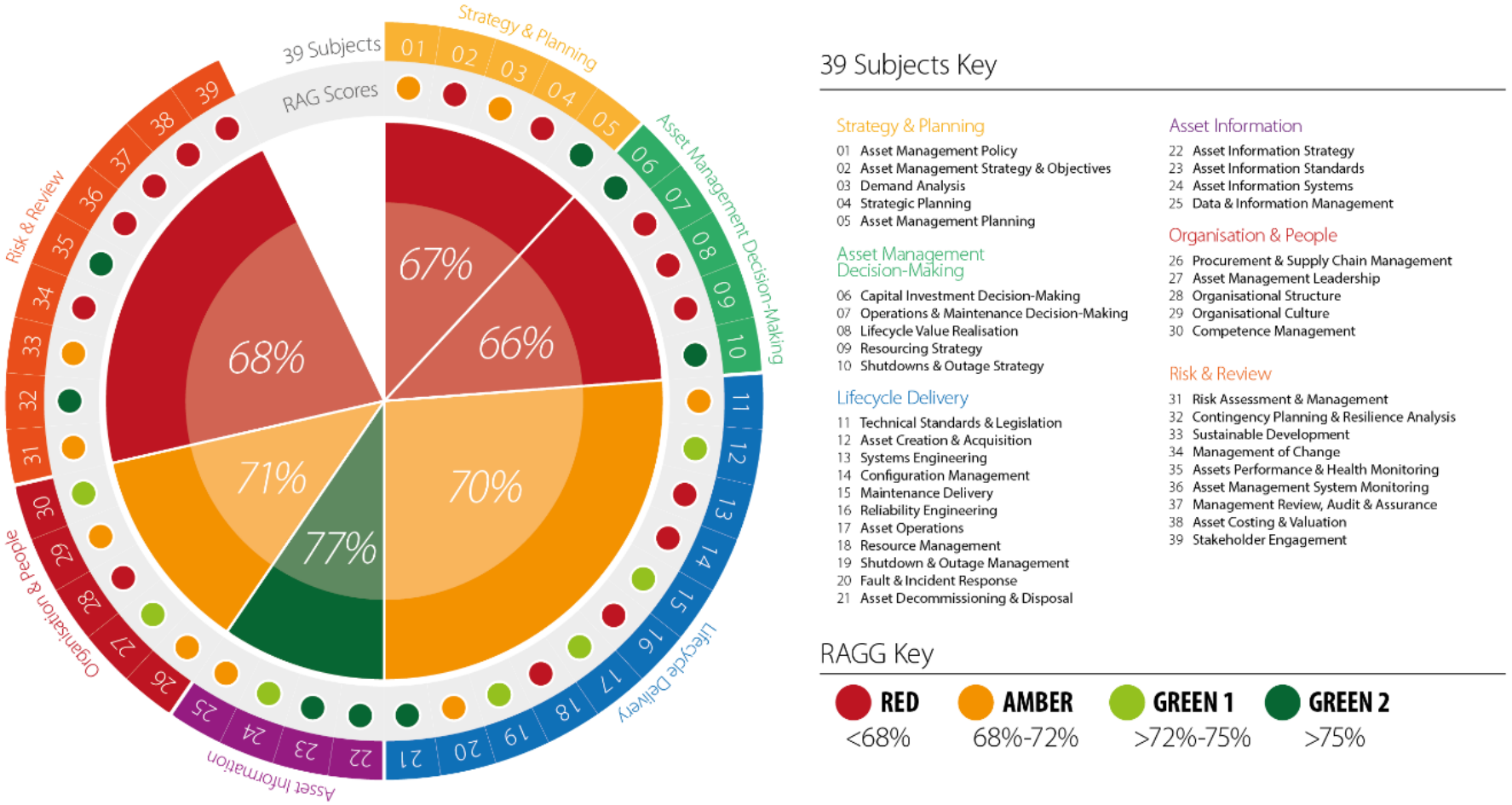

Diagram 2 Summary of Findings – Lower Estimate View

Table of Contents

1 Introduction

1.1 Background

AMCL is the Independent Reporter (Asset Management) to the Office of Rail Regulation (ORR) and Network Rail and has held that position over Control Period 3 (CP3) and Control Period 4 (CP4).

As part of that role AMCL has undertaken a number of assessments of Network Rail's Asset Management capability maturity using its proprietary AMCL Asset Management Excellence Model™ (AMEM). Use of the AMEM has enabled the consistent and progressive review of Network Rail's developing capabilities through assessments in 2006, 2009, 2011, 2013 and 2014. AMCL has also developed and supported Network Rail's recent deployment of an 'AMEM Lite' tool to evaluate Route based Asset Management capabilities.

The latest full AMEM assessment was carried out at the End of CP4, during February to April 2014. That assessment used the Global Forum for Maintenance and Asset Management's (GFMAM's) 'Asset Management Landscape', Second Edition, to define the scope of Asset Management and establish baseline scores for the internationally recognised six groups of Asset Management.

Due to the timing of the publication of the 'Asset Management Landscape', Second Edition, in March 2014, the End of CP4 Assessment had already been scoped and designed against the first version and it was noted in the accompanying report that there may have been some areas where this could affect the accuracy of the scores. In addition, AMCL has since completed a detailed review of the alignment of the AMEM to the Second Edition of the 'Asset Management Landscape', to ensure that coverage is complete. It is this further revised version of the AMEM, fully aligned with contemporary Asset Management best practice that has been used to underpin the work documented in this report.

1.2 Objectives

The purpose of this work was to provide Network Rail and ORR with a 'prima facie' view of the sufficiency of Network Rail's Asset Management Roadmap for Control Period 5 ('CP5 Roadmap'). The outputs are intended to provide a 'simple headline review' of the robustness of Network Rail's proposed development plans to enable its Asset Management capabilities to reach a level of maturity such that, when measured by the AMEM, are likely to achieve Asset

Management group level scores of 72% for each of the six-groups at January 2018. This target has been set as a specific Regulated Output Measure for CP5.

1.3 Scope

The predefined scope of the mandate was to evaluate the sufficiency of the Network Rail CP5 Roadmap against each of the current '39-subjects of Asset Management', as defined by the GFMAM. Specifically it was to:

- Undertake the evaluation of the likelihood of achieving the output target of 72%. This was to include:
  - (The verification of the proposed scope (at a headline level); and
  - (Provision of indications of anticipated levels of capability within the 39 subjects and 6 group scores by January 2018.
- Review the proposed capability against the baseline exit CP4 position and provide:
  - (Commentary on areas where the proposed scope to be implemented leaves the (achievement of the target at risk; and (
  - (Observations (informed by recent knowledge elicited through the End of CP4 AMEM and AMEM Lite assessment processes) of where Network Rail may improve the effectiveness of its implementation of the intended improvements.
- Provide commentary on the prioritisation of the Roadmap and whether the logic and sequencing of activities is appropriate.
- Report on areas of known / emerging best practice that do not feature in Network Rail's current or intended future plans and provide comment on the applicability of these to Network Rail.
- Provide relevant, prioritised and SMART recommendations for consideration by Network Rail.

1.4 Structure of Document

The remainder of this document is structured as follows:

- Section 2 – Outline of the methodology applied;
- Section 3 – Summary of overall assessment results;
- Section 4 – Key findings;
- Section 5 – Summary of Asset Management group level findings;

- Section 6 – Conclusions; and
- Section 7 – Recommendations.

2 Methodology

2.1 Overview

The methodology utilised was designed to provide a 'prima-facie' but structured assessment of the robustness of Network Rail's current plans in terms of achieving a maturity target at a point in time over two-years in the future. To achieve this there were four key phases of work, which are summarised below:

- Phase 1: Mobilisation – establishing working arrangements, key stakeholders and documentation and attending a Network Rail overview presentation of the CP5 Asset Management Roadmap, including relevant Network Rail activities not within the Roadmap itself.
- Phase 2: Review - detailed review of the CP5 Asset Management Roadmap documentation and interviews with Network Rail identified stakeholders to explore the plans in more detail.
- Phase 3: Assessment - a structured mapping of the evidence collected during the Review phase against the AMEM requirements for the 39-subjects of Asset Management to establish alignment, anticipated maturity scores at January 2018 and areas of risk and opportunity.
- Phase 4: Reporting – formal reporting processes in accordance with the established Independent Reporter protocols.

Phases 1, 2 and 4 were relatively simplistic in their execution and well supported by Network Rail. Phase 3 (Assessment) was more complex due to the 'prima-facie' nature of the review, the necessary prediction of a future state and the variable status, at the time, of Network Rail's progress and available level of plan detail to support the assessment of the high-level CP5 Roadmap. The following section clarifies the approach used for Phase 3 (Assessment).

2.2 The Assessment Process

The 'prima facie' qualitative assessment of Network Rail's CP5 Roadmap and supporting plans and documentation available at the time utilised the latest version of the AMEM, as shown in Diagram 3, which includes full alignment to the GFMAM 'Asset Management Landscape', Second Edition defined six groups of Asset Management and their constituent subjects (39 in total).

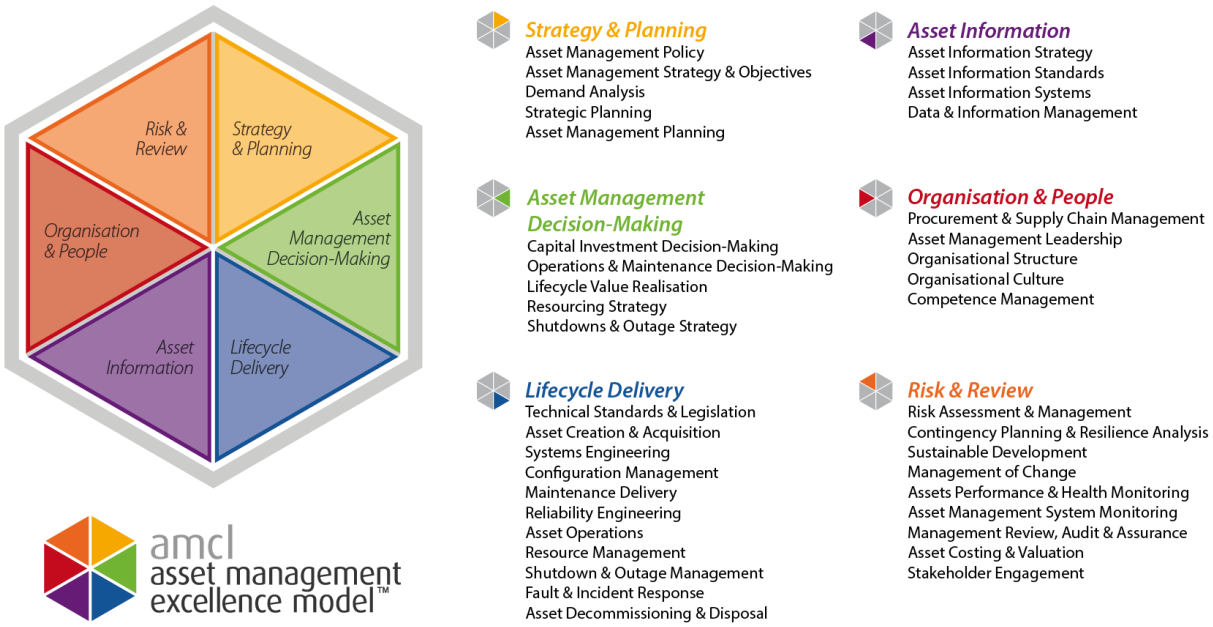

Diagram 3 The AMCL Asset Management Excellence Model™

The maturity scale utilised in conjunction with the AMEM is shown in Diagram 4. It represents internationally recognised best practice and is fully consistent with all previous assessments.

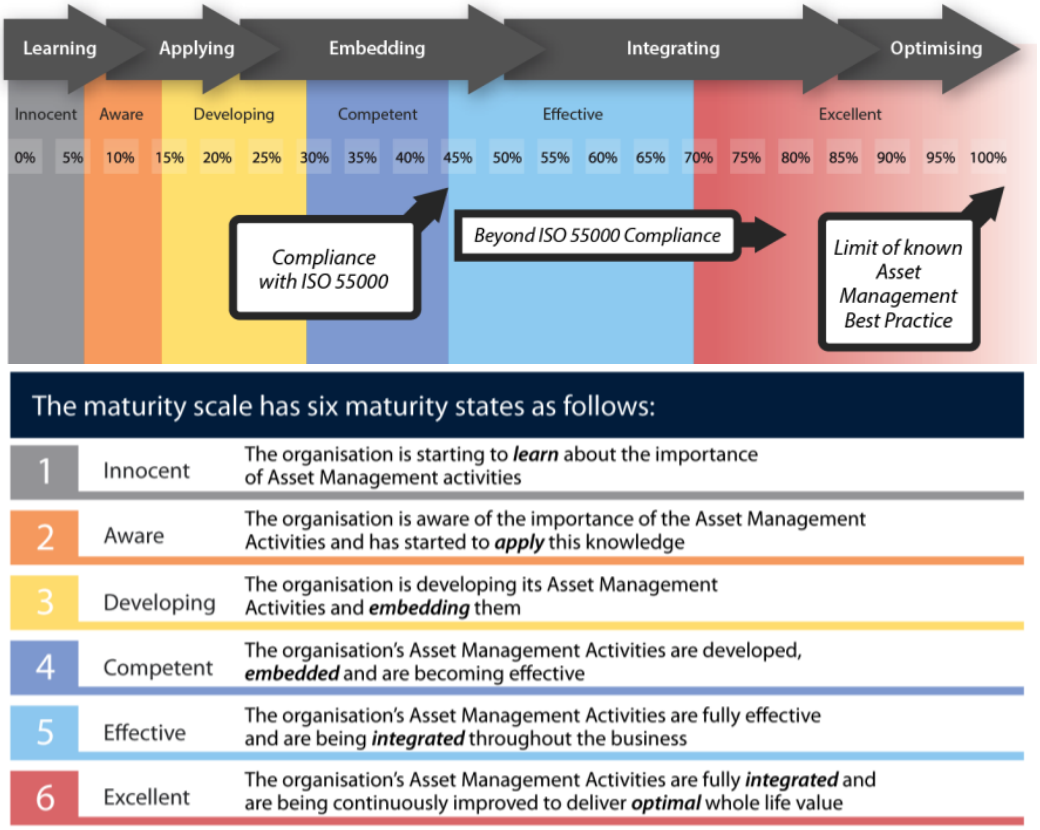

Diagram 4 Asset Management Maturity Scale

The assessment process was undertaken in three stages for each of the 39-subjects:

1) Baseline View – the predicted maturity score in January 2018 should Network Rail implement the full scope of the Roadmap in a complete and timely manner;
2) Lower Estimate View – the predicted maturity score in January 2018, taking into account a number of key factors which could pose a risk to the complete and timely delivery of the full scope of the Roadmap; and
3) Comparison of these two views against the nominal maturity target of 72% and identification of further opportunities for Network Rail to assure alignment with best practice and nominally achieve higher AMEM maturity scores.

Completion of the above assessment stages allowed the 39-subject scores to be rolled-up to determine the Baseline and Lower Estimate views at the six-group level.

The following sections provide further detail of the specific assessment process applied in each of the three stages outlined above.

2.2.1 Baseline View

The Baseline view was assessed using experienced AMCL assessors, highly familiar with Network Rail, to establish criteria level AMEM scores across all of the 39-subjects, based on:

- Detailed review of the documented scope in the Network Rail CP5 Roadmap;
- Detailed review of relevant supporting documentation for each defined scope; and
- Due consideration of the supporting discussions with Network Rail identified stakeholders.

This enabled:

- The alignment of Network Rail's plans to the scope and requirements of the AMEM at the 39-subject level;
- The establishment of anticipated maturity scores for each of the 39-subjects at January 2018, assuming the comprehensive and timely implementation of the scope of activity defined in the CP5 Roadmap; and
- The rolling up of the anticipated January 2018 39-subject level scores to the six-group level.

It should be noted that this process produced a single point AMEM score as the Baseline view for each of the 39 subjects, based on the available evidence. These do not constitute statistically significant AMEM scores for Network Rail. To achieve this would require multiple

sources of assessment and evidence and would be undertaken as part of a full AMEM assessment.

2.2.2 Lower Estimate View

The Lower Estimate view was established by applying negatively weighted, qualitatively determined deliverability risk criteria to the Baseline view at the 39-subject level, based on five key risk factors, as follows:

1) (The **'Available Level of Plan Detail'**, at the time of the assessment, which considered the detail and robustness of the available plans and associated resources. This was considered the most critical of the risk factors and its weighting is therefore twice as significant as the other four factors.

Available Level of Plan Detail	
Criteria	**Risk Score**
Work substantially complete	0%
Detailed programme and resource plans but not yet fully implemented	2%
Outline Plans only	4%
No plans or high-level milestones only	6%

Table 1 Available Level of Plan Detail

2) (The **'Delta from End of CP4 Score'**, i.e. scale of the anticipated increase in maturity score from the End of CP4 full AMEM score, which considered the current status against the planned future state and the available time and resources to deliver the overall scope.

Delta from End of CP4 Score	
Criteria	**Risk Score**
Delta <= 0	0%
Delta >0<5	1%
Delta >5<15	2%
Delta >=15	3%

Table 2 Delta from End of CP4 Score

3) (The **'Current level of Embedment'** of the subject within the organisation, i.e. the current estimated level of awareness and understanding of the subject. This considered the Route level understanding at the time of the 'AMEM Lite' base-lining process in early 2014 and interviews with key Route based stakeholders undertaken as part of this review. It should be noted that only two Route stakeholders were met as part of this 'prima facie' review.

Current Level of Embedment	
Criteria	**Risk Score**
Clear understanding of subject in Routes	0%
Substantial understanding of subject and development plans at Route level	1%
Some understanding of subject at Route level but no available development plans	2%
Little or no clear understanding of subject at Route level	3%

Table 3 Current Level of Embedment

4) (Network Rail's **'Track Record'** of improvements in the subject since AMCL's initial AMEM Assessment in 2006, including consideration of how systematic and sustainable the improvements have been.

Track Record	
Criteria	**Risk Score**
Demonstrable history of systematic and sustainable improvement	0%
Demonstrable phases of improvement	1%
Some improvement but not systematic	2%
Little or no improvement	3%

Table 4 Track Record

5) (The level of dependency on **'Wider Industry Interfaces'** in achieving the stated scope, i.e. consideration of risks potentially outside of Network Rail's control.

Wider Industry Interfaces	
Criteria	**Risk Score**
Wholly within Network Rail's control	0%
Largely within Network Rail's control	1%
Significant dependencies on external parties	2%
Critical dependencies on external parties	3%

Table 5 Wider Industry Interfaces

The totals of the weighted risk factors for each of the 39-subjects of Asset Management were subtracted from the Baseline view score for each subject to establish the Lower Estimate view score for that subject.

