

Routes to Market

Work Package 4 Lessons Identified and Leading Practice Report

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Date: 14/03/2017

Document Control Sheet

Programme Title Routes to Market
Report Title Work Package 4 Lessons Identified and Leading Practice Report
Revision V2.0
Status Draft
Control Date 14/03/17
Assurance Level 3

Record of Issue

Version	Purpose	Author	Reviewed by	Date
0.1	Draft	Will Josten	[REDACTED]	10/03/17
1.0	For Review	Will Josten	[REDACTED]	13/03/17
2.0	For Issue	Will Josten	[REDACTED]	14/03/17

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1 Context

Highways England (HE) is expected to deliver circa £15.2bn of infrastructure works to the UK's Strategic Road Network by 2020 within the first Road Investment Strategy (RIS 1), with a similar level of spend expected by 2025 through the subsequent RIS 2.

A significant proportion of RIS 1 spend is being delivered through the Collaborative Delivery Framework (CDF), with Category Management Frameworks, Asset Led Delivery Model, Asset Framework, Specialist Professional and Technical Services Framework and Programme Delivery Partner Framework completing the contractual landscape for HE's current portfolio.

With the CDF due to expire before the end of RIS 1, there is a balance of schemes across all four HE Programmes - Smart Motorways Programme (SMP), Complex Infrastructure Programmes (CIP), Regional Infrastructure Programme (RIP) and Operations Delivery (OD) - which will not be delivered through the framework, and do not currently have an existing procurement route.

HE must effectively establish a procurement solution for delivery of schemes worth over £11bn in total, to accommodate what will be a substantial ramp-up in potential throughput compared to the £5bn CDF.

The Routes to Market (RtM) procurement programme was initiated in March 2016 to plan and implement the procurement solution - with a target award date of May 2018 – to be used for efficient and effective delivery of RIS 1 and RIS 2 schemes across HE.

2 Aims and Objectives

The Work Package (WP) 4 Lessons Identified and Leading Practice Review was commissioned by HE to identify lessons from the CDF, and leading practice for infrastructure delivery from major infrastructure providers, to be learned through being embedded within the RtM procurement programme, in alignment with the Infrastructure and Projects Authority (IPA) Project Initiation Routemap - a UK Government framework that brings together leading practice for infrastructure delivery.

Two distinct pieces of work have been conducted, the outputs of which have been mapped against the IPA Six Pillars of Procurement (from the Project Initiation Routemap Procurement Module):

1. CDF Lessons Identified Report (Annex 1)

- ▶ The CDF Lessons Identified Review set out to identify critical lessons relating to the initiation, development and operation of the framework currently used across all four HE Programmes for delivery of infrastructure works
- ▶ The objective was to develop a set of critical RtM improvement opportunities plotted against the IPA Six Pillars of Procurement - with clearly defined benefits and outline action plans to be implemented within the RtM procurement programme; the improvement opportunities were built on lessons identified using evidence points from multiple sources (including documentation, data and stakeholder engagement) across HE and the supply chain, and validated by key stakeholders

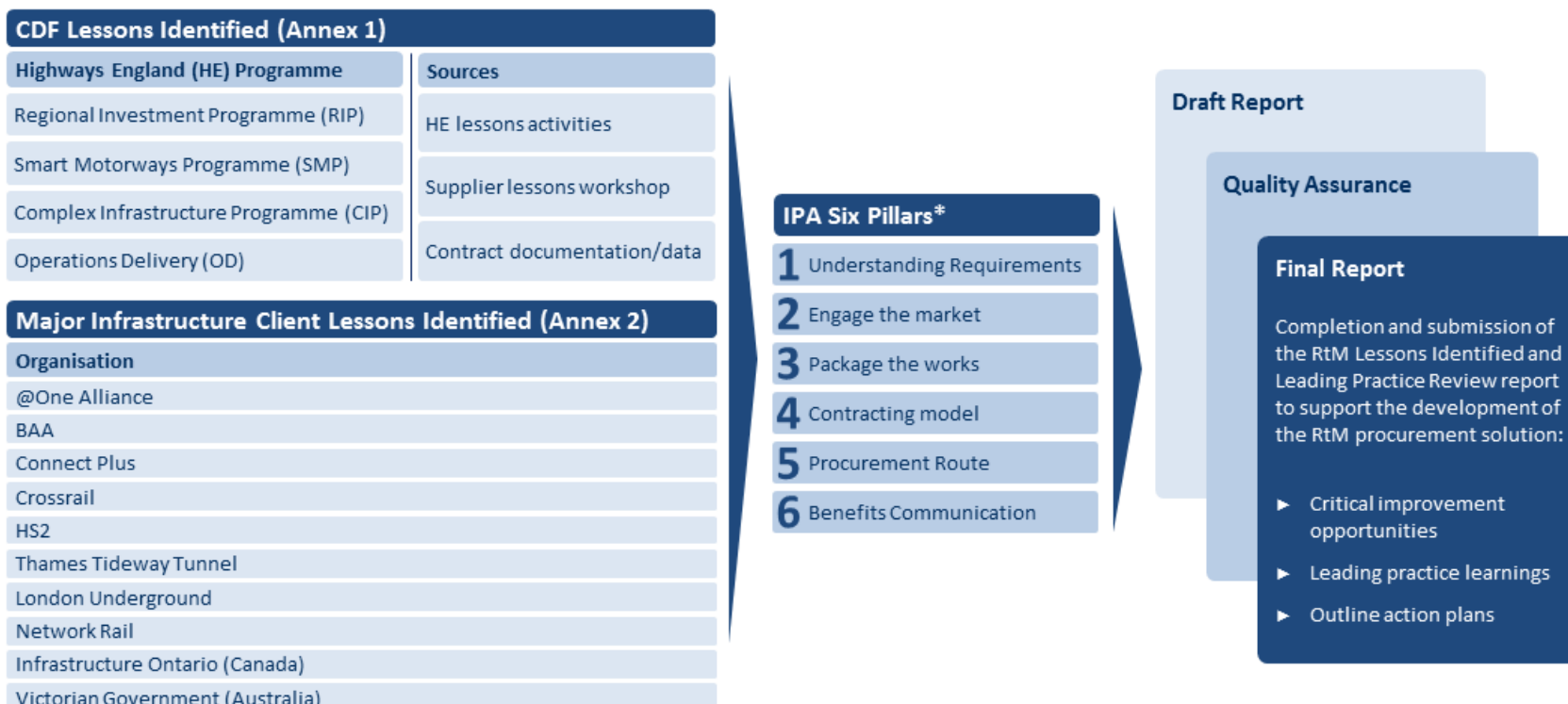
2. Major Infrastructure Client Research Report (Annex 2)

- ▶ The Major Infrastructure Client Research Review was carried out to identify leading practice in the planning and delivery of infrastructure outside of HE and across other UK programmes
- ▶ The objective was to capture leading practice learnings in alignment with the IPA Six Pillars of Procurement - to incorporate within the RtM procurement programme, specifically to support development of the solution for the Outline Business Case (OBC), the Statement of Requirements (SoR) and market engagement activity - through engagement with eight industry peers in the UK as well as two major international infrastructure clients in Canada and Australia

3 Review Methodology

The RtM Lessons Identified and Leading Practice Review has been delivered using the following methodology:

- ▶ Collated, analysed and validated existing lessons identified through the CDF
- ▶ Incorporated perspectives from all HE Programmes and suppliers
- ▶ Underpinned lessons with documentation and data where applicable
- ▶ Consulted major infrastructure providers in the UK and internationally
- ▶ Mapped our findings against the IPA Six Pillars of Procurement*
- ▶ Assessed applicability of findings to the RtM Programme



**The Infrastructure and Projects Authority (IPA) Project Initiation Routemap Procurement Module is a UK Government framework that brings together leading practice for infrastructure delivery around Six Pillars of Procurement*

4 Analysis

We have developed 12 critical improvement opportunities derived from 35 lessons identified against the CDF, and 14 key leading practice learnings from other major infrastructure clients, which have been mapped against the IPA Six Pillars of Procurement for implementation within the RtM procurement programme:

IPA Six Pillars	CDF Lessons Identified	Major Infrastructure Client Research
1 Understanding Requirements	<p>#1 Establish and empower RtM as a strategic HE procurement programme in order to leverage maximum value through the procurement process</p> <p>#2 RtM to produce a Statement of Requirements for SMP, RIP and OD including a defined delivery solution to outperform HE RIS 1 and 2 outcomes</p> <p>#8 Undertake appropriate surveys and inspections to understand asset condition early in planning and design phase (PCF stage 2/3) in order to optimise scheme delivery</p> <p>#9 Build on excellent unit cost information to develop Compatible Unit Model to benchmark scheme target price (between PCF stage 3 and 5)</p> <p>#11 Build an intelligent client delivery model to develop capability and capacity for HE aligned to programme delivery requirements</p>	<p>A Align the measurement of project or programme objectives with the client Business Plan to tie suppliers into the achievement of corporate goals</p> <p>B Align performance around customer outcomes</p> <p>C Define the capability and capacity of the client organisation prior to solution development</p> <p>M Plan and manage ramp-up in the pipeline of work to be delivered</p>
2 Market Engagement	<p>#3 Structured and focused engagement with the supply chain to align them to the SoR and solution in order to outperform HE RIS 1 and 2 outcomes</p>	<p>D Test market appetite with delivery options to reveal market capacity and inform the programme packaging strategy</p> <p>N Conduct ongoing market engagement targeting all tiers, to inform the development of programme and to condition the supply chain</p>
3 Packaging the Works	<p>#4 Analyse the supply chain spend to develop a clear supplier segmentation model which identifies opportunities, vulnerabilities and risk within HE supply chain</p> <p>#5 Design a robust and flexible work packaging strategy which enables the supply chain to leverage greater value to meet HE outcomes</p>	<p>E Use programme packaging to minimise interface risk by considering supplier numbers, the volume of packages and subsequent interfaces created</p>
4 Contracting Model	<p>#6 Create incentive mechanism to drive programme outperformance which necessitates supply chain collaboration</p> <p>#7 HE intelligent client model must have technical authority to drive design efficiency and control spend on design</p>	<p>F Historic knowledge of the client cost base facilitates outcome based contracting and supplier innovation within the cost envelope</p> <p>G A client-led approach to design aggregation can improve deliverability</p> <p>H Consider focusing less on the management of fee and more on savings made through productivity to incentivise performance</p> <p>I Consider shared milestones when incentivising programme performance to mitigate gaming behaviours</p> <p>J Seek to create the correct relationships between senior project or programme leaders and encourage leaders to set a cultural precedent for the workforce</p>
5 Procurement Route	<p>#10 Procure programmes of work to provide the supply chain with the confidence to invest and to innovate within the programme envelope</p>	<p>K Consider how to reduce the bid effort on the supply chain to improve participation and quality</p>
6 Benefits Communication	<p>#12 Drive innovation and continuous improvement through HE procurement activities, with aligned benefits measurement and tracking, and effective lesson learning</p>	<p>L Ensure the intended performance measurement framework is communicated throughout the tender process to support transparent post-contract application</p>

5 Conclusion

Effectively learning lessons from the CDF, and alignment with leading practice for infrastructure delivery, will enable the HE to develop an enhanced procurement solution through the RtM procurement programme to support successful delivery of RIS 1 and 2 outcomes.

CDF Lessons Identified - HE has taken significant steps to identify lessons relating to the planning and operation of the CDF. 12 critical opportunities, and associated outline action plans, have been developed from the lessons identified to apply to the RtM procurement programme. By developing and fully implementing a robust set of detailed action plans within the RtM procurement programme, lessons from the existing framework will be learned.

Leading Practice - HE has captured 14 leading practice learnings from major infrastructure clients both in the UK and internationally, and has mapped these against the IPA Six Pillars of Procurement. Through alignment with the specific insight from HE's industry peers, and with the IPA Project Initiation Routemap, leading practice will be adopted within the RtM procurement programme.

6 Recommendations

There are three key recommendations that will enable HE to deliver a successful solution through the RtM procurement programme. Implementation of these actions should be supported by HE leadership to ensure adoption across the whole business.

1. **Embed the 12 critical RtM improvement opportunities within RtM**, prioritising effective planning and focusing on outcomes aligned with HE Road Investment Strategy (RIS) 1 and 2, in order to avoid incurring similar issues to those experienced with the CDF.
 - ▶ *The RtM Management Group should agree an effective approach for the development and implementation of robust action plans for all 12 critical RtM improvement opportunities – building out the actions, assigning suitable owners, agreeing achievable completion dates and monitoring completion of all actions – in order to build the critical improvement opportunities into the RtM procurement programme*
2. **Apply the 14 key leading practice learnings to RtM**, fully utilising the specific insight gathered to support development and operation of the RtM solution.
 - ▶ *The RtM programme team should use the 14 learnings to inform development of the solution for the OBC, the SoR and the subsequent programme phases*
 - ▶ *The RtM Management Group should provide oversight in order to ensure that the 14 leading practice learnings are embedded*
3. **Align RtM with the IPA Project Initiation Routemap** in order to further benefit from leading practice for infrastructure delivery, with the RtM procurement programme adhering to the IPA Six Pillars of Procurement throughout planning, establishment and operation of the solution.
 - ▶ *The RtM programme team should adopt the IPA Project Initiation Routemap Procurement Module through key phases of the procurement programme; the RtM Management Group should provide ongoing oversight, and should consider seeking independent assurance at key points in the programme to ensure alignment with the IPA leading practice framework throughout*

Annex 1: CDF Lessons Identified Report

Please refer to separate document

The 35 key CDF lessons were identified from multiple data sources (refer to section 6) and grouped into 12 critical Routes to Market (RtM) improvement opportunities (tabled below, showing how the RtM improvement opportunities were mapped from the CDF lessons identified). The evidence for each lesson identified is shown in Appendix B.

	Lesson Identified	Improvement Opportunity
1	Governance of the initiation and development process was not adequate resulting in sub-optimal decision-making and delays. It was not clear who was driving the CDF procurement from initiation through development and into operation. Moreover, the CDF management group wasn't fully embedded from the outset.	1 Establish and empower RtM as a strategic HE procurement programme to leverage maximum value through the procurement process
2	Originally intended to be a MP procurement vehicle, key business areas (e.g. OD) weren't engaged with the procurement process despite ultimately using the framework	
3	Full mobilisation of planning for delivery did not start early enough, with award date several months after official expiry of the Managed Motorways Framework (the previous MP delivery framework) in February 2014	
4	A fully-resourced team - with clearly defined and agreed roles and responsibilities - was not established for development, delivery and operation of the framework, compromising the quality and timeliness of the output. For example, there was no dedicated project manager from initiation and the framework manager role was vacant for 9 months after framework award	
5	There were challenges in securing enough consistent tender assessors for the framework evaluation given the programme slippage that occurred, impacting the tender evaluation process	
6	There is no structured, organisational approach to collecting performance data, leading to key management information not being readily available (such as spend for RIS1 projects by PCF stage). While there are high-level generic requirements within the CDF works information, there is no detailed framework-level specification for cost and schedule reporting; this is instead managed on a scheme-by- scheme basis, affecting consistency and usability of data obtained.	
7	The tender process was time-constrained and overly complex, placing a burden (and additional cost) on the under-resourced HE procurement team, as well as the suppliers. Challenges with the process include: - Lengthy and complicated Instructions for Tenderers, requiring high level of investment from tenderers - Framework guidance documentation was not adequate to support the suppliers in tendering, or HE in administering the complex framework - Tender pricing was interpreted differently by tenderers, resulting in re-submissions and re-evaluation - The use of sample schemes encouraged tactical pricing - Behavioural assessments were developed and conducted as part of the tender evaluation, but scoring was not ultimately considered due to low success rate - There were a very high number of tender clarification questions (nearly 700 in total)	
8	The Business Case (dated December 2013) was developed nine months prior to the intended award date, reducing the effectiveness of governance and planning and contributing to delays; there were no separate Strategic Outline Business Case (SOBC), Outline Business Case (OBC), and Final Business Case (FBC) documents produced	2 RtM to produce a Statement of Requirements for SMP and RIP/OD including a defined delivery solution to outperform HE RIS 1 and 2 outcomes
9	Requirements for CDF framework weren't fully defined at the early stages of the procurement in alignment with the business case, compromising the ability of the procurement to deliver the right outcomes	
10	The framework threshold published in the OJEU (£5bn) was not based on a robust detailed spend forecast, and the framework is due to expire significantly earlier than intended as a result, in some cases affecting the preferred delivery option for schemes. Throughput has exceeded expectations on two lots (Lot 1 at 114% and Lot 3b at 80% capacity) after only two years of operation of the four-year framework.	