The overall process included:

- Consideration of the appropriateness of the assigned resource and nominal timescales, based on AMCL's existing knowledge and experience of Network Rail and comparable organisations and development processes worldwide;
- Consideration of the current status at the end of CP4 (also considering the findings of the AMEM Lite process);
- The overlay of a structured risk assessment of Network Rail's current progress and future implementation/development plans to assess the robustness of the work programme; and

- The identification of areas of potential short-fall, achievement and over-achievement against the end of CP5 output target of 72% at both 39-subject and six-group level.

In some cases the established Lower Estimate view scores were slightly less than the End of CP4 full AMEM assessment scores. As well as the risk factors outlined above, this was considered to be reflective of the 'prima facie' nature of the review and the further refinement of the AMEM against the GFMAM's 'Asset Management Landscape', Second Edition since the completion of the End of CP4 AMEM assessment.

2.2.3 Identification of Further Opportunities

The identification and documentation of areas of potential opportunity for Network Rail was established as part of the overall Baseline and Lower Estimate view assessment processes and included consideration against three key sources:

1) Gaps against the scope and requirements considered in the AMEM model to achieve world best practice;
2) Gaps against the Improvement Specifications established in a previous Asset Management Improvement Roadmap developed by AMCL for Network Rail in 2012; and
3) Gaps against emerging best practice based on AMCL's global consulting and assessment practices.

The above assessments were undertaken at the 39-subject level and the key findings are included for each subject in Appendix A. A summary table of gaps against the Improvement Specifications established in the Asset Management Improvement Roadmap developed by AMCL for Network Rail in 2012 is included in Appendix B.

2.3 RAGG Definition

Each of the scores for the Baseline and Lower Estimate views, at both 39-subject and six-group levels, were categorised using the RAGG (Red, Amber, Green 1, Green 2) scale shown in Diagram 5.

A four stage RAGG key was utilised to reflect the different levels of assuredness established as part of this review. Due to the 'prima facie' nature of the review it was considered material to show where scores were anticipated to exceed the 72% target but also to differentiate those scores which provided a notably higher level of likelihood in achieving that score in January 2018, i.e. those over 75% in the RAGG scale selected.

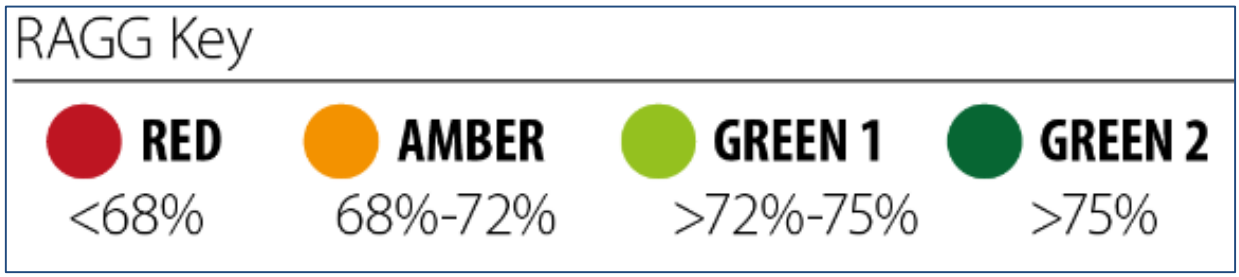

Diagram 5 RAGG Key

It should also be noted that scores categorised as Amber in the RAGG scale are relatively close to the 72% target, particularly given the 'prima facie' nature of the assessment process discussed.

3 Summary of Results

The overall findings of the 'prima facie' review are captured in the 39-subject chart shown in Diagram 6.

This chart shows the Baseline view and Lower Estimate view scores against each subject, as assessed using the latest version of the AMEM, which is fully aligned with the latest 'Asset Management Landscape', Second Edition. Alongside the Baseline and Lower Estimate views, the End of CP4 AMEM assessment score is also shown. This is as established at the End of CP4 against a version of the AMEM in use at the time and is provided for reference only.

The chart also provides an overview of the six-group level scores, denoted by the coloured labels around the outside.

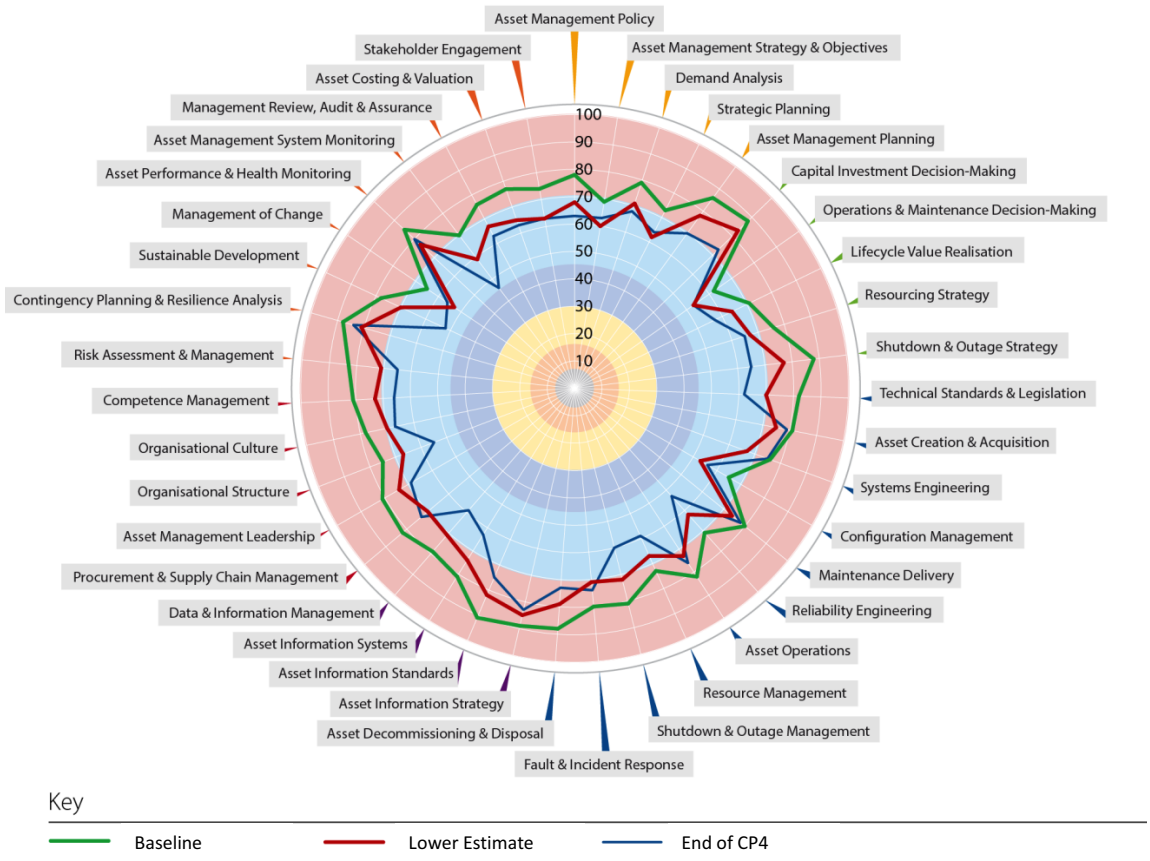

Diagram 6 Summary of Findings

The specific six-group scores of the Baseline and Lower Estimate views are shown overleaf in Diagram 7 and Diagram 8 respectively. As well as the overall group score and RAGG categorisation, these provide the RAGG categorisation for each of the 39-subjects. This enables an understanding of the relative strength or weakness of each subject within the group and

insight into which subjects are currently considered by AMCL to pose the greatest risk to achieving 72% at the group level in January 2018.

The key findings across each of the six-groups are discussed in Section 5.

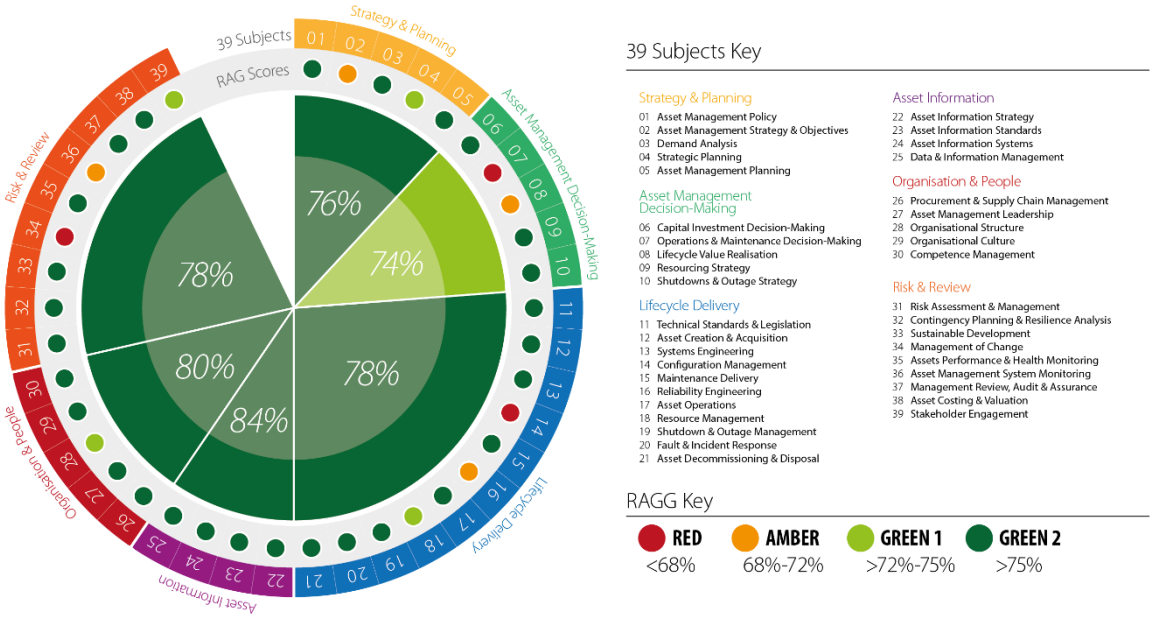

Diagram 7 Baseline View

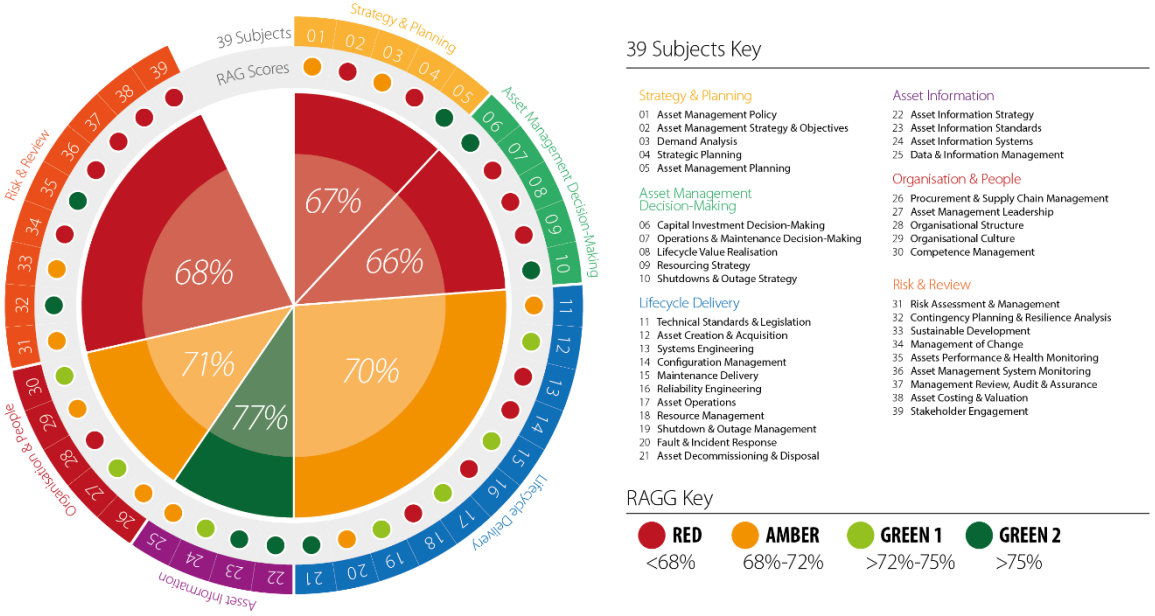

Diagram 8 Lower Estimate View

4 Key Findings

4.1 Roadmap Structure and Assurance

Network Rail has established a core 'AMEM Roadmap for CP5' (version 3, 3/11/2014 as reviewed) which defines the organisation's high-level Asset Management capability improvement plans during CP5 for each of the 39-subjects. The core structure of the document includes the following:

- Description – an overall definition of the subject from published definitions;
- Target Score – Network Rail's defined target score for January 2018 based on simple algorithms applied to the score achieved at the End of CP4;
- Capability Statement – an overall statement summarising the planned future state at January 2018;
- Improvement Specification – a generally more detailed definition of the planned future state in a more measureable form;
- Dependencies – identification of any dependencies on other subjects within the Roadmap for achieving the Improvement Specification;
- Programme/Project/Activity – a high-level overview of planned activities to deliver the future state;
- Owner – identification of the named individual responsible for delivering the specific Activity; and
- January 2018 AMEM Success – success criteria for evidencing achievement of the planned future state.

AMCL considers that the structure identified above generally provides scope for including the appropriate information for a high-level Asset Management Improvement Roadmap, where it is supported by more detailed underlying plans. The one exception to this is that the structure currently only includes one key milestone in terms of monitoring successful implementation, namely the January 2018 Success Criteria.

Although high-level annual milestone statements are included in the latest Network Rail Asset Management Strategy at the six-group level, there are no clearly documented interim milestones at the 39-subject level which would enable progress to be monitored against nominal trajectories and provide assurance of achieving the January 2018 target of 72% at group level, or identify where acceleration of implementation may be required.

Network Rail was already aware of this issue and was working to develop appropriate milestones at the time of this review. This was being undertaken within a developing framework of 'Overall Measures of Success' for Asset Management. The approach identified includes both leading and lagging measures for Asset Performance (i.e. outputs) and Asset Management (i.e. underlying capability), with specific lead indicators assigned to each of the six groups of Asset Management.

Network Rail has also developed 'waterfall charts' for each of the six-groups, showing anticipated benefits – in terms of Network Rail's anticipated increase in AMEM maturity scores throughout CP5 – for the planned high-level activities. Network Rail's anticipated scores in January 2018 across the six-groups were considered by AMCL to be generally conservative when compared to the Baseline view for full and timely implementation of the CP5 Roadmap. An example is shown in Diagram 9.

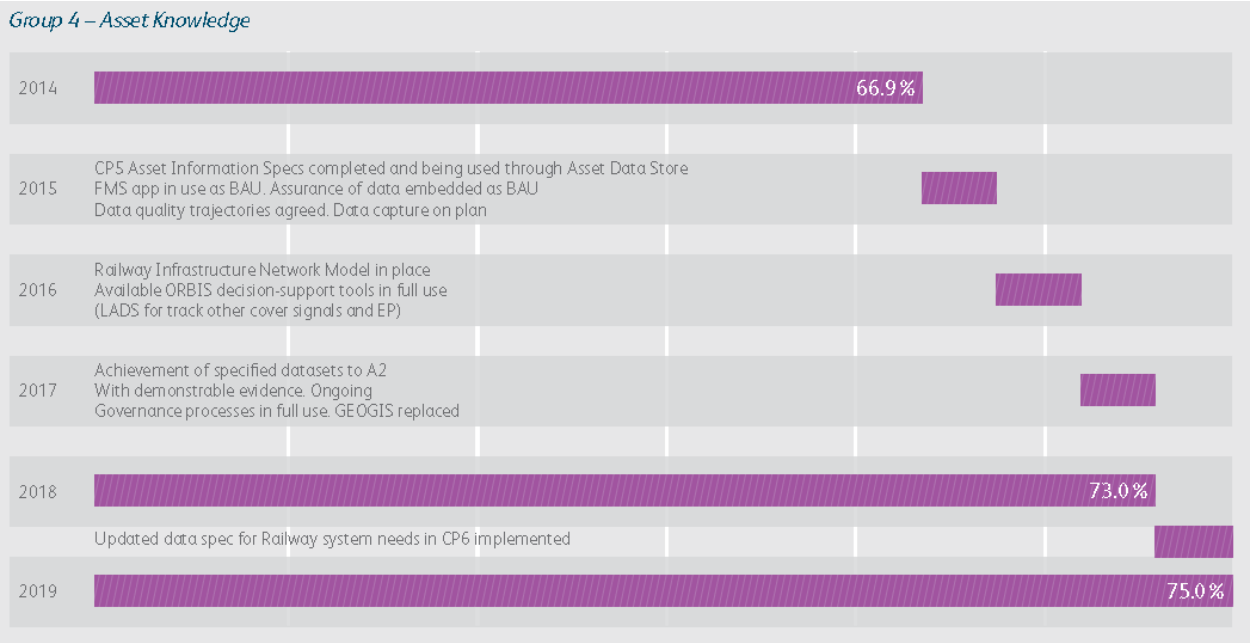

Diagram 9 Example Group Level 'Waterfall Chart' (Source: Network Rail)

Overall, Network Rail appears to be developing an appropriate approach to the monitoring of its Asset Management capability maturity and the anticipated improvements towards Excellence over CP5. However, further development of specific and measureable interim success criteria at the 39-subject level would provide greater assurance of progress in terms of Asset Management capability.

It should be noted that there is also likely to be assurance of progress provided by a planned AMEM assessment, to be undertaken in 2016, and annual 'AMEM Lite' assessments at Route level. Although these were not yet confirmed at the time of the review.

4.2 Roadmap Content

Although the structure of the Roadmap catered for appropriate levels of information, the actual quality of the content was found to vary. Some subjects included relatively comprehensive Improvement Specifications and high-level Activities – aligned with more detailed supporting plans – and objective and measureable Success Criteria, others were found to be less developed. Examples include:

- Simplistic Improvement Specifications, such as subject 3.7 (Asset Operations) – "*A business plan to be created to cover all aspects of Asset Operations*";
- Limited definition of planned activities, such as subject 3.4 (Configuration Management) – "*Introduction of control forums such as NRAP*"; and
- Lack of readily measureable success criteria, such as subject 3.1 (Technical Standards & Legislation) – "*New processes and rules embedded with no perceived degradation in safety*".

These stand-alone quotes have to be considered in the context of the overall information provided for the relevant subject but as a general rule some subjects were clearly more developed than others. This was stated by Network Rail as being largely a matter of prioritisation. For example, the CP5 Roadmap information was much more developed and supported by further detailed evidence in subjects such as 'Capital Investment Decision Making' (2.1) and 'Whole Life Cost & Value Optimisation – Analysis & Tools' (2.3), than examples such as 'Technical Standards & Legislation' (3.1) quoted in the bullets above. Subjects such as this were already considered by Network Rail to be effective and further development plans had not yet been prioritised.

Whilst prioritisation of effort is a necessity and there is nothing inherently wrong with the various statements in the less developed subjects of the Roadmap, without comparable levels of detail, particularly around planned activities, it is difficult to assess and assure how each will contribute to the overall success at the group level. Improving the level of plan definition throughout would further support Network Rail's anticipated increase in scores captured in the 'waterfall charts' and enable greater assurance of appropriate plan sequencing.