11	There is no clearly defined strategic pipeline for the CDF framework - with CDF largely operated on a first-come-first-served basis - affecting ability to make optimal delivery decisions and reducing opportunity for HE and its suppliers to plan effectively. Moreover, allocation of new work through the CDF in some instances has been challenging.		
12	Despite always being intended for delivery through the framework, it is viewed that some schemes could have been delivered for better value outside of the framework (e.g. A14 and SMP)		
13	While pre-award market engagement activities have taken place, these primarily focused on informing the supply chain of the CDF, as opposed to early and ongoing collaboration to identify the optimal delivery model		
14	Market engagement targeted Tier 1 suppliers who HE will directly contract with, but who subsequently sub-contract a large proportion of work to sub-tiers of the supply chain; these sub-tiers may have been engaged incidentally at supplier events but were not the focus, and as such their input has been limited	3	Structured and focused engagement with the supply chain to align them to the SoR and solution to outperform HE RIS 1 and 2 outcomes
15	Furthermore Lot 2 - for low value (£0-25m) and OD schemes - has seen significantly less throughput than anticipated (46% committed of the £450m cap) with insufficient work awarded to most suppliers to justify their investment at tender stage, impacting credibility with the supply chain		
16	There is not appropriate use of supplier intelligence to be able to readily identify resource constraints or points of failure across the entire supply chain (sub-tiers and specialist suppliers)	4	Analyse the supply chain spend to develop a clear supplier segmentation model which identifies opportunities, vulnerabilities and risk within the HE supply chain
17	While part way through the procurement some details were laid out in board papers (September/October 2013) and the business case, there is no full baseline contracting strategy and route to market approach defined, documented and agreed among key stakeholders, reducing the ability to deliver the optimum outcome		
18	There was no fully-defined, integrated strategy for work packaging, with decisions often being made on a scheme-by-scheme basis driven by funding or time constraints	5	Design a robust and flexible work packaging strategy which enables the supply chain to leverage greater value to meet HE outcomes
19	the way work has been packaged for the CDF has not fully met the original intent to deliver programmes of work, with schemes delivered as standalone projects		
20	The NEC3 form of contract used as the basis for CDF has seen a high degree of tailoring, to allow for flexibility for all eventualities (not all of which was ultimately required), resulting in increased risk		
21	Collaboration between HE – supplier and supplier-supplier is not viewed as having been fully effective, appearing to have been diminished by the use of secondary competitions		
22	HE was not seen to have fully adopt collaborative measures expected of supply chain, e.g. supply chain developed training for relevant staff to ensure collaborative behaviours were understood, but there was no parallel activity take within HE	6	Create incentive mechanism to drive programme outperformance which necessitates supply chain collaboration
23	CDF behavioural assessments were incorporated within the framework procurement, but very few suppliers were able to demonstrate the required level of behaviour. Furthermore, supplier representatives were not necessarily those who would deliver the work, diminishing the relevance of the scores		
24	the incentivisation model is extremely complex to accommodate adverse range of procurements, and is unsuitable for design work		
25	SMP schemes are currently repeating design work for similar parts (e.g. gantries, barriers) resulting in increased cost of design work		
26	While the CDF framework allows flexibility in contracting decisions, HE has often retained excessive risk – which has not been adequately managed - through separating design and construction for delivery	7	HE intelligent client model must have Technical Authority to drive design efficiency and control spend on design

27	There are a high level of compensation events on certain schemes, such as within SMP, increasing costs for the work as well as the administrative burden on project teams		
28	Surveys have not always been carried out to determine the asset condition prior to design, resulting in significant redesign (due to drainage issues), and cost increase while this was resolved	8	Undertake appropriate surveys and inspections, including geotechnical investigations, to understand asset condition early in planning/design phase (PCF stage2/3) to optimise scheme delivery and maximise benefits
29	HE has collated an excellent unit cost database to robustly challenge target price and compensation events; there is an opportunity to use this cost database to build a Compatible Unit Model - and to standardise designs - to benchmark projects at the early stages of the PCF	9	Build on excellent unit cost information to develop Compatible Unit Model to benchmark scheme target price (between PCF stage 3 and 5)
30	Secondary competition, used to create competitive tension and demonstrate value for money, is mandatory for all works through the framework, irrespective of scale and risk, impacting collaborative relationships with the supply chain and increasing tendering costs for HE and its suppliers (which are ultimately all absorbed by HE). While there are two mini competition options available (one which reduces the workload by removing evaluation of quality) there is no means of direct award (or work allocation)	10	Procure programmes of work to provide the supply chain with the confidence to invest and to innovate within the programme envelope
31	Since the framework award date (over two years ago) performance management has been based on suppliers' tender scores rather than actual performance data against CDF contracts, and as such this key incentivisation mechanism is under-utilised		
32	There is not a clear line of sight between tender evaluation, performance measurement and delivery of outcomes		
33	There is a significant reliance on the supply chain for project delivery resource (PMs) embedded across the Programmes via the SPATs contract. Furthermore, the contractor providing this resource is embedded within the PDP, without clear segregation of duties	11	Produce an intelligent client delivery model to develop capability and capacity for HE aligned to programme delivery requirements
34	While many lessons have been identified, there was no integrated, structured approach to lesson identification across the business and the supply chain (for example, to fully capture project management and strategic lessons) with development and implementation of clear action plans, reducing the likelihood of all lessons being learned	12	Drive innovation and continuous improvement through HE procurement activities, with aligned benefits measurement and tracking and effective lesson learning
35	There is no clearly defined set of objectives or benefits that were planned to be achieved by the CDF, and no understanding of how the framework has been performing against this plan		

Annex 2: Major Infrastructure Client Research Report

Please refer to separate document

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Prepared by:



Date: 13/03/17

Document Control Sheet

Programme Title	Routes to Market
Report Title	Major Infrastructure Client Research Report
Revision	V2.0
Status	For Issue
Control Date	13/03/17
Assurance Level	3

Record of Issue

Version	Purpose	Author	Reviewed by	Date

Purpose

The content of this report is designed to support the development of the Routes to Market (RtM) procurement vehicle, an £11bn+ facility responsible for enabling Highways England to meet its delivery commitment.

This document provides a summary of the key learnings and critical success factors as described by Highways England's industry peers when planning, delivering, operating and maintaining infrastructure projects and programmes. This content will be used to support the ongoing development of the business case associated with the RtM project.

It is not the purpose of this document to provide procurement design principles, options or solutions. Furthermore, content contained in this report reflects the verbal opinion offered by client representatives, engaged through the programme of research. The content presented does not represent the output of an exhaustive market engagement exercise.

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1 Executive Summary

The Routes to Market (RtM) project, initiated to support the design of a procurement vehicle to enable the delivery of Highways England's delivery commitment, has been tasked with providing a solution by Q1 2018.

This Major Infrastructure Client Research Report identifies key learning, featured below in items 'a-l', from engagement sessions with a range of infrastructure clients to support RtM research project development, scheduled to complete December 2016.

Key learning contained in this report will be used to direct further research that will significantly contribute to the development of the solution for the RtM Outline Business Case (OBC) and future requirements gathering and market engagement activity. In carrying out this work, Highways England intends to learn from the experiences faced by its industry peers when planning and managing infrastructure programmes and capitalise on this opportunity to shape the future delivery environment of the organisation. An illustration of how this report can be used to support the project development process is shown in Appendix B.