Overall, the CP5 Roadmap content is difficult to align with specific delivery projects and initiatives. A significant amount of work is ongoing but the next level of granularity provided to AMCL, in terms of programmes and activities below the CP5 Roadmap, was variable. It was also, in general, aligned to initiatives and programmes ongoing at the end of CP4 rather than being clearly and demonstrably aligned with the high-level activities captured in the Roadmap. A clear understanding of how initiatives have been prioritised and what the commensurate level of detailed plan for each level of priority is would provide greater assurance of progress and ultimate success.

4.3 Governance and Dependencies

Network Rail has established well-structured governance arrangements for the core Asset Management Strategic Theme (AMST), including a Board which directly oversees the majority of CP5 Roadmap specific initiatives. Attendees, terms of reference, reporting and interaction with sub-committees all appear to be well defined and evidenced.

Whilst the AMST Board provides oversight and direction and has key links with other corporate initiatives, a number of contributors to the overall AMEM score are not directly within its control. Diagram 10 shows the range of contributing programmes/initiatives across the organisation, including those outside the AMST Asset Management Excellence theme.

Asset Management Excellence - Contributing Programmes		Contributors to AMEM model																																		
	Strategic Theme	Asset Management Excellence													Capacity & Performance					RT	People		Safety	Proj, Devel	Funding & Affordable											
	Sub Portfolio	AMIP Accountable									Other																									
	Workstream	1	2a	2b	2c	2d	2e	3	4a	4b	5																									
Key Specific Roadmap Action Significant Contribution Other Contribution	Project Heading	AM Policy & Strategy	Asset Management System	Asset Policy & WLC Tools	Risk Based Maintenance & II	Railway Systems Eng	BCAM	Competency & Culture	Assurance Programme	Asset data Governance	ORBIS	Energy Services	Network Rail Telecoms	Weather & Climate Change	Fault Man Improvement	Depot Initiitave	TRAIL & Route models	Integrated Access Planning	Rail Technical Strategy	Behaviours/Safety Culture	Capability framework	Business Critical Rules	Integrated Risk Framework	Programme Managmnt	Clienting 'Role'	Unit Costs	Execution Plan	Maximo	Long Term Plan Process	Asset Rationalisation	Supplier engagement imp
AMEM GROUP	Accountable	BE	BE	BE	ME	BH	BE	BE	BE	PB	PB	EG	AH	BH	ME	ME	ME	FD	SY	RD	RD	RoB	GL	MA	RE	JN	JS	ME	RE	PP	IS
Strategy & Planning																																				
Whole Life Decision making																																				
Lifecycle Delivery																																				
Asset Knowledge																																				
Organisation & People																																				
Risk & Review																																				

Diagram 10 AMEM Contributing Programmes (Source: Network Rail)

The diagram above and discussions during the review evidenced that Network Rail did have a good understanding of contributing factors but was unable to provide a programme of work

linking the activities and timings of all contributing programmes to the overall Asset Management goals during CP5. This was recognised by Network Rail and work was on-going at the time of this review to establish a consolidated plan and further assurance of the overall sequencing and approach.

4.4 National Level Factors

A number of national, organisational wide, factors which were considered to have potentially material impacts on the current status or future delivery of the Network Rail CP5 Roadmap were noted during the review.

The organisation was undergoing a transformational change in its operating model, moving to align the organisational structure with a matrix model based around:

- Service provision;
- Devolved functions; and
- Head Office activities.

On-going rollout of the above structure and team and individual role changes resulting from the revised approach were noted by interviewees during the review and may have had an impact on the understanding of specific responsibilities related to the delivery of the CP5 Roadmap. Individual ownership of specific CP5 Roadmap activities, as defined in the document itself, were questioned by a number of the Network Rail stakeholders interviewed. Although top level accountability for the contributing initiatives appears to be clear and well documented (see Diagram 10 as one example), unequivocal and fully accepted responsibility for 39-subject level activity delivery will be a key factor in assuring the successful implementation and requires further assurance.

Network Rail's Network Operations Strategy had been recently finalised and published at the time of the review, including the following key chapters:

- Network Operations CP5 Safety Plan;
- Network Operations CP5 Performance Plan;
- Network Operations CP5 Efficiency Plan;
- Network Operations CP5 Asset Plan;
- Network Operations CP5 Customer Plan; and
- Network Operations CP5 People Plan.

Because of the range of coverage outlined in the bullets above, the overall strategy is likely to have wide-ranging impacts across the six groups of Asset Management over time but was still at a strategic level of development, in terms of the detail available to AMCL during the review. This was duly considered in the risk factors which contributed to the Lower Estimate view.

4.5 Route Level Factors

The Network Rail defined list of key stakeholders for this review included individuals at only two Routes – LNW and Anglia – as a proxy for the wider Route organisations. Both presented clear evidence of developing Route specific Asset Management improvement plans which would align with the overall Asset Management Strategy and CP5 Roadmap, although the approach varied by Route. Both also identified concerted efforts to improve overall Asset Management planning and to improve alignment between demand and output targets and the specification of required levels of asset performance.

In terms of overall contribution to achieving Asset Management Excellence over CP5, the plans for both Routes were at a relatively early stage of development and implementation. Both Routes also identified that general understanding of Asset Management and the overall CP5 Roadmap were largely limited to key individuals at the time but had active plans in place to develop awareness.

Overall, the increasing capability and involvement in Asset Management at the Route level was a positive factor in the review, based on this sample of two Routes, which has potentially wide-ranging benefits to Network Rail in the medium to long-term.

5 Group Level Findings

The following sections provide a summary of the key strengths, opportunities and risks of Network Rail's plans, available to AMCL at the time of the review, for each of the six-groups of Asset Management. The findings included in each of these sections are based on the 'prima facie' review of evidence and interviews held within the constraints of the mandate and the availability of documented evidence at the time and may not reflect all work being undertaken across the organisation as a whole.

It should also be reiterated that the forecast scores for January 2018 are based on a revised version of the AMEM model to that used at the End of CP4 AMEM assessment, including:

- Further developments of Asset Management best practice identified since the End of CP4 AMEM assessment; and
- The full, detailed, alignment of the model with the GFMAM's 'Asset Management Landscape', Second Edition since the completion of the End of CP4 AMEM assessment.

Relevant details of the assessment and scoring at the 39-subject level can be found in Appendix A.

5.1 Strategy and Planning

The Network Rail and ORR agreed trajectory and recent (2009-2014) AMEM scores for the group can be seen in the following diagram, alongside the AMCL predicted (see Section 2) Baseline and Lower Estimate views in January 2018. Also shown for reference is the range of 'AMEM Lite' baseline scores across all Routes established between November 2013 and March 2014. These baseline scores used a Route specific question set rather than the national AMEM Assessment question set, which is described fully in the AMEM Lite: Final Report, v1.0, 8th August 2014.

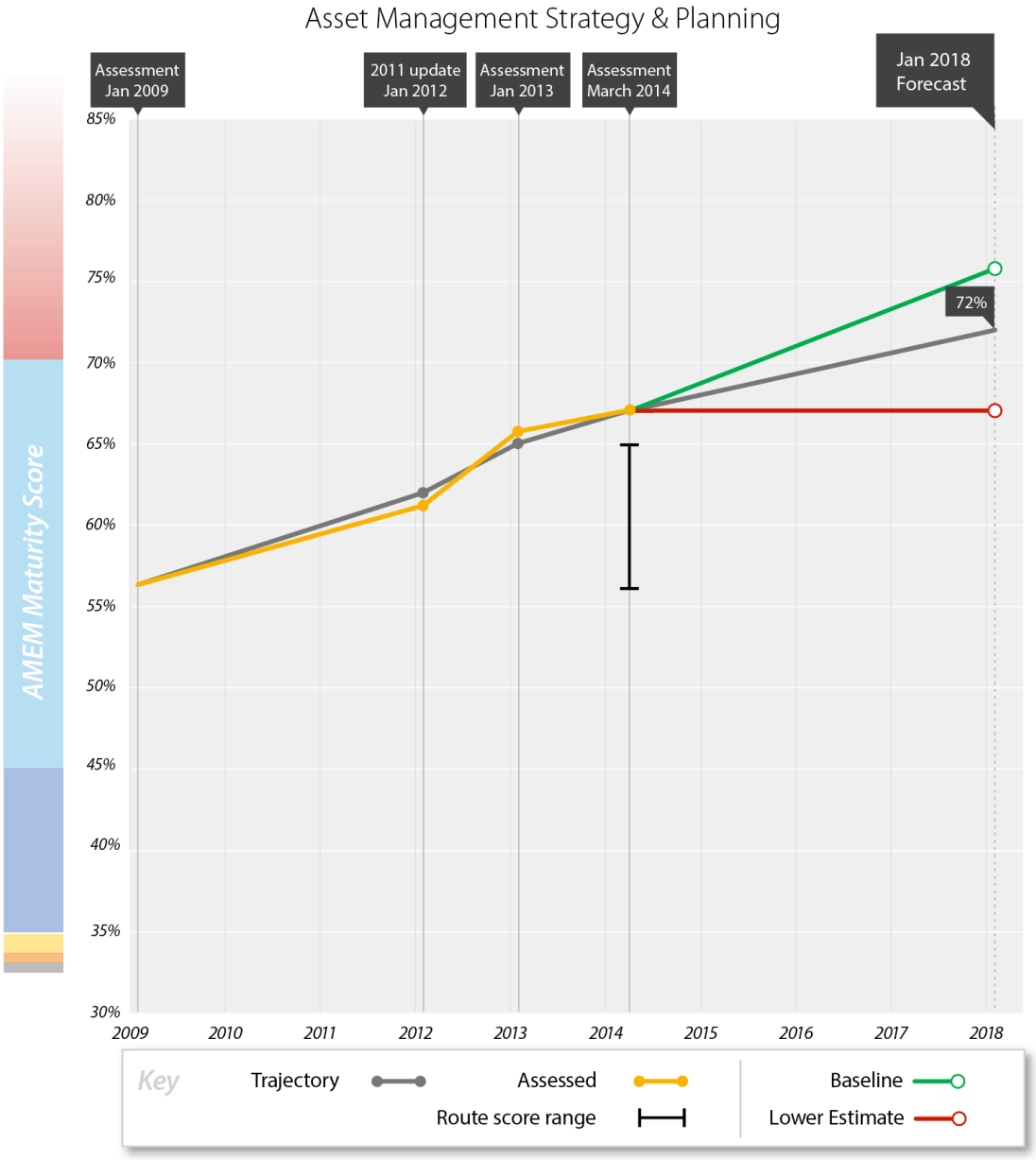

Diagram 11 Strategy & Planning

Network Rail has already made progress in this area since the End of CP4 assessment, including the publication of further revisions of its Asset Management Policy and Asset Management Strategy. Network Rail's CP5 Roadmap also incorporates the majority of the outstanding elements from AMCL's 2012 Asset Management Roadmap, developed on behalf of Network Rail.

However, there is currently a lack of detailed plans for the activities during CP5 across many of the relevant subjects, with key exceptions, such as the Long-Term Planning Process which is well defined but, at least in part, dependent on external parties.

Key areas of opportunity for the group include:

- Further refinement of the overall Asset Management System to align with the Excellence maturity target;
- Improved definition of SMART Asset Management Objectives and an overall criticality approach;
- Senior management (Centre and Route) buy-in to the Asset Management Strategy and Objectives and further embedding within the Routes;
- Translation of demand analysis into asset specifications (e.g. RAMS) and continuing improvements in the justification of predicted outputs; and
- Revised documentation of the strategic planning approach, including top-down and bottom-up interactions.

5.2 Asset Management Decision-Making

The Network Rail and ORR agreed trajectory and recent (2009-2014) AMEM scores for the group can be seen in the following diagram, alongside the AMCL predicted (see Section 2) Baseline and Lower Estimate views in January 2018. Also shown for reference is the range of 'AMEM Lite' baseline scores across all Routes established between November 2013 and March 2014. These baseline scores used a Route specific question set rather than the national AMEM Assessment question set, which is described fully in the AMEM Lite: Final Report, v1.0, 8th August 2014

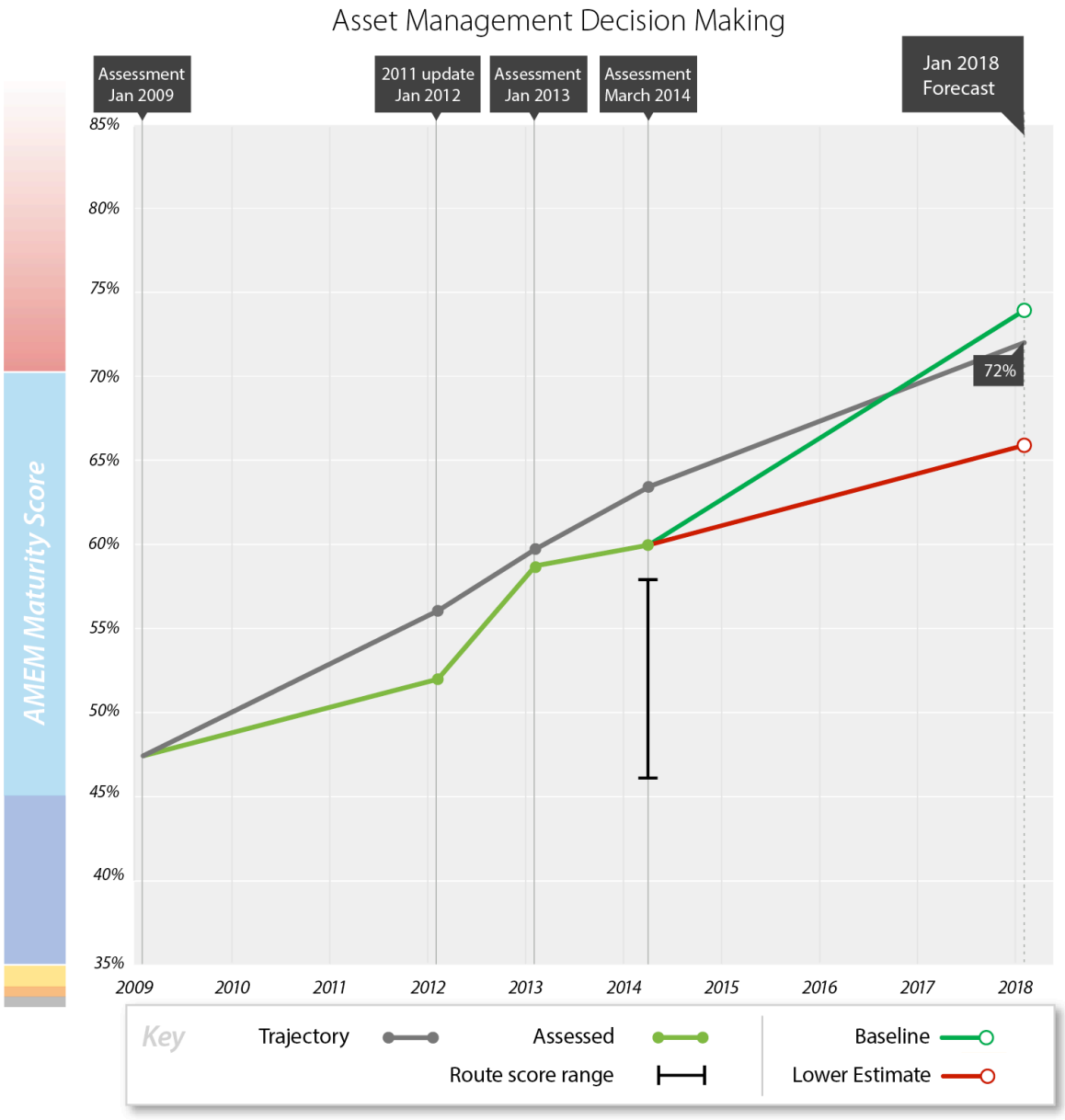

Diagram 12 Asset Management Decision-Making

There was significant variation in the level of plan detail available to AMCL for the subjects within this group during the review. Network Rail's work on Asset Policies and the suite of whole-lifecycle cost modelling tools was amongst the most robust evidence provided and detailed a potentially best practice approach. Conversely, there were, at the time, no detailed plans available for the next phase of the company's risk based maintenance programme.

With respect to scope, there were two predominant factors within this group which had a negative impact on predicted maturity scores:

1) (The lack of alignment between Network Rail's current reliability centred maintenance approach and the quantified cost-risk trade-off approach to maintenance optimisation which the AMEM seeks to achieve higher levels of maturity in the Operations and Maintenance Decision Making subject; and
2) (A current lack of clear and detailed plans provided to AMCL for the management of aging assets and asset rationalisation, which are now included in the Lifecycle Value Realisation subject.

Other key areas of opportunity available to Network Rail include:

- Clarity of the approach to understanding capital investment/business cases against output requirements and their confidence levels;
- Clarification of the organisational cost-risk balance/appetite; and
- Clarity of the approach to continuous monitoring and improvement of forecasting accuracy against actuals for Resourcing Strategy and Shutdown & Outage Strategy.

5.3 Lifecycle Delivery

The Network Rail and ORR agreed trajectory and recent (2009-2014) AMEM scores for the group can be seen in the following diagram, alongside the AMCL predicted (see Section 2) Baseline and Lower Estimate views in January 2018. Also shown for reference is the range of 'AMEM Lite' baseline scores across all Routes established between November 2013 and March 2014. These baseline scores used a Route specific question set rather than the national AMEM Assessment question set, which is described fully in the AMEM Lite: Final Report, v1.0, 8th August 2014.