The Report categorises feedback gathered on the following topics; collaboration, client and market capability and capacity, and strategic, value based procurement. HM Treasury's *Project Initiation Routemap, Procurement Model* presents 'Six Pillars of Procurement' to illustrate key stages in devising a successful procurement strategy. For reference, key learnings from these Client facing engagement sessions are therefore grouped by these Pillar:

Key Learning by Pillar:

- **Pillar 1: Understanding Requirements**
 - a. **Align the measurement of project or programme objectives with the client Business Plan to tie suppliers into the achievement of corporate goals:** participants identified the need to determine key deliverables, timescales and Critical Success Factors up-front, to ensure these aligned with the strategic priorities of the client organisation.
 - b. **Align performance around customer outcomes:** clients explained that placing end-user satisfaction at the centre of the delivery programme and using this as a key measure of success, facilitated the alignment of client and supplier around a core common objective.
 - c. **Determine the capability and capacity of the client organisation and its ability to embrace alternative models for delivery, prior to solution development:** Participants demonstrated the importance of understanding the technical and behavioural capability of their people and the size of teams required to service future delivery models. Without this visibility, participants explained that a smooth transition from procurement to delivery may be compromised.
- **Pillar 2: Market Engagement**
 - d. **Test market appetite with delivery options to reveal market capacity and inform the programme packaging strategy:** being able to provide supply markets with potential options for delivery was viewed by participants as a critical factor in determining the risk suppliers were willing to bear and their respective capacity to deliver. This method of engagement was considered to proactively mobilise the supplier community to procure.
- **Pillar 3: Packaging the Works**
 - e. **Recognise the need to manage interface risk created when packaging a programme by considering supplier numbers, the volume of packages and subsequent interfaces**

created: The determination of where risk is best placed was cited as a core consideration when designing a packaging approach. Where interface risk can be transferred to the supply chain to manage, caution was advised regarding the volume of packages created, integration risk and the client ability to manage the number of physical contractual interfaces.

- **Pillar 4: Contracting Model**
 - f. **Historic knowledge of the client cost base facilitates outcome based contracting and supplier innovation within the cost envelope:** a client who develops a deep knowledge of the 'should cost' of its asset base, over a number of investment periods, was cited as having the ability to contract on a performance-led basis.
 - g. **Drawing on Client knowledge of complex assets serves as a key enabler to improved design and delivery:** clients explained that leveraging client knowledge of the asset base to support more complex, sector specific design challenges can improve design consistency, integration and deliverability. Furthermore, having a client design function that sits within the supply chain was cited as a model to facilitate more direct influence over design development.
 - h. **Consider focusing less on the management of fee and more on savings made through productivity to incentivise performance:** Clients highlighted that placing focus on the supply market's ability to innovate, through either prescribing a universal fee, or removing the fee element altogether, is considered a more effective way of driving improved delivery.
 - i. **Consider shared milestones when incentivising programme performance to mitigate gaming behaviours:** mutually dependent supplier milestones were cited as a possible solution to a stand-alone supplier introducing gamesmanship for commercial benefit. Clients cited this approach resulting in the receipt of milestone fees without demonstration of the anticipated collaborative behaviours, volume or quality of delivery.
 - j. **Seek to create the correct relationships between senior project or programme leaders and encourage leaders to set a cultural precedent for the workforce:** a collective agreement between client leadership and programme partners, to prioritise the mutually beneficial interests over personal gain, was cited as a core requirement of a cultural narrative that should bind leadership to those responsible for delivery.
- **Pillar 5: Procurement Route**
 - k. **Consider how to reduce the bid effort on the supply chain to improve participation and quality:** Clients advised consideration for the completeness of information provided to suppliers, to support the production of a more informed response. Furthermore, Clients urged their peers to remain mindful of the labour intensive nature of the bid process and resourcing pressure this places on the supply chain.
- **Pillar 6: Benefits Communication**
 - l. **Ensure suppliers are made aware of how their performance will be measured during the tender process to support transparent post-contract performance management:** caution was advised where project performance requirements, communicated during the project development phase, should be proactively shared with the supply community to pre-empt measures of success and communicate the nature of post-contract performance management.

The depth of responses received from Clients in each area of discussion varied depending on participant tenure, specialism, session specific focus and time afforded for engagement. To gain a deeper understanding of the observations provided, a further round of engagement is advised once the strategic objectives of the Programme become clearer.

When interpreting the content of this report, readers must remain mindful that infrastructure client organisations who the RtM team met are subject to a range of regulatory, market and funding pressures that influence their management decisions. Therefore, the successful application of a given strategy may have been the result of sector specific characteristics that may not reflect those

experienced by Highways England. For example, Framework Agreement durations under Utilities Contracts Regulations 2016 may span an eight year period, however Public Contracts Regulations 2015, under which Highways England operates, must comply with a four year maximum term.

2 Introduction

In 2014 the fiscal stimulus introduced by government for Strategic Road Network (SRN) upgrades and maintenance, indicated the need for a change in the way Highways England intended to plan, deliver and maintain its assets. To enhance economic competitiveness, further commitments to boost roads spend during this year's Autumn Statement confirms this need.

The Routes to Market (RtM) project has been initiated to consider what form the procurement vehicle may take, to support the delivery of Highways England's Roads Investment Strategy (RIS) 1 and 2, 2015-20 and post-2020 respectively. To inform this process Highways England have approached major UK infrastructure clients, from across industry, to understand the critical issues and successes experienced during the planning and execution of their projects and programmes.

2.1 Scope

The current position of Highways England's investment programme, previous delivery performance, organisational capability and state of the construction market has shaped the approach and content of this research.

2.1.1 Major infrastructure client selection

Clients were selected based on the value, size, complexity and tenure of their respective programmes, participants included:

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

A complete list of individuals interviewed at client organisations can be found in Appendix A.

2.1.2 Research parameters and format of engagement

Highways England's Business Imperatives of Safety, Customer focus and effective delivery of the RIS formed the foundation for the RtM research programme. Observations from the execution of the Collaborative Delivery Framework (CDF), a £5bn facility announced in 2014 to deliver HE's investment programme, were also considered when structuring the approach.

As a result the following key issues have shaped the nature of questioning throughout the programme:

- Recognising the need to address internal business and external market capacity issues
- Identifying how to leverage collaborative ways of working to generate and protect value
- Understanding how to drive incentivisation and safe, sustainable productivity improvements through procurement and contracting models

The Project initiation Routemap, a framework first introduced by HM Treasury in 2014 to support public and private infrastructure providers in the planning and execution of projects and programmes, was used to structure a client questionnaire and guide client engagement sessions.

In an attempt to derive greatest value from the research programme, each session was held face-to-face with major infrastructure client teams. Notes taken during these sessions were used to inform the content of this report.

2.1.3 HE Internal Stakeholder Session

On October 13th-14th a two day workshop, attended by Highways England's Executive group, was hosted by the RtM project team. During these sessions, attendees debated the key drivers that they believed should inform the design of the future RtM procurement vehicle. The following items represent a summary of views raised, however this list should not be considered exhaustive:

- a. The imminent expiry of the Collaborative Delivery Framework (CDF) and options for substitute facilities remain unclear.
- b. A severe ramp up in development activity, where for example, SMP demands a doubling in its market capacity over the next 18 months, is not met with a comprehensive delivery solution.
- c. The organisation needs to understand how regional relationships and capabilities can help support development of Complex and national programmes.
- d. The procurement and ongoing management of design requires a solution that enforces value for money and enduring quality, citing current volume based, rather than a more commoditised approach to design production.
- e. Consideration needs to be given to Highways England's current organisational capacity capability simultaneously with the design of the future delivery strategy.

These items have been used to further contextualise conversations with the infrastructure client representatives interviewed.

2.1.4 Collaborative Relationships Transformation Research 2014: Follow up

In 2014 Supply Chain Division (SCD) commissioned the production of a Major Client Research Report to gather examples of leading client practice that would show the range of approaches taken by clients to build strong, collaborative relationships with suppliers.

To inform the production of this paper, SCD confirmed that practices highlighted in the 2014 report have become founding principles of Highways England's Supply Chain Strategy:

- Collaborative working
- Contract alignment
- Performance measurement
- Cultural development
- Relationship management
- Deep understanding of the supply market and value chain
- Improved supplier engagement

Since the commissioning of this exercise over 18 months ago, while offering a series of suggested actions, SCD commented that these have now been superseded, as the Strategy's purpose has evolved to service a growing organisation in a state of flux.

3 Learning by theme

To structure client facing research sessions the questioning approach was structured around HM Treasury's *Project Initiation Routemap*, *Procurement Model*, where 'Six Pillars of Success' are presented to illustrate key stages in devising a successful procurement strategy. For ease of understanding, learning from client facing engagements is therefore grouped by Routemap Pillar.

For reference purposes, client representatives are referred to using the name of their respective parent organisations.

3.1 Pillar 1: Understanding Requirements

To align the delivery of an end product or service with business expectations, the procurement process should be designed to explain and verify client requirements and expected outcomes at the point of programme completion. Alignment between client requirements and supplier reputation in delivering the prescribed programme output make for effective stewardship of the project business case through delivery into operation.