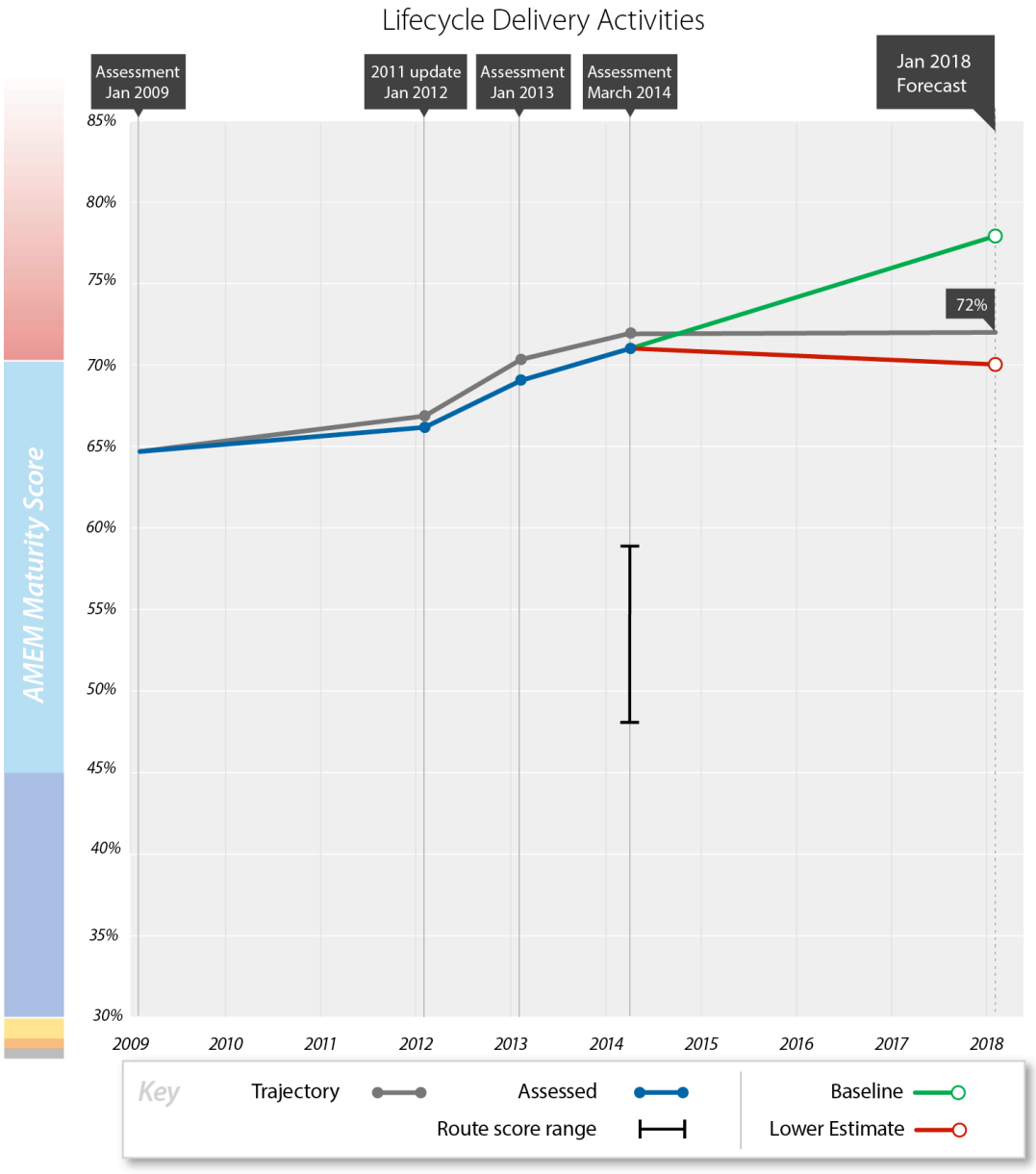

Diagram 13 Lifecycle Delivery

In general terms the scope included in the CP5 Roadmap and supporting documentation available to AMCL during the review for the subjects within the Lifecycle Delivery group tended to be wide-ranging but high-level, with limited plan detail available to support the assessment. The Network Operation Strategy and its constituent chapters (see Section 4.4) outlined the strategic intent across many of the subjects but detailed implementation plans were still under development. These were supported in some subjects by the emerging plans for 'The Digital Railway' and the Route specific plans identified for LNW and Anglia but further clarity is required to assure the robustness and overall contribution towards Excellence in Asset Management.

One area of emerging good practice noted is in the development off P3M3 for Network Rail and the associated Clienting and Sponsorship processes. Although this still requires further embedding throughout the organisation, there were a range of more detailed plans in place for this.

Key scope opportunities for Network Rail to consider in Lifecycle Delivery include:

- Regular monitoring and management of project handback processes and performance;
- Definition of activities to achieve a systematic configuration management approach, including policies and processes on a whole system, whole life basis;
- Clarification of defect categorisation and missed maintenance requirements in accordance with the on-going risk based maintenance and business critical rules programmes;
- Assurance of consistent performance plan and root-cause analysis processes across the devolved organisation, prioritised by Route level RAMS analyses;
- A focus on the tactical elements of Resource Management and Shutdown & Outage Management, as opposed to the more strategic approach adopted in the CP5 Roadmap for these subjects; and
- Continuous monitoring and improvement of forecasting accuracy against actual at Route/DU level for Resource Management and Shutdown & Outage Management.

5.4 Asset Information

The Network Rail and ORR agreed trajectory and recent (2009-2014) AMEM scores for the group can be seen in the following diagram, alongside the AMCL predicted (see Section 2) Baseline and Lower Estimate views in January 2018. Also shown for reference is the range of 'AMEM Lite' baseline scores across all Routes established between November 2013 and March 2014. These baseline scores used a Route specific question set rather than the national AMEM Assessment question set, which is described fully in the AMEM Lite: Final Report, v1.0, 8th August 2014.

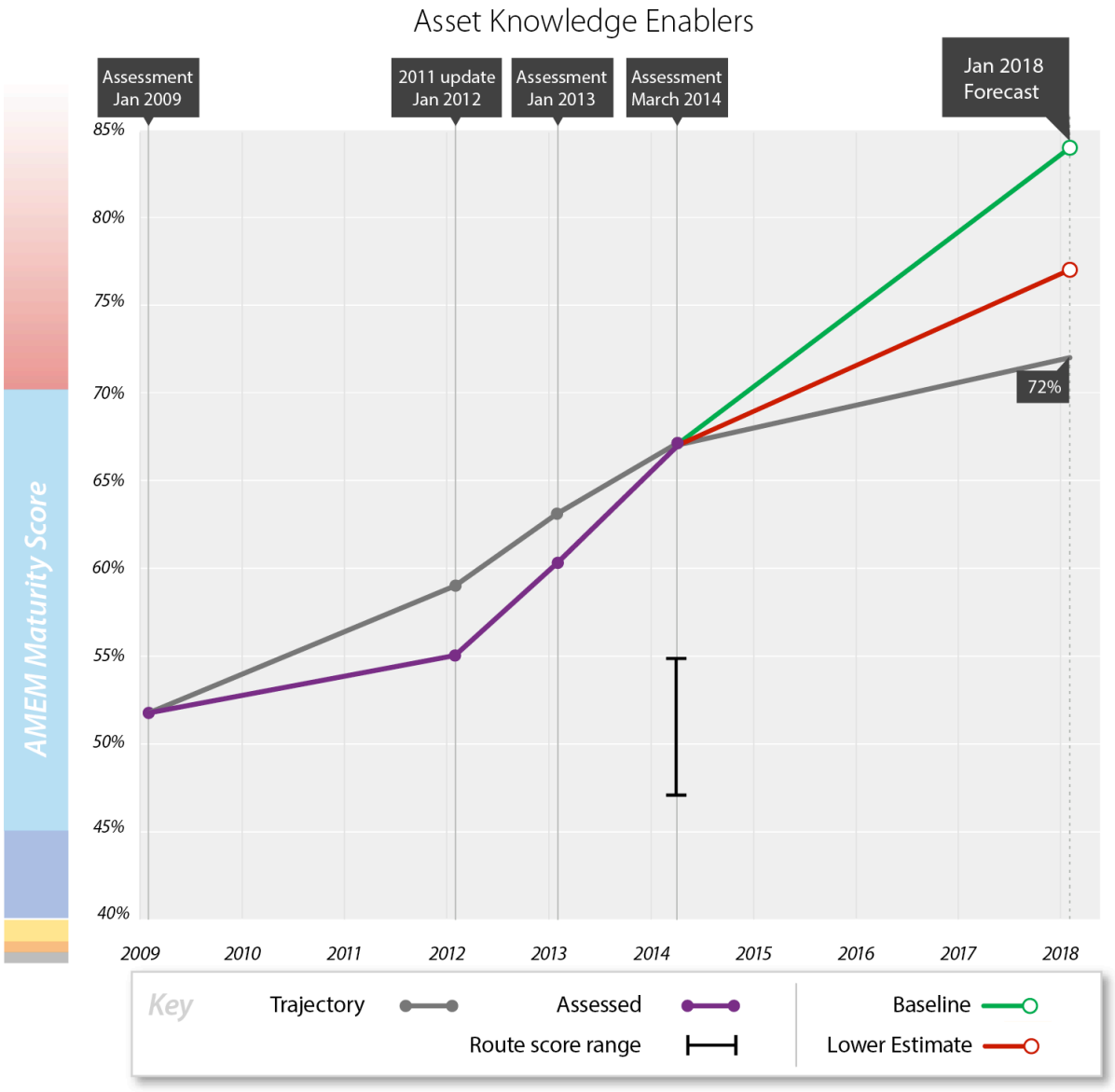

Diagram 14 Asset Information

Based on the scale and scope of this review, combined with the available level of plan, investment and resource detail provided by Network Rail's Asset Information team and ORBIS (Offering Rail Better Information Services) Programme no specific and material further scope opportunities were identified. Network Rail's progress in the Asset Information area is considered to be demonstrable, even if some Route level practitioners have identified concerns about the period of time being taken to implement changes.

The Asset Information Strategy and associated plans continue to appear robust and are supported by emerging best practice in the specification of asset information and the rollout of systems such as LADS (Linear Asset Decision Support). Data & Information Management still lags behind the other subjects in the group in terms of predicted scores but robust plans are in place to support the significant increase in capability predicted for January 2018 and beyond.

5.5 Organisation and People

The Network Rail and ORR agreed trajectory and recent (2009-2014) AMEM scores for the group can be seen in the following diagram, alongside the AMCL predicted (see Section 2) Baseline and Lower Estimate views in January 2018. Also shown for reference is the range of 'AMEM Lite' baseline scores across all Routes established between November 2013 and March 2014. These baseline scores used a Route specific question set rather than the national AMEM Assessment question set, which is described fully in the AMEM Lite: Final Report, v1.0, 8th August 2014.

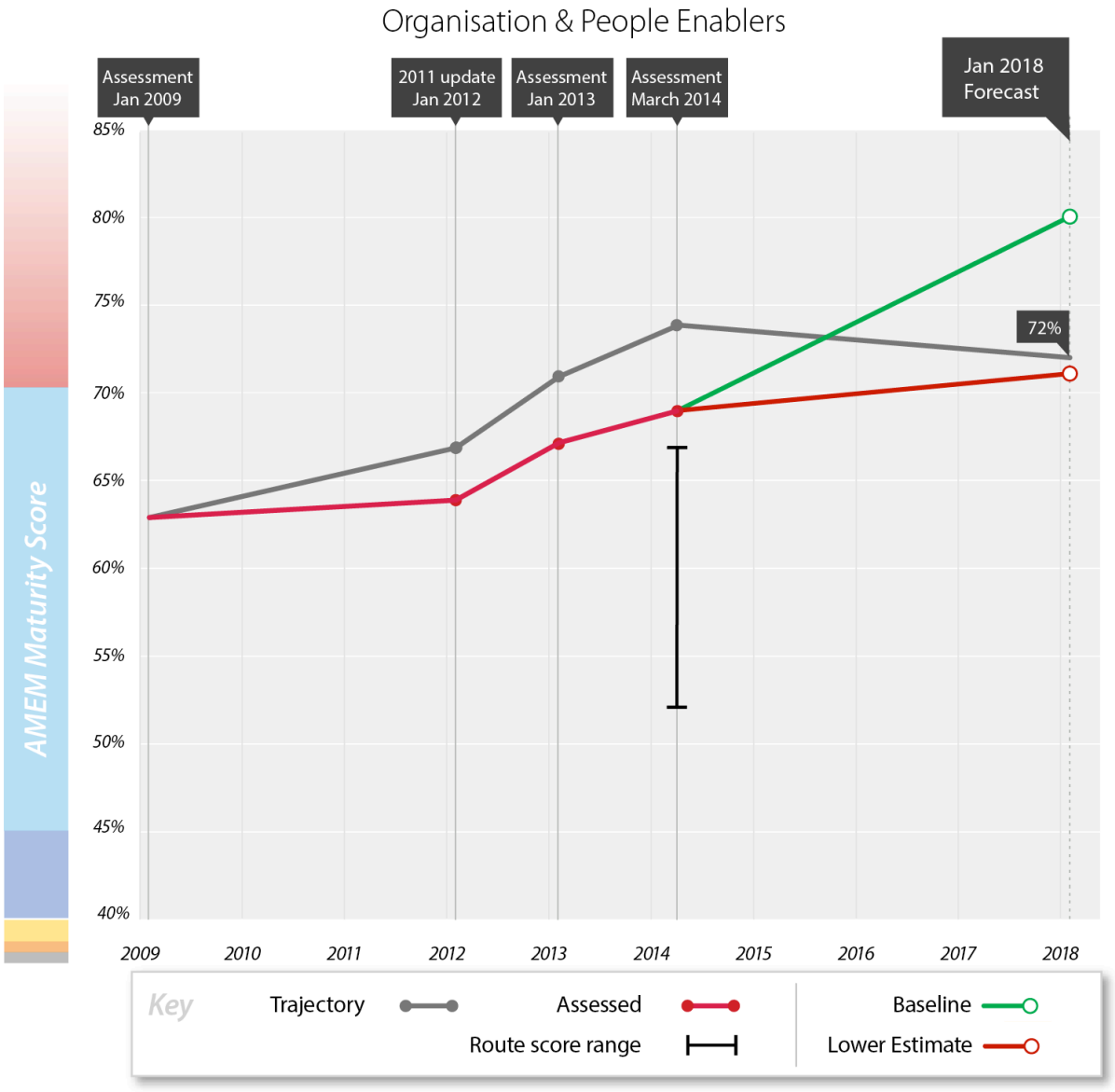

Diagram 15 Organisation & People

The Organisation & People group has historically been some way below trajectory but Network Rail's current CP5 Roadmap and supporting plans indicate a significantly more structured and robust approach is being targeted during CP5. Network Rail's high-level scope and activities in the CP5 Roadmap have included the key factors identified in AMCL's 2012 Roadmap as well as all the critical elements which the AMEM looks for in high performing organisations. There are also relatively robust plans underpinning most of the high-level activities identified. However, to achieve the score delta identified in the Baseline view by delivering the whole scope of work in a timely manner will require a step change in approach and culture within the organisation. This risk is considered by AMCL to be potentially increased by Network Rail's track record in this area and the relatively low levels of awareness regarding Asset Management Organisational Structure, Organisational Culture and Competence Management identified in the Routes during the recent AMEM Lite assessments. Network Rail's plans are very positive but potentially challenging.

Key opportunities for Network Rail to consider in this group include:

- Continual monitoring and development of the Asset Management competency framework to assure its embedment throughout the organisation;
- Continual monitoring and improvement of actual against anticipated cost savings in Procurement and Supply Chain, both nationally and at Route level; and
- Definition of information flow requirements between different teams, functions and management levels in the organisational structure.

5.6 Risk and Review

The Network Rail and ORR agreed trajectory and recent (2009-2014) AMEM scores for the group can be seen in the following diagram, alongside the AMCL predicted (see Section 2) Baseline and Lower Estimate views in January 2018. Also shown for reference is the range of 'AMEM Lite' baseline scores across all Routes established between November 2013 and March 2014. These baseline scores used a Route specific question set rather than the national AMEM Assessment question set, which is described fully in the AMEM Lite: Final Report, v1.0, 8th August 2014.

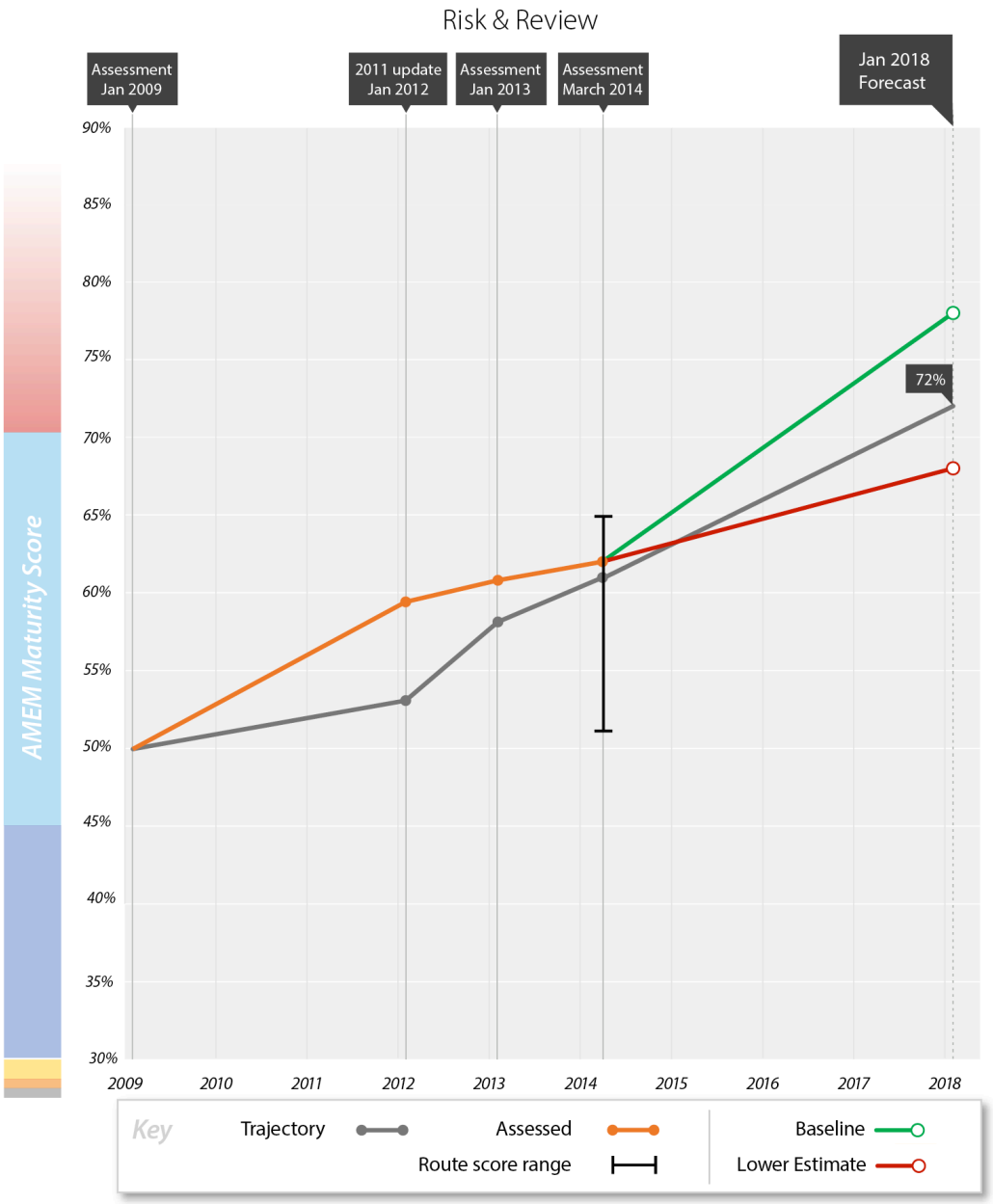

Diagram 16 Risk & Review

The Risk & Review group has remained ahead of trajectory over recent years but progress has levelled off during recent assessments, as different approaches for overall risk management have been developed by Network Rail and relatively rapidly superseded by the next development.

The overall high-level scope of work outlined in the CP5 Roadmap for this group appears reasonably well defined but at the time of the review there was generally a limited amount of more detailed definition of the activities, resources and programme made available to AMCL.

Although this is arguably the most disparate of the six groups of Asset Management in terms of subject content, they are all linked by a common framework and approach for risk management against a corporately defined appetite for risk, supported by continuous monitoring and improvement cycles. It is ensuring that this common and systematic approach to risk management, across all levels of the organisation, is embedded and fully aligned with the Asset Management System that is crucial to the achievement of the Excellence maturity band.

Key opportunities for Network Rail to consider in this group include:

- Definition of a corporate appetite for risk and a common approach to the identification and management of mitigations;
- Alignment of strategic Asset Management, tactical Asset Management and operational risks and risk registers;
- Regular and prioritised testing of contingency plans and scenarios;
- Integration of ‘triple-bottom line’ accounting into the Asset Management System;
- Clear definition of a Management of Change framework and policy, supported by relevant processes and accountabilities;
- Greater clarity of the feedback loop from asset performance to the continuous review and improvement of the Asset Management System against corporate objectives and outputs;
- A greater focus on management review process for the Asset Management System to assure adherence to the system, its overall fitness for purpose and continual improvement;
- A documented asset valuation methodology and register, aligned with asset criticality; and
- Structured and documented stakeholder engagement and management policies, processes and plans.

6 Conclusions

The key conclusions of this 'prima facie' review are:

- Network Rail appears to be developing an appropriate approach to the monitoring of Asset Management capability maturity, including target scores at the 39-subject level, 'waterfall charts' of improvements at the six-group level and an integrated suite of key performance indicators.
- The CP5 Roadmap is well structured and provides scope for the appropriate information for a high-level Roadmap, where it is supported by more detailed underlying plans, with the exception that it currently only includes Success Criteria for the January 2018 milestone.
- Further development of specific and measureable interim Success Criteria at the 39-subject level would provide greater assurance of the CP5 Roadmap's successful progress towards Excellence over CP5. Network Rail has already recognised this opportunity and has stated it is currently working to develop further milestones.
- The current quality and detail of the content held within the CP5 Roadmap was found to vary by subject, from relatively comprehensive Improvement Specifications, high-level Activities and objective and measureable Success Criteria to more simplistic statements of wide-ranging intent.
- No criteria exist that enable the prioritisation of CP5 Roadmap activities, which would then enable Network Rail to justify the level of planning required and also define the granularity required for those plans.
- As a result, the availability of more detailed underpinning information, such as programme plans, resource plans and investment papers also varied, depending on the specific initiative concerned, which was clarified by Network Rail as a prioritisation of effort.
- Whilst prioritisation is a necessity and there is nothing inherently wrong with the various statements in the less developed subjects of the CP5 Roadmap, without comparable levels of detail, particularly around planned activities, it is difficult to assure how each will contribute to the sequencing and overall achievement and embedding of Excellence.
- Overall, the Roadmap content is difficult to directly align with actual delivery projects and initiatives, based on the information provided to AMCL, as the delivery mechanisms appear to largely align with initiatives that were ongoing at the end of CP4 rather than the specific high-level activities captured in the Roadmap.
- This in itself is not a negative factor as Network Rail should continue to focus on what is best for the business rather than simply trying to attain specific AMEM maturity scores but it does

lead to difficulties in demonstrating that the CP5 Roadmap, which is aligned with the AMEM and does target specific maturity scores, is going to be deliver those scores.

- Network Rail has established well-structured governance arrangements for the core Asset Management Strategic Theme (AMST) but a number of contributing programmes are not directly within its control and Network Rail did not provide a programme linking all relevant activities.
- Although accountability for contributing initiatives appears to well documented, individual ownership of specific CP5 Roadmap activities, as defined in the document itself, was not expected or questioned by a number of the Network Rail stakeholders interviewed.
- Based on a sample of two Routes the increasing capability and involvement in Asset Management at Route level was a positive factor and both had active plans in place to develop the currently limited awareness of Asset Management and the overall CP5 Roadmap within the Route organisation.
- Strategy & Planning – progress has been made since the End of CP4 assessment but there was limited availability of detailed plans for the relevant subjects during CP5 and further improvement opportunities were identified in relation to the Asset Management System, Asset Management Objectives, translation of demand into asset specification and documentation of strategic planning processes.
- Asset Management Decision-Making - Network Rail's on-going work on Asset Policies and whole-lifecycle cost modelling was amongst the most robustly evidenced to AMCL but there were only limited details available for the next phase of the company's maintenance optimisation plans and the management of aging assets.
- Lifecycle Delivery – The CP5 Roadmap and the recently published Network Operations Strategy provided a wide-ranging overview of plans for this group but further development is required of detailed programmes and activities during CP5.
- Asset Information - The Asset Information Strategy and associated plans continue to appear robust and are supported by emerging best practice in the specification of asset information and data management and the rollout of systems such as LADS (Linear Asset Decision Support).
- Organisation & People - The CP5 Roadmap and supporting plans indicate a structured and robust approach to improvements in this group is being targeted during CP5 but, in AMCL's opinion, delivery is likely to require a step change in approach and culture within the organisation, which is positive but potentially challenging.

- Risk & Review - The high-level scope of work outlined in the CP5 Roadmap for this group appeared reasonably well defined but there was limited availability of detailed plans to assure that a common and systematic approach to risk management, across all levels of the organisation, will be embedded and fully aligned with the Asset Management System to achieve the Excellence maturity band.

7 Recommendations

The key recommendations of this 'prima facie' review are:

1) (By March 2015 Network Rail should define a consistent set of criteria which allow it to justify explicitly the prioritisation of its CP5 Roadmap activities at 39-subject level, and which provide guidance on the commensurate level of detailed planning and effort.
2) By June 2015 Network Rail should document appropriately detailed plans for each of the high-level activities identified in the CP5 Roadmap in an overall 12-month rolling programme, including addressing the outstanding matters identified in Appendix B and identifying accountability and responsibility, to assure appropriate sequencing and delivery.
3) By June 2015 Network Rail should document appropriate interim milestones and associated success criteria for each of the high-level activities defined in the CP5 Roadmap, to enable more rigorous monitoring of progress during CP5.
4) By December 2015 Network Rail should demonstrate that approved funding and resource plans are in place for all corporate initiatives contributing to the achievement of Asset Management Excellence during CP5 on a 2-year rolling basis as a minimum.

Appendix A Key Findings by GFMAM Subject

A.1 Asset Management Policy

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Strategy & Planning	**Asset Management Policy**	The principles and mandated requirements derived from and consistent with the organizational/corporate plan, providing a framework for the development and implementation of the asset management strategic plan and the setting of the asset management objectives.		
Network Rail Capability Statement	An Asset Management Policy is in place that incorporates the learning from the IIP development process and emerging good practice.			

Network Rail Improvement Specification	The Asset Management Policy is enhanced to include:
	• The additional statements of principle to cover the following:
	  ○ The capability to consider different scenarios to enable the whole-life costs and risks of different funding and output scenarios to be articulated
	  ○ Assessing the trade-off between efficiency of work delivery through longer possessions and access of the network to customers to deliver the timetable
	  ○ Work delivery activities will always be undertaken in accordance with the Asset policies including appropriate feedback where it is found that these Asset Policies are not practical or optimal
	• Explicit reference to other corporate policies and strategies
	• Clearly defined consistent terminology for all aspects of the Asset Management System. In addition criteria should be defined against which the Asset Management Policy will be evaluated to assure effectiveness and compatibility with business objectives.			

Network Rail Planned Activities *	• Asset Management (AM) Policy in place • AM Policy available and communicated to the business • AMEM Lite Assessments completed to provide auditable evidence of the AM Policy being embedded into the Routes • Process to review and update the AM Policy developed, documented, communicated and embedded (Jun 2016)	**Network Rail January 2018 Success Criteria**	• Issued version of the AM Policy available at IIP and SBP • Evidence that the AM Policy is available to the business and communication events completed • Key leaders are aware of and use the AM Policy • Evidence that the process to review and update the AM Policy is known within the business and evidence that the AM Policy has been reviewed and updated in accordance with the documented process.	
Baseline Score (based on timely achievement of all documented improvements)				**78%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Documentation & communication of Asset Management System missing from Roadmap. Clarity of senior Route involvement and buy-in to the Asset Management System and Policy.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment *	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**68%**

Table 6 Asset Management Policy

A.2 Asset Management Strategy & Objectives

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Strategy & Planning	**Asset Management Strategy and Objectives** *	The strategic plan for the management of the assets of an organization that will be used to achieve the organizational/corporate objectives.		
Network Rail Capability Statement	An Asset Management Strategy is in place that incorporates the learning from the IIP development process and emerging good practice.			
Network Rail Improvement Specification	The Asset Management Strategy is enhanced to include: • A better explanation of how the Asset Management Strategy has taken account of the principles in the Asset Management Policy and the linkage between these principles and the objectives in the Asset Management Strategy • A clear definition of the Asset Groups that described how the infrastructure is divided up for the purposes of Asset Policy and Route AMP development • The inclusion of measureable Asset Management objectives in the Asset Management Strategy and better referencing to show how these objectives link to the asset discipline specific objectives in the Asset Policies • Reference to and alignment with the strategic Asset Management framework and process • An explanation of how the Asset Management Strategy is intended to work in terms of responsibilities in the Centre and the Routes • An overview of the updated work streams for the AMIP that will deliver the end of CP5 AMCL Roadmap trajectory for the 39 AMEM activities			
Network Rail Planned Activities	• Asset Management (AM) Strategy issued • AM Strategy embedded and communicated to the business • AMEM Lite Assessments completed to provide auditable evidence of the AM Strategy being embedded into the Routes • The process to review and update the AM Strategy is to be developed, documented, communicated and embedded (Jul 2016)	**Network Rail January 2018 Success Criteria**	• Issued version of the AM Strategy available for IIP & SBP • Evidence that the AM Strategy is available to the business and communication events completed • Key Leaders are aware of and use the AM Strategy • Evidence that the process to review and update the AM Strategy is known within the business and evidence that the AM Strategy has been reviewed and updated in accordance with the documented process.	
Baseline Score (based on timely achievement of all documented improvements)				**69%**
AMCL Roadmap Factors	None			
Other Scope Opportunities	Primarily the requirement for SMART Asset Management Objectives, plus criticality and top management buy-in. Clarity of senior Route involvement and buy-in to the Asset Management Strategy and Objectives. Structured plans to develop Route level Asset Management Strategies and Objectives in line with corporate approach.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**60%**

Table 7 Asset Management Strategy and Objectives

A.3 Demand Analysis *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Strategy & Planning	**Demand Analysis**	The processes an organization uses to both assess and influence the demand for, and level of service from, an organization's assets.		
Network Rail Capability Statement	Demand analysis is used to predict the range of expected capacity requirements for each route for 30 years and RUSs updated accordingly.			
Network Rail Improvement Specification	The long-term planning process is clearly defined, with a good understanding of historical demand and the drivers of demand are documented with the relevant information stored and accessible. The Network RUS is used to clearly inform the Scenario Planning process. Bespoke demand forecasting tools are developed from the requirements identified during the Scenario Planning process. The RUS for each Route reflects the long-term demand and the requirements for infrastructure enhancement to deliver this demand.			
Network Rail Planned Activities	• The LTPPs are updated to reflect any changes in demand or policy since the SBP • Research, consult, develop and publish future forecasts and service levels	**Network Rail January 2018 Success Criteria**	• LTPPs in place and process to update embedded as BAU activity • Research, consulting, development and publishing of future forecasts and service levels embedded as BAU process	
Baseline Score (based on timely achievement of all documented improvements)				**79%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Primarily translation of demand analysis into asset specification (e.g. RAMS).			
Deliverability Risk Scores				
Available Level of Plan Detail	Detailed programme and resource plans but not yet implemented			2%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Significant dependencies on external parties			2%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**71%**

Table 8 Demand Analysis

A.4 Strategic Planning *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Strategy & Planning	**Strategic Planning**	The processes an organization uses to undertake strategic and asset management planning.		
Network Rail Capability Statement	Network Rail's strategic Asset Management planning framework and process is implemented.			
Network Rail Improvement Specification	The strategic Asset Management planning framework and process considers: • Clear alignment with the Systems, Process and Monitoring document showing 'line of sight' from SBP to Asset Policies, Route AMPs and Delivery Plans • How the difference processes, asset information, models and plans are linked • The appropriate method to develop work volumes, cost schedules and output measures for different types of asset, where necessary, taking into account asset criticality • How demand analysis and required outputs are considered and modelled in the development of the strategic Asset Management Plan • How work volumes and costs are developed for different funding scenarios to reflect potential changes in demand, output requirements and available funding. • How confidence levels in asset information, and asset policies and unit costs will be considered and how this will the impact on the confidence levels in work volumes and costs • The extent to which each component of the framework will be developed and integrated by the time the SBP is published. • Investigate methods to match the criteria used for product acceptance to the associated risk. • Examine product acceptance standards to ascertain if revision is required in the light of today's railway.			
Network Rail Planned Activities	• The strategic Asset Management planning framework and process has been updated to reflect lessons learned from the CP4 exercise (Mar 2015) • The scope of the Product Acceptance (PA) Transformation Programme is to increase the range of suppliers who are able to submit their products for acceptance. • Review of CSM processes to reduce the amount of scrutiny required for commonly used products resulting in better use of engineering resource.	**Network Rail January 2018 Success Criteria**	• Lessons learned incorporated in the strategic Asset Management Planning Framework • Processes resulting from the product acceptance transformation programme embedded in business and subject to continuous improvement review using Common Safety Method (CSM) revisions etc. • CSM reviewed and subject to continuous review making it suitable for use with processes of the PA Transformation Programme	
Baseline Score (based on timely achievement of all documented improvements)				**73%**
AMCL Roadmap Factors	1.8			
Other Scope Opportunities	Primarily output requirements and their justification, plus criticality. Clear documentation of process as part of overall Asset Management System, including top-down and bottom-up interaction with Routes.			
Deliverability Risk Scores				
Available Level of Plan Detail	No plans or high-level milestones only			6%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Largely within Network Rail's control			1%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**62%**

Table 9 Strategic Planning

A.5 Asset Management Planning

<table>
<tr><th>GFMAM Group</th><th>GFMAM Subject</th><th colspan="3">GFMAM Definition
(The Asset Management Landscape Second Edition (www.gfmam.org))</th></tr>
<tr><td>Strategy & Planning</td><td>Asset Management Planning</td><td colspan="3">The activities to develop the Asset Management plans that specify the detailed activities and resources, responsibilities and timescales and risks for the achievement of the asset management objectives.</td></tr>
<tr><td>Network Rail Capability Statement</td><td colspan="5">A Network-wide Strategic Asset Management Plan is in place that defines the long-term Asset Management activities and expected outputs across Network Rail’s infrastructure.</td></tr>
<tr><td>Network Rail Improvement Specification</td><td colspan="5">The network-wide Strategic Asset Management Plan includes:
• Work volumes and costs for each key activity and each key asset type for each funding scenario;
• A preferred scenario that delivers the required CP5 outputs for the lowest sustainable whole life costs;
• Confidence levels in both work volumes and costs over the next 25 years reflecting the levels of confidence in the Asset Information, Asset Policies and Units Costs
• An appropriate level of detail and level of confidence to reflect the criticality of the different activities and asset types;
• A summary of the asset portfolio and its service condition and age profile, including historical changes over the last 10 years and the predicted changes to this condition and age profile over the next 25 years;
• The expected outputs and performance that will be delivered by the work defined within each scenario over the next 25 years;
• The metrics and performance inductors that will be used to monitor these outputs and performance measures;
• The expected efficiencies that will be delivered over CP5 clearly differentiating between work scope efficiencies from unit costs efficiencies;
• Different scenarios to reflect different assumptions relating to demand, output requirements and available funding.</td></tr>
<tr><td>Network Rail Planned Activities</td><td colspan="2">• The initial industry plan work bank has been verified / reconciled as top down and bottom up plans (Sept 2016)
• Expected outputs for each year of CP6 and alignment with HLOS and Route Specifications
• Long term resource plans developed (Jan 2018)
• Development of integrated route asset management, resourcing & access plans (Mar 2019)</td><td>Network Rail January 2018 Success Criteria</td><td colspan="2">• The network-wide CP6 Delivery Plan includes: work volumes and costs for all enhancement, renewal and maintenance activities
• Regular assurance process demonstrates no adverse trends
• Long term resource plans, trajectories and implications in place
• Integrated route asset management, resourcing & access plans in place for CP6</td></tr>
<tr><td colspan="5">Baseline Score (based on timely achievement of all documented improvements)</td><td>86%</td></tr>
<tr><td>AMCL Roadmap Factors</td><td colspan="5">None.</td></tr>
<tr><td>Other Scope Opportunities</td><td colspan="5">Primarily output requirements and their justification. Route level analysis of predicted condition, performance and other outputs per annum and how these align to the requirements of the demand analysis/asset specification. Documentation of continuous monitoring and review processes.</td></tr>
<tr><td colspan="6">Deliverability Risk Scores</td></tr>
<tr><td colspan="2">Available Level of Plan Detail</td><td colspan="3">Outline Plans only</td><td>4%</td></tr>
<tr><td colspan="2">Delta from CP4 Exit Score</td><td colspan="3">Delta >=15</td><td>3%</td></tr>
<tr><td colspan="2">Current Level of Embedment</td><td colspan="3">Clear understanding of subject in Routes</td><td>0%</td></tr>
<tr><td colspan="2">Track Record</td><td colspan="3">Demonstrable phases of improvement</td><td>1%</td></tr>
<tr><td colspan="2">Wider Industry Interfaces</td><td colspan="3">Wholly within Network Rail's control</td><td>0%</td></tr>
<tr><td colspan="5">Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)</td><td>78%</td></tr>
</table>