Learning:

- **Align measurement of project or programme objectives with the client Business Plan to tie suppliers into the achievement of corporate goals.**
- **Align performance around customer outcomes.**

Determine the capability and capacity of the client organisation and its ability to embrace alternative models for delivery, prior to solution development. [REDACTED] @One Alliance cited the importance of aligning programme objectives and requirements with the client business plan. The Alliance referenced the essential alignment of supplier performance with customer outcomes, to make the shared direction of travel even clearer. This front-end common understanding is then considered to set a precedent for future performance.

Consideration for the end-user was also cited as a driving force [REDACTED] determining a delivery timeline, characterised by an immovable deadline in the 2012 Olympic Games. Importing this hard-stop to delivery ultimately drove designers to consider how to achieve operational efficiencies. Due to the delivery imperative created by the programme, determining the critical path of the project proved essential.

Certainty of progress against programme was considered a fundamental requirement by [REDACTED] [REDACTED] Tunnel's delivery partner, [REDACTED] Hitting the scheduled programme stages and achieving early hand-back of the asset was needed to satisfy the funder's desire to 'retire risk' across the programme. Under this arrangement being able to prove demonstrable programme performance to reduce programme financial risk, while improving reputational value through the avoidance of cost-time delays was essential.

The primary consideration of whether client and supply community have the capacity and capability to physically deliver a defined investment programme was cited as a critical consideration by high speed rail delivery partner, [REDACTED]

When considering market capacity risk, [REDACTED] asked the question "What can be outsourced vs. what should be outsourced"? An example of where this question came to bear was in determining the role

of the programme integrator. As there was not the appetite from the market to adopt the position for a programme of this magnitude, the decision was taken to buy-in resource to support integration activity, while retaining the risk in-house. [REDACTED] similarly front-end-loaded the requirements gathering phase, testing the market appetite to under a single contract. Determination of the feasibility of this option fundamentally affected the chosen delivery strategy.

During the mid-90s, [REDACTED] highlighted concerns in letting the development of [REDACTED] under a single fixed price lump sum contract, stating that a single supplier would effectively be taking ownership of the Airport's real estate. This identified the need for a more integrated approach to development. As a result, Cost Reimbursable contracts were identified as the preferred option, under a series of frameworks that allowed the [REDACTED] to retain an appropriate amount of risk and control as embedded Project Managers (PM), within the programme team.

However, caution was offered where to fulfil the role as an integrated client PM, a significant ramp up in capability was required. This resulted in taking on experienced hires from industry, to fill the capability gap. It was observed that in the following investment period, a number of experienced hires from industry that demonstrated a more traditional mind-set to construction left the organisation. The change in delivery model, from client-led to one where the supplier was afforded a greater level of control, was cited as a fundamental cause of this attrition.

[REDACTED] and [REDACTED] provide examples of where restricted capability within their respective organisations has resulted in the constrained ability to effectively deliver. [REDACTED] referenced its internal capability to manage Early Warning Notices under the NEC contracting suite. The rail provider suggested that the contracting community are more commercially astute than [REDACTED] teams and as a result are capitalising on this position.

A similar issue was cited by [REDACTED] when adopting a Construction Management approach to deliver its renewables programme. The transport provider explained that some staff found it challenging to support the delivery of this approach in-house. Commercial and engineering faculties were referenced as being particularly reluctant to accept broadening role responsibilities under the new model. Furthermore, it was observed that skills such as estimating and cost control were not of a suitable level across the existing workforce to deliver the level of performance initially sought.

3.2 Pillar 2: Market Engagement

Multiple 'markets' will be drawn upon over the duration of Highways England's Road Investment Strategy (RIS). Highways England's position within these markets, in comparison to other infrastructure clients should be considered. The economic environment, competing demand on resources and converging construction programmes make proactive engagement with the market critical to understanding market capacity that may constrain delivery.

Through a programme of transparent market engagement, clients begin to understand the level of risk the market is willing to bear, and suppliers are motivated to mobilise and invest in pursuit of opportunities presented. The result of a successful market engagement campaign should translate the business case into a strategy that can be effectively executed.

Learning:

- **Test market appetite with delivery options to reveal market capacity and inform the programme packaging strategy.**

The highly political and therefore public profile of [REDACTED] resulted in suppliers making, repeat appeals for engagement from an early stage of project development. In the absence of detailed information regarding project specifics, a 'high-level' procurement strategy was assembled that indicated the future direction of the programme. This approach was considered to have provided the supply chain with the visibility it needed to proactively prepare for procurement activity and as a result contributed to improving competitive tension between work packages.

The prospect of early engagement with relation to supplier visibility and capacity planning was cited by both [REDACTED] and [REDACTED] specifically referenced the difficulty experienced when attempting to source the number of stations contractors required to service its programme. As a result, a number of tendering exercises were occurring simultaneously, however, constrained supply prevented [REDACTED] from instantaneously awarding multiple contracts to the market.

[REDACTED] added that understanding the true extent of supplier capacity and determining whether capacity pledges made throughout the tender process by suppliers are 'real' should form a primary concern.

[REDACTED] demonstrated how a programme of market engagement, influenced by a Government need for cost transparency, can reveal market appetite. The delivery organisation tested the possibility of offering a single contract to the market for end to end project delivery. A rejection of a bundled option and nervousness in Government regarding the possible loss of cost and quality control through a DBFO type model shaped the chosen packaging strategy.

3.3 Pillar 3: Packaging the Works

Understanding how to 'chunk' a programme into constituent parts to take to market, is critical to effectively managing interface risk while making the prescribed scope deliverable. By dividing up programme sections for the benefit of effective management, programme packaging fundamentally shapes the organisational delivery model.

Learning:

- **Recognise the need to manage interface risk created when packaging a programme by considering supplier numbers, the volume of packages and subsequent interfaces created.**

The packaging strategies observed during the course of research are shaped around a number of drivers, such as the nature of work, geographic location and timeframe afforded for delivery. The five alliances formed at [REDACTED] use two of these elements, work type and timeframe required to deliver, as packaging parameters. For example, main design and construction works expected to be delivered over a five year period are decoupled from the delivery of less complex services.

During spring 2014, contractors were appointed to deliver [REDACTED] investment programme based on geography of the [REDACTED] real estate. The division of terminals and the airfield was considered to afford a series of benefits. Advantages were largely considered a result of suppliers being able to develop familiarity with their specific packages to support the proactive identification of safety concerns and value generating opportunities. Visibility of the programme pipeline was also cited to improve supplier confidence across the investment period.

Engagement with [REDACTED] revealed how the organisation developed its packaging strategy with the intent to minimise interface risk. Work packages were designed to have only a single supplier at each

programme site to improve supplier interface management. Furthermore, to mitigate the risk of reduced supplier capacity or insolvency, the approach was taken to award a maximum of two areas to any single supplier.

The issue of interface management through programme packaging was also acknowledged by [REDACTED]. With the programme approximately 80% complete, the integration of work packages is now a cause of concern. The tendering of fewer work packages, within which contractors are liable for managing the interface risk, was suggested as solution to avoid a similar situation occurring in future programmes. [REDACTED] further commented that focus should also be placed on the importance of gaining greater clarity regarding technological integration and anticipated equipment performance levels during the engagement phase to mitigate interface risk and systems underperformance.

The packaging strategy for [REDACTED] largely driven by geology, resulted in the assembly of three main delivery contracts (West, Central and East) with an accompanying Systems Integrator supplier responsible for M&E plant optimisation. Tideway however remains the overall programme integrator and as such is responsible for design, consents, environmental management and operational integration, in conjunction with [REDACTED]. In an attempt to build longevity into programme outcomes, the Asset Management Director is considered an internal customer during strategy formulation.

[REDACTED] similarly maintain overall integration risk in-house, citing the integration risk of a £20bn programme being too big for the market to bear. The scale of this role as the delivery programme gets underway was acknowledged. Although additional resource may be brought in to provide further capacity, integration responsibility and therefore risk would remain with the [REDACTED] as the delivery partner.

3.4 Pillar 4: Contracting Model

The internal capability and risk appetite of the buyer directly informs the chosen form of contract. The allocation of risk between client and supplier should support a procurement approach and shape a contracting model geared towards satisfying client imperatives, such as 'price certainty'.