Table 10 Asset Management Planning

A.6 Capital Investment Decision-Making *

<table>
<tr><th>GFMAM Group</th><th>GFMAM Subject</th><th colspan="3">GFMAM Definition
(The Asset Management Landscape Second Edition (www.gfmam.org))</th></tr>
<tr><td>Asset Management Decision-Making</td><td>Capital Investment Decision-Making</td><td colspan="3">The processes and decisions to evaluate and analyse scenarios for decisions related to capital investments of an organization. The processes and decisions may relate to new assets for the organization. (e.g. Greenfield projects) and/or replacements of assets end of life (CAPEX sustaining programs).</td></tr>
<tr><td>Network Rail Capability Statement</td><td colspan="4">Asset Policies for renewal and enhancement interventions contain renewal criteria and preferred choice of asset type (where appropriate) for different risk categories that represent the lowest asset system and whole-life cost and risk.</td></tr>
<tr><td>Network Rail Improvement Specification</td><td colspan="4">Asset Policies for renewal and enhancement are developed in a consistent manner across the asset groups in accordance with the 10-step Asset Policy development process and include the following:
• Consideration of all agreed funding and technical scenarios to reflect different assumptions relating to demand, output requirements and available funding;
• Different policy options for delivering the scenarios showing the assumptions and constraints applied within the different scenarios;
• Deterioration and whole-life cost analysis to justify the choice of asset type and renewal criteria to a level appropriate to the criticality of each asset type based on the DSTs (see 2.13)
• Consideration of the whole asset system costs and the interdependencies between asset types;
• An assessment of the impact of unit cost efficiencies on the preferred policy;
• The level of confidence for each of the scenarios based on sensitivity analysis and uncertainties in asset information;
• The specification of asset information requirements that are needed to support Asset Policy development and the justification for this information
• Evidence that shows the extent to which the interventions contained within the Asset Policies are sustainable;
• Consideration of the cost implications and other impacts on policy options for the wider industry;
• Analysis to show the impact on safety, performance, environmental, social and reputational risks;
• The expected asset condition, age profile and other outputs and the proposed metrics to monitor and evaluate the Asset Policy</td></tr>
<tr><td>Network Rail Planned Activities</td><td colspan="2">• Asset Policy issued
• Process to manage updates to the Policy is developed
• Communication events to be undertaken to ensure the two activities above are embedded into the business
• CAPEX aligned with OPEX based upon criticality analysis
• Improvement process in place following all model completions (Mar 2015)</td><td>Network Rail January 2018 Success Criteria</td><td>• Latest version of the Asset Policy widely available.
• Evidence that the change process is known within the business and any changes to the Policy have followed the process
• Evidence that the Asset Policies are widely available, updated as BAU and communication events have taken place. Use is verified as part of ongoing assurance
• All models in house with enhancement seen as BAU
• Continuously improved models to facilitate emerging scenarios</td></tr>
<tr><td colspan="4">Baseline Score (based on timely achievement of all documented improvements)</td><td>88%</td></tr>
<tr><td>AMCL Roadmap Factors</td><td colspan="4">None.</td></tr>
<tr><td>Other Scope Opportunities</td><td colspan="4">Clarity around understanding investment / business case against output requirements and their confidence levels.</td></tr>
<tr><td colspan="5">Deliverability Risk Scores</td></tr>
<tr><td colspan="2">Available Level of Plan Detail</td><td colspan="2">Detailed programme and resource plans but not yet implemented</td><td>2%</td></tr>
<tr><td colspan="2">Delta from CP4 Exit Score</td><td colspan="2">Delta >5<15</td><td>2%</td></tr>
<tr><td colspan="2">Current Level of Embedment</td><td colspan="2">Substantial understanding of subject and development plans at Route level</td><td>1%</td></tr>
</table>

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)	
Track Record		Demonstrable history of systematic and sustainable improvement	0%
Wider Industry Interfaces		Wholly within Network Rail's control	0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)			**83%**

Table 11 Capital Investment Decision-Making

A.7 Operations & Maintenance Decision-Making *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Asset Management Decision-Making	**Operations and Maintenance Decision-Making**	The management activities and processes involved in determining the Operations and Maintenance requirements in support of the Asset Management objectives and goals.		
Network Rail Capability Statement	To be able to make informed decisions on maintenance regimes by understanding the reasons for asset failure and to allow remote monitoring of critical assets.			
Network Rail Improvement Specification	The foundation of the future maintenance decision making approach will be based upon Moubray's Reliability Centred Maintenance methodology. The approach is based on a comprehensive understanding of the reasons for asset failures, with maintenance regimes designed accordingly. • Identification of failure modes for which the maintenance is worth doing in the case of critical assets, where the cost of failure is high but not for those less important assets • Understanding the consequences of failure dependent of the location of assets on the network • Develop Maintenance Requirements Analysis procedures to define a minimum frequency per task • Condition Monitoring systems will be designed to monitor deterioration indicators as identified by RCM analysis • Reduce interventions made in response to asset failures			
Network Rail Planned Activities	• Central development of criticality assessment processes and regimes and subsequent embedment • Develop maintenance by criticality process and regimes by RBM with subsequent embedment by the routes • Develop maintenance by condition process and regimes by RBM with subsequent embedment by the routes • Develop & launch Risk Based Maintenance management process for regime selection • Development of tools for automated inspection of assets from specialist and service trains • Remote Condition Monitoring – Identify all key assets that allow RCM with subsequent process embedment • Feedback information from FMEA process into new asset design	**Network Rail January 2018 Success Criteria**	• In use within company with continuous improvement process embedded applied through one cycle (all activities)	
Baseline Score (based on timely achievement of all documented improvements)				**62%**
AMCL Roadmap Factors	2.2, 2.3, 2.5, 2.6, 2.7			
Other Scope Opportunities	Alignment of Maintenance strategy and true cost-risk optimised approach. Clarification of organisational cost-risk balance/appetite.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**53%**

Table 12 Operations & Maintenance Decision-Making

A.8 Lifecycle Value Realisation

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Asset Management Decision-Making	**Lifecycle Value Realisation**	The activities undertaken by an organization to balance the costs and benefits of different renewal, maintenance, overhaul and disposal interventions.		
Network Rail Capability Statement	The ability to optimise the costs and benefits of different renewal, maintenance, overhaul and disposal interventions, analysis, trade off and iterations to align / optimise maintenance and renewal strategy. Includes tools and analysis.			
Network Rail Improvement Specification	Lifecycle Cost & Value Optimisation will be improved by • The further development of Tier 1 and 2 models previously used for the submission of the SBP • The bringing in house of these models where possible such they can be used by Network Rail without the need to rely on third parties • The development of a Tier 3 model • The embedment of all models within the business • Improvement in the understanding of why assets fail by adoption of Failure Mode and Effects Analysis (FMEA) with the resulting information being fed back into revisions to models • Where possible, adoption of a risk based approach to maintenance across the business			
Network Rail Planned Activities *	• Whole Life Cost Modelling – Tier 1 model available (Mar 2015) • Whole Life Cost Modelling – Tier 1 model embedment (Mar 2016) • Whole Life Cost Modelling – Tier 2 model availability (Mar 2015) • Whole Life Cost Modelling – Tier 2 model embedment (Mar 2016) • Whole Life Cost Modelling – Tier 3 model availability(Mar 2015) • Whole Life Cost Modelling – Tier 3 model embedment (Mar 2016) • Maintenance FMEA (Mar 2015) • RCM analysis	**Network Rail January 2018 Success Criteria**	• Evidence model availability and content • Evidence model usage throughout the business • Evidence model availability and content • Evidence model usage throughout the business • Evidence model availability and content • Evidence model usage throughout the business • BAU usage of FMEA with no degradation of safety • BAU usage of RCM with no degradation of safety	
Baseline Score (based on timely achievement of all documented improvements)				**71%**
AMCL Roadmap Factors	3.11			
Other Scope Opportunities	Clarity around ageing assets and expansion of rationalisation approach. System level analysis and modelling.			
Deliverability Risk Scores				
Available Level of Plan Detail	Detailed programme and resource plans but not yet implemented			2%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Largely within Network Rail's control			1%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**64%**

Table 13 Lifecycle Value Realisation

A.9 Resourcing Strategy

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Asset Management Decision-Making	**Resourcing Strategy**	Determining the activities and processes to be undertaken by an organization in order to procure and use people, plant, tools and materials to deliver the Asset Management Objectives and Asset Management Plan(s).		
Network Rail Capability Statement	To be able to forecast the type and quantity of resource that will be required over a 10 year time frame.			
Network Rail Improvement Specification	An analysis of the various numerous ways of providing resource to deliver the companies objectives. This will include: • The creation a consolidated plan spanning 10 years in which all key resources, both manpower and equipment, are identified by route / regions / function with a view to identifying any shortfalls. This will take into account costs and risks associated with resources procured from outside of the company taking into account both quality and any internal storage or management costs • A review of the structure, organisation and location of the delivery units to ensure optimal delivery and sharing of new ideas and practices			
Network Rail Planned Activities	• Depot Project – bringing maintenance activities together at DU level, sharing information across the enterprise, reducing duplication etc., delivering visualisation (Apr 2015) • National Supply Chain works • Creation of a 10 year plan in which all key resource requirements are captured and consolidated at a number of levels (route / region / function etc) • Productivity Programme delivering Mobile Works Management, task standardisation and other initiatives (Jan 2018)	**Network Rail January 2018 Success Criteria**	• Rolled out and embedded and subject to continuous improvement across all delivery units. • A defined 10 years plan is available and in use in BAU decision making. Activity is subject to continual improvement • Programme implemented to schedule	
Baseline Score (based on timely achievement of all documented improvements)				**76%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Refinement of continuous monitoring and improvement of forecasting accuracy against actual at national level.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Largely within Network Rail's control			1%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**67%**

Table 14 Resourcing Strategy

A.10 Shutdowns & Outage Optimisation

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Asset Management Decision-Making	**Shutdowns & Outage Optimisation**	The activities taken by an organization to develop a strategy for shutdown and outages.		
Network Rail Capability Statement	To be able to more efficiently utilise possessions by including multiple work types and also to optimise the length of possessions.			
Network Rail Improvement Specification	Shutdown and Outage Strategy covers a number of initiatives designed to optimise the time available to access assets. These include: • The optimisation of possession usage by enhanced communication and partnership with both internal and external (TOCs/FOCs/Local Authorities) • Analysis of the trade off between fewer long but very disruptive possessions against shorter less disruptive possessions • An understanding of the risks and consequences of possessions to which all parties have contributed and discussed • A final scope of the possession including schedules, material and manpower requirements which has been through scope challenge exercises to ensure robustness			
Network Rail Planned Activities	• Integrated Access Planning – delivering a new way of planning access by providing an enabling methodology and a suite of tools that can unlock industry benefits and efficiencies • Possession planning for optimal capacity allocation for operators and reduction in costly timetable changes • Possession Utilisation Programme • Deployment of Mobile work Management tools	**Network Rail January 2018 Success Criteria**	• Plans aligned with stakeholder requirements • Plans reflect better utilisation of resources • Plans reflect better utilisation of resources • Tools embedded and in use for all assets	
Baseline Score (based on timely achievement of all documented improvements)				**88%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Refinement of continuous monitoring and improvement of forecasting accuracy against actual at national level.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Significant dependencies on external parties			2%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**77%**

Table 15 Shutdowns & Outage Optimisation

A.11 Technical Standards & Legislation

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Lifecycle Delivery	**Technical Standards & Legislation**	The processes used by an organization to ensure its asset management activities are compliant with the relevant technical standards and legislation.		
Network Rail Capability Statement	To ensure all technical standards and legislative rules are valid and complied with without leading to any degradation in safety.			
Network Rail Improvement Specification	Technical Standards and Legislation include processes for the identification, applicability updating and compliance assurance of standards and legislation in the Asset Management context. This will involve: • The adoption of the results of the Business Critical Rules programme which examines the causes and consequences of events and in doing so, tests the validity of standards • Adoption of better integrated information systems.			
Network Rail Planned Activities	• Completion of transition to the findings of the Business Critical Rules programme for infrastructure activity • Implementation of integrated management systems which are accredited to the relevant ISO	**Network Rail January 2018 Success Criteria**	• New processes and rules embedded with no perceived degradation in safety • New processes and rules embedded with no perceived degradation in safety	
Baseline Score (based on timely achievement of all documented improvements)				**82%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	All key opportunities included in Roadmap. Further improvement in maturity scores would be reliant on multiple small factors and demonstrable output performance and continuous improvement over a number of years.			
Deliverability Risk Scores				
Available Level of Plan Detail	No plans or high-level milestones only			6%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**70%**

Table 16 Technical Standards & Legislation

A.12 Asset Creation & Acquisition

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Lifecycle Delivery	**Asset Creation & Acquisition**	An organization's processes for the acquisition, installation and commissioning of assets.		
Network Rail Capability Statement	To be able to select optimal solutions for creation of assets based on Whole Life Cost and to be able to optimise the delivery of that asset.			
Network Rail Improvement Specification	Asset Creation & Acquisition will be improved by: • Adoption of Whole Life Costing Models to allow better option selection • Use of P3M3 to assess its asset creation strengths and weaknesses and to then define clear improvement plans.			
Network Rail Planned Activities	• WLCC toolset deployed across agreed E and (R projects (Mar 2015) (• Implement improvement projects resulting (from P3M3 assessment/s (• Continue to develop and mobilise IP IT BIM. (Monitor & measure uptake / success rate (• Implementation of an enhanced toolset consolidating all renewal and enhancement activities together with common reporting and review methodology into an integrated i.e. mutually compatible, set of systems • Implement second line assurance within IP • Introduce Programme Management Lifecycle	**Network Rail January 2018 Success Criteria**	• Evidence that the WLCC toolset is being used as BAU	
Baseline Score (based on timely achievement of all documented improvements)				**81%**
AMCL Roadmap Factors	3.2			
Other Scope Opportunities	Programme management and alignment to ISO 15288, plus handback. Monitoring of planned against actual benefits.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >0<5			1%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Largely within Network Rail's control			1%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**73%**

Table 17 Asset Creation & Acquisition

A.13 Systems Engineering

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Lifecycle Delivery	**Systems Engineering**	An interdisciplinary, collaborative approach to derive, evolve and verify a life cycle balanced system solution which satisfies customer expectations and meets public acceptability.		
Network Rail Capability Statement	To be able to take an interdisciplinary, collaborative approach to derive, evolve and verify a life-cycle balanced system solution which satisfies customer expectations and meets public acceptability. This will require the introduction of new metrics and monitoring within the business.			
Network Rail Improvement Specification	Improvements will be required in the mechanism for understanding the requirements from the routes, and the way those requirements are translated into deliverables by means of a interdisciplinary approach.			
Network Rail Planned Activities	• Requirements Management process developed and embedded in business (Mar 2017) • Clienting and Sponsorship process developed, consulted, agreed, communicated and deployed (Mar 2016) • Development of a verification strategy (Mar 2016) • Introduction of an integrated Engineering Lifecycle (iELC) (Mar 2016)	**Network Rail January 2018 Success Criteria**	• Systematic use of requirements management process • Process embedded and identified as BAU • Process embedded and identified as BAU • Process embedded and identified as BAU	
Baseline Score (based on timely achievement of all documented improvements)				**76%**
AMCL Roadmap Factors	3.4, 3.5			
Other Scope Opportunities	Alignment to ISO 15288, formal requirements plus handback. Structured SEMP, requirements capture and V&V processes document hierarchy, proportional to the criticality of the activity.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >0<5			1%
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**67%**

Table 18 Systems Engineering

A.14 Configuration Management

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Lifecycle Delivery	**Configuration Management**	A management process for establishing and maintaining consistency of a product's physical and functional attributes with its design and operational information throughout its life.		
Network Rail Capability Statement	A process is required for establishing and maintaining consistency of a product's physical and functional attributes with its design and operational information throughout its life.			
Network Rail Improvement Specification	To introduce a planned set of configuration management plans and controls.			
Network Rail Planned Activities	• Introduction of control forums such as NRAP	**Network Rail January 2018 Success Criteria**	• Agreed plan implemented and demonstrating benefits	
Baseline Score (based on timely achievement of all documented improvements)				**65%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Systematic configuration management approach, policies and processes on a whole system, whole life basis.			
Deliverability Risk Scores				
Available Level of Plan Detail	No plans or high-level milestones only			6%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**53%**

Table 19 Configuration Management

A.15 Maintenance Delivery

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Lifecycle Delivery	**Maintenance Delivery**	The management of maintenance activities including both preventative and corrective maintenance management methodologies.		
Network Rail Capability Statement	To ensure a maintenance capability is in place which is capable of flexible working and which has all necessary information available to be able carry out its tasks.			
Network Rail Improvement Specification	Improvements will be made to Maintenance Delivery by means of the introduction of new tools for works management, for rostering and the alignment of the outputs of a number of programmes with the compliance requirements.			

Network Rail Planned Activities	• The Depot Project covering
	  ○ Rostering
	  ○ Planning
	  ○ Visualisation
	All areas to be regarded as BAU Mar 2015
	• The productivity programme
	  ○ Mobile Works Management
	  ○ Task standardisation
	  ○ Other productivity initiatives subject to agreement with trade unions
	  ○ Corporate roster tool
	• Alignment of Risk Based (Maintenance (RBM), Business (Critical Rules and compliance (requirements (
			Network Rail January 2018 Success Criteria	• KPI's associated with rostering planning show positive trend and visualisation regarded as BAU by March 2015
				• Productivity KPI's show positive trend with no perceived increase in risk by March 2015
				• Substantially implemented by January 2018 with RBM on schedule to be completed March 2019

Baseline Score (based on timely achievement of all documented improvements)				**80%**
AMCL Roadmap Factors	3.7			
Other Scope Opportunities	Completion of BCR and RBM programmes leading to clarity around defect categorisation and missed maintenance requirements.			
Deliverability Risk Scores				
Available Level of Plan Detail		Outline Plans only		4%
Delta from CP4 Exit Score		Delta >0<5		1%
Current Level of Embedment		Clear understanding of subject in Routes		0%
Track Record		Demonstrable history of systematic and sustainable improvement		0%
Wider Industry Interfaces *		Largely within Network Rail's control		1%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**74%**

Table 20 Maintenance Delivery

A.16 Reliability Engineering

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Lifecycle Delivery	**Reliability Engineering**	The process for ensuring that an item shall operate to a defined standard for a defined period of time in a defined environment.		
Network Rail Capability Statement	To be able to fully understand the causes of failure and to engineer increased reliability into the process.			
Network Rail Improvement Specification	To adopt formal reliability management techniques which have previously not been commonly used in railway infrastructure provision. The non-usage of these techniques has contributed to some asset both old and new being not sufficiently reliable to meet the needs of today's railway In order to achieve this, practitioners will need to be trained in techniques such as Kepner Tregoe Situation Appraisal and Problem analysis			
Network Rail Planned Activities	• Develop process to train/match practitioner requirements with perceived requirements with regular assessment for continuous requirement needs • Close liaison with routes to identify asset types giving greatest concern with periodic reporting (Aug 2014) • Analysis of data to ensure national issues affecting overall corporate position are identified (Aug 2014) • Implementation of the Network Operations Business Plan	**Network Rail January 2018 Success Criteria**	• BAU process in place • Process embedded within company to identify and monitor asset types of concern • Process embedded within company to ensure national issues are identified • Network operations Business Plan embedded within the business and subject to regular review	
Baseline Score (based on timely achievement of all documented improvements)				**71%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Consistency of performance plan and root-cause processes and their implementation within devolved organisation. Alignment of effort with Route level RAMS specifications.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**62%**

Table 21 Reliability Engineering

A.17 Asset Operations *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Lifecycle Delivery	**Asset Operations**	The processes used by an organization to operate its assets to achieve the business objectives.		
Network Rail Capability Statement	To have available a detailed business plan covering all aspects of Asset operations			
Network Rail Improvement Specification	A business plan to be created to cover all aspects of Asset Operations			
Network Rail Planned Activities	• Network Operations plan to be aligned with aligned with maintenance and renewals strategies, implemented and is subject to continuous improvement being adhered to		**Network Rail January 2018 Success Criteria**	• Evidence that Asset Operations, Strategy and Process integrated with maintenance and renewal strategies and continuously improved
Baseline Score (based on timely achievement of all documented improvements)				**82%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	All key opportunities included in Roadmap. Further improvement in maturity scores would be reliant on multiple small factors and demonstrable output performance and continuous improvement over a number of years.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Clear understanding of subject in Routes			0%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Significant dependencies on external parties			2%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**73%**