Learning:

- **Historic knowledge of the client cost base facilitates outcome based contracting and supplier innovation within the cost envelope.**
- **Drawing on Client knowledge of complex assets serves as a key enabler to improved design and delivery.**
- **Consider focusing less on the management of fee and more on savings made through productivity to incentivise performance.**
- **Consider shared milestones when incentivising programme performance to mitigate gaming behaviours.**
- **Seek to create the correct relationships between senior project or programme leaders and encourage leaders to set a cultural precedent for the workforce.**

3.4.1 Contract selection

Over a decade long relationship in developing its relational contracting approach, has resulted in [REDACTED] being able to adopt output/outcome based contracting, under an NEC form of contract, through its [REDACTED]. This approach marks a fundamental shift from traditional contracting

based on engineering output specifications, to placing the focus on improved performance and innovation.

With deep knowledge of the utility provider's cost base, budgetary targets are set top-down, placing the onus on the supply chain to innovate within the cost envelope. Informed by outturn cost data from previous Asset Management Periods (AMP), Anglian Water does not need to approach the market to provide a benchmark for the 'should cost' of its assets. Instead, client owned historic data is relied upon to set a transparent performance baseline for suppliers. The need to include the probability of risk materialising over the duration of the programme, based on historic experience, was considered a key consideration in the risk and value process, in order to create a performance baseline that is attainable.

██████████ confirmed that a mix of fixed price and target cost options are available across the circa 96 frameworks have been let for Control Period 5 (CP5). Flexibility is afforded to accommodate complexity of project, associated risk profile and level of design development or performance specification. Multiple forms of contract are available under each framework.

████████████████████ cited the use of NEC3 Option C target cost contracts, with ██████████ offering that Option C seemed optimal given the nature and scale of the project.

Participants cited the importance of both client and supplier being able to understand the contract as key. ██████████ commented on previous experiences with ██████████ on ████████████████████ where bespoke contracts and associated deliverables resulted in a significant increase in outturn cost. ██████████ also sighted overly complex documentation as an inhibitor to a shared understanding of project success.

3.4.2 Design

██████████ explained that the supply chain explicitly asked to be included earlier in the design process. By using a line-of-route testing approach, the design programme could be modelled to understand when suppliers could potentially become involved to the benefit of the programme. For example, when planning enabling works, bridges were identified as not requiring detailed design prior to client hand-over, resulting instead in the issuance of asset performance specifications. As a result of the scale and complexity of engineering design across the programme, a year of detailed design activity was considered necessary, prior to agreeing the target cost element.

██████████ cited an increase in design costs as part of its overall cost base. Historically measured at 4-5% costs are now observed at closer to 15%. The rigidity around antiquated ██████████ design standards were referenced as a potentially stifling design innovation. However, to improve behaviours, little contractual incentive was referenced.

██████████ cited its application of an integrator model in select areas, to improve design certainty. Depots were cited as a prime example where the operational requirements of the facility need to be understood to effectively inform buildability. Without the application of internal knowledge, relying solely on external design had proved problematic.

██████████ and ██████████ referenced a similar attitude to overcoming delivery difficulties resulting from the need for redesign. ██████████ undertook a significant proportion of design engineering to mitigate the risk of challenge regarding ground conditions. This reference design was then provided to

suppliers. If the decision was taken to alter [REDACTED] design work, remodelling would have to satisfy the delivery partner's requirements and subsequent design liability would also be transferred to the supplier.

The [REDACTED] cited the differing approaches required depending on the type of design work under consideration. [REDACTED] A and B were delivered on a Design and Build basis, citing the relatively ease transfer of building design in contrast to more 'airport specific' and technically complex elements. For example, runway design is considered to benefit from a greater degree of in-house design development. Approximately a quarter of projects are designed prior to approaching the market. The [REDACTED] cost consultant is asked to provide a 'should cost' that is used as a benchmark for pricing and subsequent negotiation when agreeing supplier Target Costs.

[REDACTED] similarly cited the critical importance design maturity in a physically connected linear scheme. Previous issues experienced with trying to deliver joined-up design solutions through a Design and Build approach, resulted in [REDACTED] considering where its design engineers sat within the supply chain and whether they needed to be aggregated at a higher level. Optimised Contractor Involvement (OCI) was introduced post contract award to provide a period where design could be further refined. A large in-house engineering team is used to progressively assure design through the development process.

3.4.3 Incentivisation

[REDACTED] cited the importance of a mutually beneficial commercial model in forming the desired working relationships around shared partnering objectives. Establishing the correct commercial environment from the outset was therefore considered imperative.

The utilities provider wanted to move away from a model driven by contractor turnover that was considered to drive perverse behaviours. During the first years of the Alliance forming, where possible, fee and overhead contributions were reduced, over the medium term a move towards prescribing a universal fee was preferred. The forward looking model considers the removal of fee altogether, instead encouraging the recovery of costs through outperformance and increases in productivity that could then be redistributed. For this commercial arrangement to be successful, being able to serve as an intelligent client that has visibility of the cost base was cited as a key attribute.

Visibility of cost in driving commercial outcomes was also raised by [REDACTED] as a key concern. The cost reimbursable approach currently used by the rail provider was observed to not be incentivising the supply chain to deliver more effectively. Project complexity was cited as a key driver, resulting in measurement and the calculation of cost becoming difficult to compute.

When discussing the redistribution of savings, [REDACTED] stated that the [REDACTED] pain/gain mechanism is banded, resulting in an increase in Anglian Water's gain share, as incremental performance savings are realised. Furthermore, advice was offered to develop a shared risk pot that realistically considers the elements either the client or supplier can affect. At the Alliance level a single risk pot is provided, where the Target is outperformed, the residual flows through the commercial model to each party.

A similar model was presented by [REDACTED] where the NEC Target Cost Option C gain share is split 50/50 for the first 10%, and ratcheted down thereafter in favour of the delivery partner. An additional incentive is introduced, to encourage collaboration and mitigate interface risk across the seven

programme packages. With [REDACTED] serving as programme integrator, this arrangement offers the potential for 20% of HS2's savings to be redistributed in the event of outperformance. [REDACTED] also referenced operating on an NEC Option C Target Cost basis, with a 50/50 pain gain split with no fee awarded should the target be exceeded.

[REDACTED] offered caution on the manipulation of supplier fees. During the development of [REDACTED] 2, a commercial model was introduced that offered an added 'incentive' in the form a performance linked 'award fee' at project completion. To create this fund, a portion of supplier overhead and profit was stripped out that could later be accessed, if suppliers could demonstrate the prescribed level of performance against a suite of KPIs. However, this model was observed to import ambiguity regarding the measurement of specific metrics, for example Earned Value, causing friction between programme parties.

[REDACTED] referenced the importance of programming discipline in commercial negotiation. [REDACTED] highlighted the use of delivery incentives attached to milestone dates, as a mechanism to encourage the supply chain to focus on incremental delivery. The NEC X12 Partnering Option was also used to bind select Key Dates. However caution was advised, citing the need for programme visibility from the outset needed to include the mechanism as a viable option. [REDACTED] added, stating that incentivising programme or trigger (regulatory) specific milestones has the potential to import gamesmanship. To mitigate this behaviour, it was advised to create shared, incentive-linked milestones, where a mutually beneficial commercial outcome would encourage suppliers to hold each other to account.

[REDACTED] incentive structure sits at the Alliance and individual contractor level. The organisation made £50m available to suppliers for the achievement of key independent and shared programme milestones. For this approach to work, a shared agreement of the programme from the outset to drive performance was considered key. However, caution was advised challenging suppliers to accelerate the delivery programme, imported an additional six month negotiation period. A further share of a £20m reserve was made available if the programme was delivered below the agreed £3.1bn target cost.

At the contract level NEC Option C contracts operate with a 50/50 pain gain split capped at 20%. Emphasis was placed on the fact that incurring a pain position would result in the claw back of programme incentives, rather than direct payment. This decision was made in an attempt to encourage suppliers to focus on protecting prescribed contractual incentives. Added motivation exists where suppliers who fail to perform against a prescribed set of KPIs are at risk of losing up to 5% of their respective fee.

Despite the attempt to incentivise collaborative behaviours, [REDACTED] has not realised the level of performance it expected from this commercial structure. The linear nature and related management of programme interfaces were cited as a possible cause for this.

3.4.4 Behavioural Assessments & Culture

A range of opinion was received on the administration of behavioural assessments. The need to differentiate between the collaborative traits demonstrated by individuals during assessment centres, versus the historic culture of the individual's parent company was considered key.

█████ suggested that behavioural assessments place too much emphasis on the project team that are not anticipated to remain for the duration of the programme. It was advised that the corporate culture of contracting parties should serve as the core focus of assessment.

█████ elaborated on how the assessment process was used to inform its procurement. Behavioural assessments involved both █████ and Alliance people, where scores received affected supplier performance against the “people” section of tender documentation. Participants received the lowest scores in Health and Safety (H&S) during assessment sessions, this observation was used as a prompt to bring forward the H&S agenda during the tender process. The practice of including client teams as part of the selection process was also championed by █████

█████ stated that in an alliance environment, Project Directors considered the interim review of collaborative behaviours as unnecessary process. However, the █████ provider cited the importance of this exercise, to ensure alliance parties can later be held to account, if a deviation from mutually agreed collaborative behaviours is observed. █████ agreed with █████ position, citing the importance of behavioural assessments to instilling a common culture that promulgates over the duration of the programme.

█████ and █████ cited the need for leadership to set a cultural precedent when engaging in collaborative contracting arrangements. █████ highlighted the need to foster the correct relationships at the senior level, to guide behaviours within operational teams.

█████ supported this position, describing the importance of this hierarchical linkage in empowering teams to deliver. In an effort to safeguard continuity and foster this common culture, the Project drafted ‘switch-out’ clauses into contracts that penalise contractors if they are unable to field a continuous workforce. Furthermore, to affirm the safety agenda, statistical modelling was used to infer the number of safety incidents that could be expected over the duration of the programme. Acknowledging that the output of this work was unacceptable, the project challenged the industry status quo with measures such as limiting the operative’s shifts to a 10 hour maximum.

To help foster a common collaborative culture between main contractor parties, █████ set aside an initial sum of £169k for collaborative training, the justification that preventing the submission of a single claim would offset the investment. Following the first tranche of workshops, █████ acknowledged that designers, asset managers and other programme disciplines should be included in the ‘cultural education’. Furthermore training is offered at intervals throughout the year to prevent a reversion to adversarial ways of working.

3.4.5 Alliancing

Research participants agreed that introducing an alliance model to deliver infrastructure projects can be successful. However, emphasis must be placed on fostering the correct cultural environment and operational mechanics in order to realise this success.

3.4.5.1 Set-up and governance

█████ cited the importance of independent opinion when introducing an alliancing model that may challenge conventionally favoured approaches to delivery. When introducing the model with the organisations executive group 10 years ago, █████ a then external advisor, provided the weight required to endorse and validate what was then considered controversial thinking.

A similar experience with independent intervention was presented by [REDACTED] commenting that the Australian led Pure Alliance model was imported to the organisation by [REDACTED] an Australian-British business man and former [REDACTED]

Participants placed acute emphasis on leaving enough time to develop an integrated alliancing arrangement, developing a model as fully as possible prior to taking it to market. [REDACTED] despite being able to demonstrate an alliancing success, cited the [REDACTED] [REDACTED] as examples of alliancing failures. An acute focus was placed on the importance of people assessments during the development phase, to mitigate behavioural shortcomings.

Further caution was offered when considering the assembly of a target cost, rather than a fixed price alliance arrangement. The front-end labour intensive demand placed on organisations when developing a Target Cost approach is often underestimated, leading to relational challenges and commercial tension between suppliers that constrain effective delivery.

[REDACTED] offered further caution when considering the assembly of a tier 1 alliance to service its [REDACTED] project. A series of factors were identified as possible reasons for poor performance, not least related to an individual supplier not being familiar implementing alliancing principles. [REDACTED] provided further insight, stating that when the alliancing model was initially introduced, it was combined with traditional delivery methods to offset the risk of poor performance from alliance partners.

The induction process was cited a key mechanism to create the foundations of a behavioural alignment between alliance parties by the [REDACTED]. Participants cited the benefits of inducting suppliers in a uniform fashion to align all parties with core alliance values. [REDACTED] provide the example of creating 'shared stories' across each person in the [REDACTED] hierarchy, resulting in over 20,000 people completing the full on-boarding process.

[REDACTED] furthered the issue of shared purpose with reference to the embedment of BS11000, a framework for collaborative business relationships. Over the last year, this measure has been used as a catalyst to create standardised templates to simplify Alliance administration.

The alliancing model chosen was cited by [REDACTED] as potential enabler to expedited decision making. [REDACTED] suggested that if an alliancing arrangement is established as a limited company, alliance specific processes and levels of authority for sign-off can be created, to circumvent sometimes complex client organisation governance.

3.4.5.2 Performance

A collective agreement to act in each party's mutual interest, and to the benefit of the client organisation, serves as the central premise of alliancing arrangements. The [REDACTED] set out to embrace this philosophy with the introduction of an 'Alliance White Book'. The document describes a joint commitment, held by Alliance parties, to practice programme management and product development activities in a way that aligns with a shared vision to collectively improve. As a result of this commitment the following observations were made:

- Estimated 3% annual savings over a 12 year period.
- Interface management costs and reduced duplication as primary areas of savings; in the first 4-5 years this was achieved by moving from a disaggregated to more process driven way of working;

- Product improvements and improved delivery efficiencies followed.

██████████ has its own success story in the three-way ██████████. This project resulted in the formulation of a high performing team that accepted joint liability for project failure. Success of the Alliance was attributed to Project Directors demonstrating mutually beneficial behaviours, making a commitment to deliver to budget, rather than recovering costs through potential scope variations.

To driver performance the ██████████ champions the integration of technology to test interface risk and improve the likelihood of successful delivery. Digital rehearsal rooms have been used to understand where processes can be condensed to accelerate programme. The supply chain not being in place was cited as one of the primary reasons for project failure. Programme simulations help to better understand the impact stage gating has on achieving programme success. Using digital platforms to support open collaboration was therefore seen as imperative for delivering shared programme transparency.

To maintain the desired behavioural traits over the duration of the programme, the Alliance have an annual Partner level review process that assesses the people, quality and leadership elements of supplier performance, with the creation of a resultant action plan to guide improvement. In the event of underperformance, under the ██████████ arrangement, there is a collective agreement between Alliance members to sanction work.

3.4.6 Tier 2 engagement

██████████ commented on its effort, to promote tier 2 contractors from the previous control period to tier 1 positions, citing the ability of smaller suppliers being more agile in changes to scope, due to an avoidance of parent company governance.

The ██████████ provider, together with ██████████ commented that purchasing off of category management frameworks is offered as an option. Although not mandated by ██████████ ██████████ clarified that alternative sourcing options may only be considered if a value for money case can be evidenced. Furthermore, ██████████ argued that spot price purchasing in the open market may appear to offer a lower cost option, however this may not reflect the outturn cost ultimately realised. The importance in developing a deeper relationship with the tier 1 and tertiary supply chain was therefore considered key.

██████████ highlighted its wish to have a greater degree of visibility over tier 1 subcontracting activity. Advice was offered to be more intrusive in the procurement of subcontractors by tier 1 clients, by mandating the use of digital platforms such as Bravo or Award in Works Information to support monitoring. When discussing the procurement of stations contracts, the rail provider admitted it should've been more forthright in approaching tier 2 and 3 suppliers directly who may have been able to provide common services.

██████████ referenced its use of a Construction Management (CM) approach in the renewals space to facilitate a more direct form of engagement with tier 2 suppliers. Following conditioning from previous tier 1 relationships, tier 2 suppliers were observed to not be exercising their influence, afforded to them under the new model, to effectively validate estimates for works. ██████████ commented that the period taken to overcome the forceful conditioning, as a result of historic downward pressure received from tier 1 contractors, caused a delay to realising the benefits of the approach.

3.5 Pillar 5: Procurement Route

It is widely accepted that major and complex programmes may use a combination of procurement routes (routes to market), to guide the supplier selection process. In determining the most effective route, time afforded for the tendering process, level of certainty required over solutions identified, client- supplier capability and capacity to administer the various forms of approach must be considered.