Table 22 Asset Operations

A.18 Resource Management

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Lifecycle Delivery	**Resource Management**	Implementing the Resourcing Strategy to manage the use of funds, people, plant, tools and materials in delivering asset management activities.		
Network Rail Capability Statement	The ability to forecast the resource requirements of the whole business is within the business.			
Network Rail Improvement Specification	The ability to be able to create long term resource forecasts is required along with the ability to introduce more resource flexibility and better share information.			
Network Rail Planned Activities	• Introduction of the ability to forecast the long term resource requirements (across the whole business (initial (implementation in early CP5 with (further development until Mar 2015) • Continuous improvements to the process of resource requirement forecasting • Confirm the plan for CP6 resource (management (Mar 2016) (	**Network Rail January 2018 Success Criteria**	• Process embedded as BAU • Improvements as BAU • Plan implemented by January 2018	
Baseline Score (based on timely achievement of all documented improvements)				**73%**
AMCL Roadmap Factors	3.9			
Other Scope Opportunities	Roadmap has focused on forecasting but this Subject is about tactical prioritisation and allocation of all resources. Continuous monitoring and improvement of forecasting accuracy against actual at Route/DU level.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Clear understanding of subject in Routes			0%
Track Record *	Demonstrable history of systematic and sustainable improvement			0%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**67%**

Table 23 Resource Management

A.19 Shutdown & Outage Management

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Lifecycle Delivery	**Shutdown & Outage Management**	An organization's processes for identification, planning, scheduling, execution and control of work related to shutdowns and outages.		
Network Rail Capability Statement	To better coordinate possession usage between all aspects of the industry and in doing, reduce the number of possessions required.			
Network Rail Improvement Specification	To better coordinate possession usage between all aspects of the industry and in doing, reduce the number of possessions required and reduce Schedule 4 payments to TOC's & FOC's.			
Network Rail Planned Activities	• Link planning protocols to integrated activity plan, progressively including partner information (i.e TOC work) (Mar 2016)	**Network Rail January 2018 Success Criteria**	• Clear evidence of coordinated planning in the use of possessions with a reduction in Schedule 4 payments	
Baseline Score (based on timely achievement of all documented improvements)				**81%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Continuous monitoring and improvement of forecasting accuracy against actual at Route/DU level.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment	Clear understanding of subject in Routes			0%
Track Record	Demonstrable history of systematic and sustainable improvement			0%
Wider Industry Interfaces	Significant dependencies on external parties			2%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**72%**

Table 24 Shutdown & Outage Management

A.20 Fault & Incident Response

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Lifecycle Delivery	**Fault & Incident Response**	Responding to failures and incidents in a systematic manner, including incident detection and identification, fault analysis, use of standard responses, temporary and permeant repairs as well as the taking over and handing back of sites.		
Network Rail Capability Statement	Responding better to incidents and capturing all relevant information. To then use that information to better management assets according to their associated risks			
Network Rail Improvement Specification	A better understanding of the reasons for asset failure is required. Also better processes/systems are required to better record the information gathered at an incident			
Network Rail Planned Activities	• Handheld fault & incident data capture app completed (Aug 2014) • Complete FMEA and embed in FMS & RBM processes (Mar 2016)	**Network Rail January 2018 Success Criteria**	• Roll out complete and in use across all routes/assets • FMEA embedded in all routes/assets	
Baseline Score (based on timely achievement of all documented improvements)				**80%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	All key opportunities included in Roadmap. Further improvement in maturity scores would be reliant on multiple small factors and demonstrable output performance and continuous improvement over a number of years.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Largely within Network Rail's control			1%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**71%**

Table 25 Fault & Incident Response

A.21 Asset Decommissioning & Disposal *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)	
Lifecycle Delivery	**Asset Decommissioning & Disposal**	The processes used by an organization to decommission and dispose of assets due to ageing or changes in performance and capacity requirements.	
Network Rail Capability Statement	The ability is required to identify assets which can be decommissioned and disposed of across the business.		
Network Rail Improvement Specification	To pull together the findings of a number of initiatives across the business with a view to identifying which assets can be disposed of without impacting long term capacity and performance targets.		
Network Rail Planned Activities	• Development of a Risk Based Model to identify low usage/risk S&C that may be taken out of service (Mar 2015) • Extension of usage/risk based S&C model to inform the selection of S&C maintenance regimes (Mar 2015) • Incorporate learning from S&C rationalisation and route CP5 planning to develop enhanced processes (Mar 2015)	**Network Rail January 2018 Success Criteria**	• Annual management reviews and learning complied and incorporated into approach • Annual management reviews and learning complied and incorporated into approach • Annual management reviews and learning complied and incorporated into approach
Baseline Score (based on timely achievement of all documented improvements)			**88%**
AMCL Roadmap Factors	3.11		
Other Scope Opportunities	All key opportunities included in Roadmap - although optimisation is dealt with more in Subject 8. Opportunities to rationalise assets, considering optimised trade-offs with operational flexibility, performance risk and whole-life cost of ownership, are included in Route level Delivery Plans.		
Deliverability Risk Scores			
Available Level of Plan Detail	Detailed programme and resource plans but not yet implemented		2%
Delta from CP4 Exit Score	Delta >=15		3%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level		1%
Track Record	Some improvements but not systematic		2%
Wider Industry Interfaces	Largely within Network Rail's control		1%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)			**79%**

Table 26 Asset Decommissioning & Disposal

A.22 Asset Information Strategy

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Asset Information	**Asset Information Strategy**	The strategic approach to the definition, collection, management, reporting and overall governance of asset information necessary to support the implementation on an organization's asset management strategy and objectives.		
Network Rail Capability Statement	An Asset Information Strategy is required to support the delivery of the Asset Management Strategy.			
Network Rail Improvement Specification	To create an Asset Information Strategy to supports the delivery of the Asset Management Strategy and objectives. This will involve the identification of systems and governance processes which will be necessary to deliver the required information and also the introduction of a regular review process to incorporate changes in Asset Strategy which may be brought about by technical, regulatory or environmental changes.			
Network Rail Planned Activities	• Produce Asset Information (AI) Policy • Produce, review/update AI Strategy • Update mapping of systems to business need & use to formulate future plans • Costed business cases for AI systems beyond CP5	**Network Rail January 2018 Success Criteria**	• Asset Policy to demonstrate alignment to asset management strategy and excellence at IIP & SBP 2018 • Strategy reviewed on a regular basis in response to changes in Asset Policy, current at SBP 2018 • System mapping to business needs complete and subject to regular review • Costed business cases in place and subject to regular review	
Baseline Score (based on timely achievement of all documented improvements)				**89%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	All key opportunities included in Roadmap. Further improvement in maturity scores would be reliant on multiple small factors and demonstrable output performance and continuous improvement over a number of years.			
Deliverability Risk Scores				
Available Level of Plan Detail	Work substantially complete			0%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Demonstrable history of systematic and sustainable improvement			0%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**85%**

Table 27 Asset Information Strategy

A.23 Asset Information Standards *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Asset Information	**Asset Information Standards**	The specification of a consistent structure and format for collecting and storing asset information and for reporting on the quality and accuracy of asset information.		
Network Rail Capability Statement	A process is required to define the data quality standards that are required within the business			
Network Rail Improvement Specification	To pull together Asset Information from a number of sources and to validate it against the defined standards for each asset. The result of this will be a complete knowledge of all of the business assets which include a condition rating and where the condition is below that required, a clear plan to improve the data quality of these assets.			
Network Rail Planned Activities	• Signalling data specification available (Jan 2015) • E&P data Specification available (Apr 2015) • Structures data specification (Jun 2014) • Development and introduction of processes to maintain the required standards (June 2015) • Continuously improve the data specifications based on MDM outputs (June 2015) • To complete all asset information standards and guidance information to ISO/BS requirements (Jun 2015)	**Network Rail January 2018 Success Criteria**	• Signalling data specification available on schedule • E&P data specification available on schedule • Structures data specification available on schedule • In place and operational - BAU • In place and operational - BAU • In place and operational - BAU	
Baseline Score (based on timely achievement of all documented improvements)				**91%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	All key opportunities included in Roadmap. Further improvement in maturity scores would be reliant on multiple small factors and demonstrable output performance and continuous improvement over a number of years.			
Deliverability Risk Scores				
Available Level of Plan Detail	Detailed programme and resource plans but not yet implemented			2%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Largely within Network Rail's control			1%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**82%**

Table 28 Asset Information Standards

A.24 Asset Information Systems

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Asset Information	**Asset Information Systems**	The asset information systems an organization has in place to support the asset management activities and decision-making processes in accordance with the Asset Information Strategy.		
Network Rail Capability Statement	To put in place Asset Information Systems which are capable of supporting the Asset Information Strategy and which meet the business needs.			
Network Rail Improvement Specification	To provide Network Rail with the information systems required to support the Asset Management Strategy for all assets, routes and central functions. This includes all of the deliverables of the ORBIS programme.			
Network Rail Planned Activities	• Track Linear Asset Decision Support tools (May 2014) • Signalling Decision Support tool (Sept 2015) • E&P Data Store (Dec 2015) • Geogis Decommissioned (Dec 2016) • Ellipse replaces CARRS (Jun 2016) • Deploy Mobile Works Management tools to those involved in asset management /maintenance (Jan 2016)	**Network Rail January 2018 Success Criteria**	• Linear Asset Decision Support tools deployed on schedules • Signalling Decision Support tool deployed on schedule • E&P data store in place on schedule • Geogis decommissioned on schedule • CARRS replaced by Ellipse on schedule • Tools deployed and operational	
Baseline Score (based on timely achievement of all documented improvements)				**81%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	All key opportunities included in Roadmap. Further improvement in maturity scores would be reliant on multiple small factors and demonstrable output performance and continuous improvement over a number of years.			
Deliverability Risk Scores				
Available Level of Plan Detail	Detailed programme and resource plans but not yet implemented			2%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**74%**

Table 29 Asset Information Systems

A.25 Data & Information Management *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Asset Information	**Data & Information Management**	The data and information within an organization's asset information systems and the processes for the management and governance of that data and information.		
Network Rail Capability Statement	To improve and maintain asset management data records across all assets and where appropriate to improve the quality of that data			
Network Rail Improvement Specification	To enact the data requirements defined in the Asset Management .strategy specifically around: • Data ownership • Required data standards • Improvements in data collection • 4. To improve the governance surrounding asset data			
Network Rail Planned Activities	• Asset Management (AM) Policy in place • AM Policy available and communicated to the business • AMEM Lite Assessments completed to provide auditable evidence of the AM Policy being embedded into the Routes • Process to review and update the AM Policy developed, documented, communicated and embedded (Jun 2016)	**Network Rail January 2018 Success Criteria**	• Issued version of the AM Policy available at IIP and SBP • Evidence that the AM Policy is available to the business and communication events completed • Key leaders are aware of and use the AM Policy • Evidence that the process to review and update the AM Policy is known within the business and evidence that the AM Policy has been reviewed and updated in accordance with the documented process.	
Baseline Score (based on timely achievement of all documented improvements)				**79%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	All key opportunities included in Roadmap. Further improvement in maturity scores would be reliant on multiple small factors and demonstrable output performance and continuous improvement over a number of years.			
Deliverability Risk Scores				
Available Level of Plan Detail	Detailed programme and resource plans but not yet implemented			2%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**71%**

Table 30 Data & Information Management

A.26 Procurement & Supply Chain Management

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Organisation & People	**Procurement & Supply Chain Management**	The processes used by an organization to ensure that all outsourced Asset Management activities are aligned with the Asset Management objectives of the organizations and to monitor the outcomes of these activities against these objectives.		
Network Rail Capability Statement	To adopt a procurement approach consistent with the key themes directly supporting the business and broader industry. These themes are Safety, Engagement, Collaboration, Performance, Innovation, Sustainability and Communication. Some of these themes align with wider procurement standards such as BS11000 whereas others relate to the changed organization structure of Network Rail and the specific requirements of diverse clients.			
Network Rail Improvement Specification	To introduce a more collaborative approach to procurement and management of suppliers and to ensure the structure of the procurement function is aligned with the requirements of the business.			
Network Rail Planned Activities	• Introduction of collaborative (contracting methods (NEC (approach, Commercial Directors Forum, Business in the community, BS11000) etc. • Alignment of the procurement organisation with its clients, forming regional and major programme business units • Commit to sustainability as a key contracting approach • Support the introduction of alliancing within the supply chain	**Network Rail January 2018 Success Criteria**	• Collaborative contact approach embedded in both centre & routes • Re-aligned procurement structure embedded throughout NR with continual review of results • Embedment of the approach with the whole of Network Rail IP • An understanding of the alliances which exist in the supply chain feedback demonstrating positive results	
Baseline Score (based on timely achievement of all documented improvements)				**82%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Consistent monitoring and improvement of actual against anticipated cost savings.			
Deliverability Risk Scores				
Available Level of Plan Detail	No plans or high-level milestones only			6%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Significant dependencies on external parties			2%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**70%**

Table 31 Procurement & Supply Chain Management

A.27 Asset Management Leadership *

<table>
<tr><th>GFMAM Group</th><th>GFMAM Subject</th><th colspan="3">GFMAM Definition
(The Asset Management Landscape Second Edition (www.gfmam.org))</th></tr>
<tr><td>Organisation & People</td><td>Asset Management Leadership</td><td colspan="3">The leadership of an organization required to promote a whole life asset management approach to deliver the organizational and Asset Management objectives to the organization.</td></tr>
<tr><td>Network Rail Capability Statement</td><td colspan="5">Asset Management needs to be embedded in all aspects of leadership training with Network Rail.</td></tr>
<tr><td>Network Rail Improvement Specification</td><td colspan="5">Asset Management Leadership covers the planning and establishment of an organisational leadership team with clear definition of responsibilities and accountability all of which are focused on the delivery of the organisations asset management objectives.
Within the Network Rail context, it is related to ensuring that Asset Management excellence is at the heart of management and leadership training and that appropriate competence development is available to those who require it</td></tr>
<tr><td>Network Rail Planned Activities</td><td colspan="2">• The implications of excellence in Asset Management to be included in modules within management and leadership training programmes (Mar 2015)
• Success Criteria/Key Metrics to be developed for Asset Management excellence
• The required leadership competencies to be included within the overall strategy for Engineering and Asset Management competencies (Dec 2015)
• Leadership accountabilities within the asset management system are clearly laid out in the AM system</td><td>Network Rail January 2018 Success Criteria</td><td colspan="2">• Evidence that the modules have been embedded into the training programmes
• Asset Management excellence included as a key objective in Network Rail Strategy including success criteria / key metrics
• Relevant delivery programmes delivered to schedule
• Relevant delivery programmes delivered to schedule</td></tr>
<tr><td colspan="5">Baseline Score (based on timely achievement of all documented improvements)</td><td>81%</td></tr>
<tr><td>AMCL Roadmap Factors</td><td colspan="5">None.</td></tr>
<tr><td>Other Scope Opportunities</td><td colspan="5">All key opportunities included in Roadmap. Further improvement in maturity scores would be reliant on multiple small factors and demonstrable output performance and continuous improvement over a number of years.</td></tr>
<tr><td colspan="6">Deliverability Risk Scores</td></tr>
<tr><td colspan="2">Available Level of Plan Detail</td><td colspan="3">Detailed programme and resource plans but not yet implemented</td><td>2%</td></tr>
<tr><td colspan="2">Delta from CP4 Exit Score</td><td colspan="3">Delta >5<15</td><td>2%</td></tr>
<tr><td colspan="2">Current Level of Embedment</td><td colspan="3">Substantial understanding of subject and development plans at Route level</td><td>1%</td></tr>
<tr><td colspan="2">Track Record</td><td colspan="3">Some improvements but not systematic</td><td>2%</td></tr>
<tr><td colspan="2">Wider Industry Interfaces</td><td colspan="3">Wholly within Network Rail's control</td><td>0%</td></tr>
<tr><td colspan="5">Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)</td><td>74%</td></tr>
</table>

Table 32 Asset Management Leadership

A.28 Organisational Structure *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Organisation & People	**Organisational Structure**	The structure of an organization in terms of its ability to deliver the organizational and Asset Management objectives.		
Network Rail Capability Statement	To create an organisation in terms of its ability to deliver the organisational objectives and the specified behaviour complemented by appropriate organisational baseline, measurement and characterisation of barriers.			
Network Rail Improvement Specification	To better improve the mechanisms used to select members for teams and to fully understand what skills are required within the organisation to support the delivery of the Asset Management Strategy.			
Network Rail Planned Activities	• Process developed and embedded for selecting teams. The process is explicitly mapped to the company's Asset Management competency framework (Mar 2017) • Competences (skills, knowledge, etc.) for Asset Managers are defined as a group so that Asset Management strategic objectives can be met (Mar 2017) • Team coverage of these group competences is determined and translated into team goals and objectives and teams created as appropriate (Mar 2017) • Teams contributing to the delivery of the Network Rail Asset Management strategy are briefed on what is expected of them and how their performance will be measured. (Mar 2015)	**Network Rail January 2018 Success Criteria**	• Relevant delivery programmes delivered to schedule • Relevant delivery programmes delivered to schedule • Relevant delivery programmes delivered to schedule • Relevant delivery programmes delivered to schedule	
Baseline Score (based on timely achievement of all documented improvements)				**75%**
AMCL Roadmap Factors	5.4			
Other Scope Opportunities	Definition of information flow requirements between different teams, functions and management levels.			
Deliverability Risk Scores				
Available Level of Plan Detail	Detailed programme and resource plans but not yet implemented			2%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**67%**

Table 33 Organisational Structure

A.29 Organisational Culture *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Organisation & People	**Organisational Culture**	The culture of an organization in terms of its ability to deliver the organizational and Asset Management objectives.		
Network Rail Capability Statement	To create an organisation in terms of its ability to deliver an appropriate culture complemented by appropriate organisational baseline, measurement and characterisation of barriers.			
Network Rail Improvement Specification	To ensure that the desired organisational cultural is defined and to put in place processes to ensure that culture is achieved and is regularly monitored to ensure it is maintained.			
Network Rail Planned Activities	• Network Rail has developed and maintained a definition of the organisational culture(s) it desires which is consistent with any mission or value statements in place and with its Asset Management Strategy. • Annual analyses are undertaken on a sufficiently regular basis of the gap between the desired culture(s) and the current culture(s) - this should make use of such evidence as is already collected but may also require additional survey work. • The key influencing factors for, and barriers to, culture change is understood and actions are in place to address these which are under regular review.		**Network Rail January 2018 Success Criteria**	• Clear evidence of maintenance of desired organisational cultures • Evidence of regular analysis between desired and current cultures with remedial actions in place to deal with any adverse trends • Clear evidence that all barriers to cultural change are understood including any emerging barriers
Baseline Score (based on timely achievement of all documented improvements)				**78%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	All key opportunities included in Roadmap. Further improvement in maturity scores would be reliant on multiple small factors and demonstrable output performance and continuous improvement over a number of years.			
Deliverability Risk Scores				
Available Level of Plan Detail	Detailed programme and resource plans but not yet implemented	2%		
Delta from CP4 Exit Score	Delta >5<15	2%		
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans	2%		
Track Record	Some improvements but not systematic	2%		
Wider Industry Interfaces	Wholly within Network Rail's control	0%		
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)		**70%**		

Table 34 Organisational Culture

A.30 Competence Management *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Organisation & People	**Competence Management**	The processes used by an organization to systematically develop and maintain an adequate supply of the competent and motivated people to fulfil its asset management objectives including arrangements for managing competence in the boardroom and the workplace.		
Network Rail Capability Statement	To put in place the frameworks and benchmarking along with processes to identify gaps between the organisational requirements and available competencies. To also make available training to address any perceived gaps.			
Network Rail Improvement Specification	To put in place the frameworks and benchmarking along with processes to identify gaps between the organisational requirements and available competencies. To also make available training to address any perceived gaps.			
Network Rail Planned Activities	• Creation of a competence framework with individual and team competencies aligned with Asset Management Strategy requirements and the processes to revise these annually • Development of professionalisation programme, including external qualifications, available for use in BAU Mar 2015) • Completion of core training catalogues Mar 2016) • Attainment of MSc or equivalent by priority cohort (Mar 2017)	**Network Rail January 2018 Success Criteria**	• Competency framework in place and been through at least one revision cycle • Professionalisation programme deployed and in use for at least two years • Core training catalogues completed and available • Priority cohort of MSc or equivalent students achieved qualification	
Baseline Score (based on timely achievement of all documented improvements)				**81%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Incorporation of human factors policies and processes.			
Deliverability Risk Scores				
Available Level of Plan Detail	Detailed programme and resource plans but not yet implemented			2%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**73%**

Table 35 Competence Management

A.31 Risk Assessment & Management

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Risk & Review	**Risk * Assessment & Management**	The policies and processes for identifying, quantifying and mitigating risk and exploiting opportunities.		
Network Rail Capability Statement	To adopt standard methods of identifying risks and consequences across all assets and routes and in doing so, replacing the asset specific methods currently in use.			
Network Rail Improvement Specification	To put in place a number of initiatives designed to standardise the measurement and assessment of risk across the business so as to better allow relative risk across assets to be measured.			
Network Rail Planned Activities	• Adoption of common consequences tool by (Mar 2015) • Adoption of the Common Risk Matrix for safety (Sept 2015) • Adoption of standard cost benefit analysis tool across NR (Jun 2017) • Adoption of Bow Tie Risk Assessment as basic requirement including all projects being required to carry out Bow Tie Analysis at GRIP 1 within Network Rail (Jan 2018)	**Network Rail January 2018 Success Criteria**	• All assets and routes using tool with annual review • All routes and assets adopt and use tool with annual reviews • NR Investments and projects adopt the common Cost Benefit Analysis tool with annual reviews • Bow Tie Analysis to be standard process used within Network Rail with evidence of a move towards wider industry adoption	
Baseline Score (based on timely achievement of all documented improvements)				**83%**
AMCL Roadmap Factors	6.1			
Other Scope Opportunities	Development of corporate risk appetite and identification and management of mitigations. Alignment of common strategic, tactical and operational risks and risk registers.			
Deliverability Risk Scores				
Available Level of Plan Detail	No plans or high-level milestones only			6%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**71%**

Table 36 Risk Assessment & Management

A.32 Contingency Planning & Resilience Analysis

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Risk & Review	**Contingency Planning & Resilience Analysis**	The processes and systems put in place by an organization to ensure it is able to continue either to operate its assets to deliver the required level of service in the event of an adverse impact or maintain the safety and integrity of the assets (whether or not they operate).		
Network Rail Capability Statement	To put in place the processes and systems to ensure that the business is able to continue to either operate its assets to deliver the required level of service in the event of an adverse impact or maintain the assets safety and indignity.			
Network Rail Improvement Specification	To put in place written and approved contingency plan, developed and agreed with key partners, integrated plans and information on assets and operating procedures.			
Network Rail Planned Activities	• Contingency plan in place and agreed (Mar 2015) • Contingency plan implemented across the business		**Network Rail January 2018 Success Criteria**	• Plan in place • Contingency plan implemented and proven to operate across the business
Baseline Score (based on timely achievement of all documented improvements)				**88%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Regular and prioritised testing of scenario responses.			
Deliverability Risk Scores				
Available Level of Plan Detail		Detailed programme and resource plans but not yet implemented		2%
Delta from CP4 Exit Score		Delta >0<5		1%
Current Level of Embedment		Substantial understanding of subject and development plans at Route level		1%
Track Record		Demonstrable phases of improvement		1%
Wider Industry Interfaces		Significant dependencies on external parties		2%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**81%**

Table 37 Contingency Planning & Resilience Analysis

A.33 Sustainable Development *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Risk & Review	**Sustainable Development**	The interdisciplinary, collaborative processes used by an organization to ensure an enduring, balanced approach to economic activity, environmental responsibility and social progress to ensure all activities are sustainable in perpetuity.		
Network Rail Capability Statement	To embed processes which demonstrate the businesses commitment to include sustainable measures as part of asset policies and to reflect the company's commitment to increase resilience in the light of climate change.			
Network Rail Improvement Specification	• Asset Policy updated to reflect S&SD strategy requirements • Process in place to be able to measure S&SD outcomes • Adopt a two phase approach to ensuring the business planning process aligns with S&SD strategy			
Network Rail Planned Activities	• Asset Policies updated and implemented with agreed coverage of S&SD strategy requirements (Mar 2015) • Agreed set of measures in place to monitor and review effectiveness of S&SD outcomes to support continuous improvement (Mar 2016) • Phase 1Business planning processes and project development processes fully aligned to requirements of the S&SD strategy (Mar 2015) • Phase 2 Business planning processes and key project development processes fully embedded in CP6 policies and plans (Mar 2016)	**Network Rail January 2018 Success Criteria**	• Policies updated as per schedule • Agreed measures in place and being monitored • Processes fully aligned to schedule • Ongoing annual reviews/updates as part of BAU management & monitoring	
Baseline Score (based on timely achievement of all documented improvements)				**78%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Clarity around environmental incentives and financial impact assessment (e.g. triple bottom line). Integration of triple bottom line into Asset Management System.			
Deliverability Risk Scores				
Available Level of Plan Detail	Detailed programme and resource plans but not yet implemented			2%
Delta from CP4 Exit Score	Delta >=15			3%
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**70%**

Table 38 Sustainable Development

A.34 Management of Change

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Risk & Review	**Management of Change**	An organization's processes for the identification, assessment, implementation and communication of changes to people, processes and assets.		
Network Rail Capability Statement	To put in place processes, systems and training to support the change management function.			
Network Rail Improvement Specification	Identify what actions are required to improve the current Change Management process. Define and communicate actions throughout the business			
Network Rail Planned Activities	• Define specific actions to improve established processes and cascade by assimilating current best practice to the routes (Mar 2015)	**Network Rail January 2018 Success Criteria**	• Actions implemented and subject to continuous improvement	
Baseline Score (based on timely achievement of all documented improvements)				**65%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Overall change management framework and accountabilities for the Asset Management System. Further definition of plans for Management of Change. Consistent corporate policy and processes required.			
Deliverability Risk Scores				
Available Level of Plan Detail	No plans or high-level milestones only			6%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**53%**

Table 39 Management of Change

A.35 Asset Performance & Health Monitoring *

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Risk & Review	**Asset Performance & Health Monitoring**	The processes and measures used by an organization to assess the performance and health of its assets using performance indicators.		
Network Rail Capability Statement	To review current asset performance indicators and where weaknesses exist, to put in place processes and measures to allow the health of assets to be measured.			
Network Rail Improvement Specification	• Define suitable measures which can be used across the business to monitor asset performance and health • Develop a body of knowledge on best asset management practices • Develop and embed suitable monitoring processes to enable continual improvement			
Network Rail Planned Activities	• Launch , adopt and monitor new suite of periodic KPIs for CP5 • Develop Body of Knowledge (BoK) for best practice asset management available across business (Sept 2014) • Annual tailored programme of Route capability benchmarking, applied within AMEM Lite • Continue to develop plans in response to findings of benchmarking activity	**Network Rail January 2018 Success Criteria**	• All new KPI's in place and in use as BAU • BoK in place and reviewed on an annual basis • Annual AMEM Lite benchmarking in place as BAU • Demonstration of the existence change programmes which are in direct response to the findings of AMEM Lite	
Baseline Score (based on timely achievement of all documented improvements)				**85%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	AMEM Lite should be considered under Subject 36. More focus on clear definitions of lifecycle measures and feedback into the Asset Management System / Asset Policies, including greater clarity of feedback loop from asset performance to continuous review/improvement against corporate objectives and outputs.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Substantial understanding of subject and development plans at Route level			1%
Track Record	Demonstrable phases of improvement			1%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**77%**

Table 40 Asset Performance & Health Monitoring

A.36 Asset Management System Monitoring

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Risk & Review	**Asset Management System Monitoring**	The processes and measures used by an organization to assess the performance and health of its Asset Management System.		
Network Rail Capability Statement	Processes are in place for reviewing and auditing the effectiveness of the company's asset management processes and asset management system by means of a rolling programme of KPI's and audit (both internal and external).			
Network Rail Improvement Specification	To review the current Asset Management System Monitoring approach and in the light of the review, to define what additional measures are required to ensure the on-going maintenance or improvement of standards			
Network Rail Planned Activities	• Launch, adopt and monitor new suite of KPI's for CP5 • Develop Body of Knowledge (BoK) for best practice Asset Management and make available across business (Sept 2014) • Network Rail Asset Management independently assessed as Excellent • Benchmarking strategies for each asset / business unit / area are developed in line with corporate benchmarking framework • Plans developed/updated in response to the findings of the annual benchmarking of route capability via AMEM Lite.	**Network Rail January 2018 Success Criteria**	• New KPI's reported periodically as part of BAU • Evidence of continuous improvement to BoK • Excellent score achieved • Benchmarking planning and activity is a BAU activity with all assets at target benchmarking maturity model levels • AMEM Lite established as BAU activity • Evidence of route plans being reviewed and updated in accordance to the findings of the AMEM Lite process	
Baseline Score (based on timely achievement of all documented improvements)				**70%**
AMCL Roadmap Factors	6.4, 6.5			
Other Scope Opportunities	Focus on Asset Management System management review process. Clarity of how adherence to the system and its overall fitness-for-purpose will be assessed and continually improved.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >=15			2%
Current Level of Embedment *	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**59%**

Table 41 Asset Management System Monitoring

A.37 Management Review, Audit & Assurance

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Risk & Review	**Management Review, Audit & Assurance**	An organization's processes for reviewing and auditing the effectiveness of its asset management processes and asset management system.		
Network Rail Capability Statement	Processes to be in place to review and audit the effectiveness of its asset management processes and asset management systems.			
Network Rail Improvement Specification	To deploy the capabilities to carry out specific audits/reviews on potential Asset Management rationalisation and to put in place forums to debate the outcomes and to define refinements.			
Network Rail Planned Activities	• Annual review of Asset Management System with corrective action developed for any shortcomings (AMEM Lite) • Confirm presence of a systematic assurance and audit approach for Asset Management System (Mar 2015) • Establish systematic approach and (improved tools to share work banks (• Complete stated Engineering verification (programme (• Review, monitor and debate reports (establishing corrective action plans if (required	**Network Rail January 2018 Success Criteria**	• Evidence of annual review process in place with continual improvement • Evidence of Assurance and audit approach for Asset Management System embedded in business • Establish approach on schedule • Embedded annual review process in place • Embedded annual review process in place	
Baseline Score (based on timely achievement of all documented improvements)				**76%**
AMCL Roadmap Factors	6.5, 6.6			
Other Scope Opportunities	Focus on Asset Management System audit plan and feedback to management review via management of preventive / corrective actions.			
Deliverability Risk Scores				
Available Level of Plan Detail	Outline Plans only			4%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment *	Substantial understanding of subject and development plans at Route level			1%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**67%**

Table 42 Management Review, Audit & Assurance

A.38 Asset Costing & Valuation

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Risk & Review	**Asset Costing & Valuation**	An organization's processes for capturing 'as built', maintenance and renewal unit costs and the methods used by organization for the valuation and depreciation of its assets.		
Network Rail Capability Statement	Accounting practices to be put in place which allow the costs associated with both maintenance and renewal activities to be captured. To also put in place methods to allow the value and depreciation of assets to be monitored.			
Network Rail Improvement Specification	• Ensure that the business has standard and agreed methods for capturing and reporting the key cost items associated with both Maintenance and Renewal activities • To be able to assist in the definition of policies by means of these key cost items			
Network Rail Planned Activities	• Develop and implement key cost line (work for maintenance costs (Mar 2015) (• Define Policy needs and resolve through key cost line work (Mar 2015)	**Network Rail January 2018 Success Criteria**	• Implemented to schedule • Implemented to schedule	
Baseline Score (based on timely achievement of all documented improvements)				**77%**
AMCL Roadmap Factors	2.16			
Other Scope Opportunities	Embedding of RMM and MUCs in particular, plus asset valuation and liabilities. Documented asset valuation methodology and register aligned with criticality analysis.			
Deliverability Risk Scores				
Available Level of Plan Detail	No plans or high-level milestones only			6%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Limited understanding of subject at Route level and no available development plans			2%
Track Record	Some improvements but not systematic			2%
Wider Industry Interfaces	Wholly within Network Rail's control			0%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**65%**

Table 43 Asset Costing & Valuation

A.39 Stakeholder Engagement

GFMAM Group	GFMAM Subject	GFMAM Definition (*The Asset Management Landscape Second Edition (www.gfmam.org)*)		
Risk & Review	**Stakeholder Engagement**	An organization's processes for capturing 'as built', maintenance and renewal unit costs and the methods used by organization for the valuation and depreciation of its assets.		
Network Rail Capability Statement	Accounting practices to be put in place which allow the costs associated with both maintenance and renewal activities to be captured. To also put in place methods to allow the value and depreciation of assets to be monitored.			
Network Rail Improvement Specification	• Ensure that the business has standard and agreed methods for capturing and reporting the key cost items associated with both Maintenance and Renewal activities • To be able to assist in the definition of policies by means of these key cost items			
Network Rail Planned Activities	• Develop and implement key cost line (work for maintenance costs (Mar 2015) (• Define Policy needs and resolve through key cost line work (Mar 2015)	**Network Rail January 2018 Success Criteria**	• Implemented to schedule • Implemented to schedule	
Baseline Score (based on timely achievement of all documented improvements)				**74%**
AMCL Roadmap Factors	None.			
Other Scope Opportunities	Structured stakeholder management approach, including documented stakeholder management and engagement policies, processes and plans.			
Deliverability Risk Scores				
Available Level of Plan Detail	No plans or high-level milestones only			6%
Delta from CP4 Exit Score	Delta >5<15			2%
Current Level of Embedment	Clear understanding of subject in Routes			0%
Track Record	Demonstrable history of systematic and sustainable improvement			0%
Wider Industry Interfaces	Critical dependencies on external parties			3%
Lower Estimate Score (based on Baseline Score minus Deliverability Risk Scores)				**63%**

Table 44 Stakeholder Engagement

Appendix B CP4 Roadmap Recommendations

The following table shows where the Improvement Specifications of AMCL's 2012 Asset Management Roadmap, developed on behalf of Network Rail, have been evidenced as included in the current CP5 Roadmap documentation. This represents the headline view of AMCL only, based on the evidence provided by Network Rail to support the prima facie review of the CP5 Roadmap. Whilst good evidence was available in a number of areas of Network Rail's plans, some were still lacking detail and required further evidence against one or more individual items in the relevant Improvement Specification from the 2012 Asset Management Roadmap.

Group	2012 Ref.	End of CP4 Status	Fully Covered by CP5 Roadmap?*	Improvement Specification Partially Outstanding?*
Asset Management Strategy & Planning	1.1	Partially Achieved	Yes	
	1.1	Achieved	n/a	
	1.3	Partially Achieved	Yes	
	1.4	Achieved	n/a	
	1.5	Achieved	n/a	
	1.6	Achieved	n/a	
	1.7	Achieved	n/a	
	1.8	Partially Achieved	No	Yes
	1.9	Achieved	Yes	
	1.10	Partially Achieved	Yes	
	1.11	Not Achieved	Yes	
	1.12	Achieved	n/a	
Whole-life Cost Justification	2.1	Achieved	n/a	
	2.2	Partially Achieved	No	Yes
	2.3	Partially Achieved	No	Yes
	2.4	Achieved	n/a	
	2.5	Not Achieved	No	Yes
	2.6	Not Achieved	No	Yes
	2.7	Partially Achieved	No	Yes
	2.8	Achieved	n/a	
	2.9	Achieved	n/a	
	2.10	Partially Achieved	Yes	
	2.11	n/a	n/a	
	2.12	Not Achieved	Yes	Yes
	2.13	Achieved	n/a	
	2.14	Achieved	n/a	
	2.15	Not Achieved	Yes	
	2.16	Partially Achieved	No	Yes
Lifecycle Delivery	3.1	Not Achieved	Yes	
	3.2	Partially Achieved	No	Yes
	3.3	Achieved	n/a	

Group	2012 Ref.	End of CP4 Status	Fully Covered by CP5 Roadmap?*	Improvement Specification Partially Outstanding?*
	3.4	Achieved (with minor deficiencies)	No	Yes
	3.5	Partially Achieved	Yes	
	3.6	Partially Achieved	Yes	
	3.7	Not Achieved	No	Yes
	3.8	n/a	n/a	
	3.9	Partially Achieved	No	Yes
	3.10	Achieved	n/a	
	3.11	Partially Achieved	No	Yes
Asset Knowledge	4.1	Achieved	n/a	
	4.2	Achieved	n/a	
	4.3	Achieved	n/a	
	4.4	Achieved	n/a	
	4.5	Partially Achieved	Yes	
	4.6	Partially Achieved	Yes	
	4.7	Achieved	n/a	
Organisation & People	5.1	Not Achieved	Yes	
	5.2	Not Achieved	Yes	
	5.3	Partially Achieved	Yes	
	5.4	Partially Achieved	No	Yes
	5.5	Achieved	n/a	
	5.6	Not Achieved	Yes	
	5.7	Achieved	n/a	
Risk & Review	6.1	Partially Achieved	No	Yes
	6.2	Achieved	n/a	
	6.3	Achieved	n/a	
	6.4	Partially Achieved	No	Yes
	6.5	Partially Achieved	No	Yes
	6.6	Not Achieved	No	Yes
	6.7	Partially Achieved	Yes	
	6.8	Achieved	n/a	

*Based on AMCL's prima facie review of Network Rail's CP5 Roadmap