Learning:

- **Consider how to reduce the bid effort on the supply chain to improve participation and quality.**

██████████ cited the importance of reducing supplier bid costs to encourage participation and bid quality. Running simultaneous tenders for framework contracts, in the case of ██████████ provides the opportunity for supplier to realise efficiencies in their approach to winning work. ██████████ agreed that, concurrent procurement for multiple packages enabled suppliers to 'deal with the full picture', where possible facilitating the submission of single bids based on more complete information. Furthermore, this method of procuring provides the option for contractor replacement if a target cost cannot be agreed with the winning bidder, following a year-long design period.

██████████ added to this reasoning, advising clients to limit the number of changes and addendums in tender documentation, to support consistent messaging while reducing the bid effort.

When entering procurement, bidding consortia were allowed to win a single contract only. Although each contract was allowed to bid for all three opportunities, once won, the winning bidder would be removed from competition for the other two opportunities.

██████████ focus tender evaluation primarily on capability. ██████████ referenced a similar focus on quality at the tender stage with a 70:30 price split. However, low bidding skewed the evaluation baseline and was cited as the cause for the award of contracts to suppliers who ultimately could not realise the expected level of efficiencies given the scale of contracts offered. For the ██████████ Programme, ██████████ are considering a possible reduction in the technical weighting to see whether suppliers can be encouraged to generate value in commercial or behavioural sections of their bids.

To import competitive tension, ██████████ cited the ██████████ arrangement that appointed single suppliers on a regional basis. For added flexibility, suppliers can be brought in for cover and may be awarded additional work in neighbouring regions in the event of outperformance. This flexibility is seen to meet the national need through the offer of regional support.

Further counsel was offered regarding single supplier frameworks. Although intuitively a quicker option to buy work, the rail provider advised that accurately defining call-off criteria up-front in framework information, expedites the call off process.

3.6 Pillar 6: Benefits Communication

The resultant benefits of government procured projects must be clearly demonstrated. As such, the expected functionality, level of performance, benefit and intended legacy of given a programme must

be clearly communicated, through the procurement process, with the intent of evidencing success during operation.

Learning:

- **Ensure suppliers are made aware of how their performance will be measured during the tender process to support transparent post-contract performance management.**

The [REDACTED] all referenced supplier performance frameworks, used to monitor and manage project planning and delivery.

[REDACTED] confessed that measurement of suppliers across the organisation, based largely on perception, is currently poor. Obtaining a comparable measure of supplier performance for individual suppliers across the [REDACTED] portfolio has therefore proved challenging.

The [REDACTED] provider confirmed its use of KPIs to remove suppliers on the basis of underperformance. However to make this a viable option, performance management measures must be advertised in OJEU, be included in the Invitation to Tender (ITT) and then written into the contract. Unless this process is followed, it was cautioned that any performance measurement system imposed would not be considered transparent.

Due to the time afforded with clients during this phase of research, no further detail was collected regarding the communication of benefits by participants internally, to the market or the broader public. However, it is acknowledged that participants are considerably active in this space beyond content presented in this Report.

4 Conclusions

Based on the opinions provided by research participants and the comparison of these to the government led model for project initiation and procurement, several common themes have been identified. Despite the differing scale and nature of client organisations reviewed, these themes and their respective drivers provide Highways England with a foundation for further investigation concerning:

- Definition of project or programme performance requirements to drive a high-functioning delivery environment.
- Matching client capability and capacity with the anticipated scale of development, remaining cognisant of the commercial and technological skills-mix that may be required in the delivery of individual programmes.
- Using the packaging strategy to mitigate interface risk through appropriate sizing and;
- Incentivising shared supplier programme performance.
- Aggregation of design responsibility and a definitive approach to the treatment of more technically complex packages.
- Encouraging client and supplier leaders to set a cultural precedent that permeates the workforce.

5 Next Steps

The transition from project to contract development under the RTM programme will demand further research to deepen understanding of programme drivers, not least to support business case

development. Once outputs from the RtM requirements gathering activity have been realised, further investigation to support Market Engagement, Packaging the Works and Contracting Model selection may include:

- A review of targeted non-UK infrastructure markets facing similar challenges of delivering and maintaining a national asset with competing regional demands, with, given the scale and nature of development, specific focus on the Middle East, Canadian and Australian markets.
- On advice of Highways England adviser, [REDACTED] research the approach of Chevron, a US based Oil and Gas Company, when managing its \$400bn investment pipeline. Research should focus on understanding how issues regarding project management and operating model design have been approached to support more effective delivery.

Appendix A - Research Participant List

Interviewees:

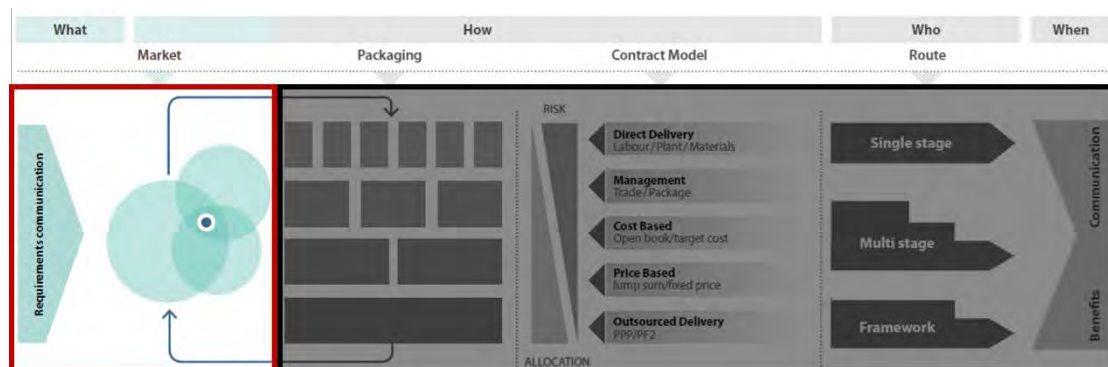
Name	Role	Organisation	Date/Time of interview
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Interviewers

Name	Role	Organisation	Date/Time of interview
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

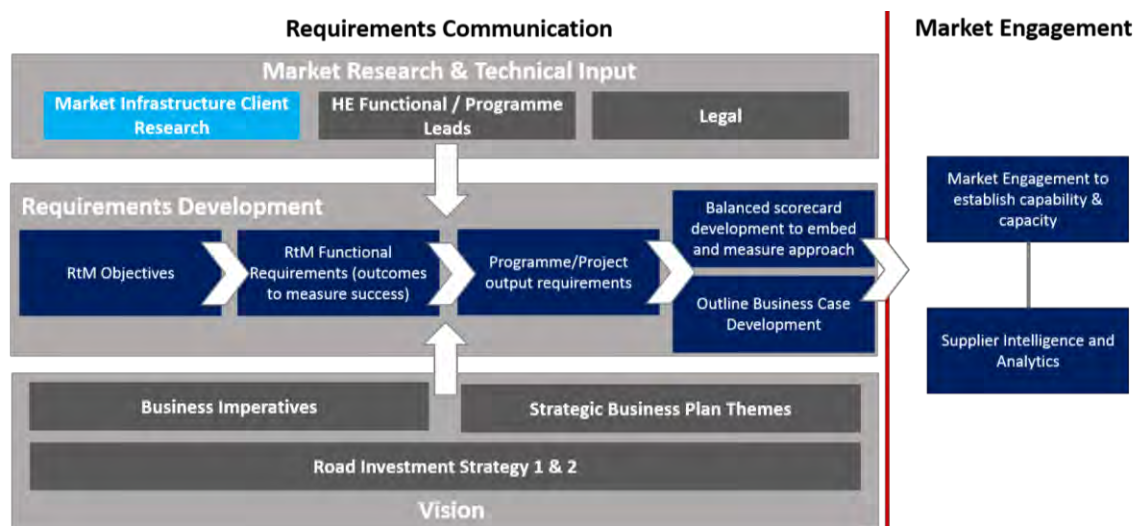
Appendix B - Potential Future Use for Report Content

The RtM team is currently navigating the Project Development phase of its programme. During this time activities designed to gather Programme objectives, output requirements and test supply markets are underway. Collectively, these activities are not dissimilar from the first two Pillars of HM Treasury's *Project Initiation Routemap, Procurement Model* that presents 'Six Pillars of Success' when devising a successful procurement strategy, shown below:



HM Treasury Project Initiation Routemap Procurement Module 2015

To set the RtM procurement up for success, giving due consideration to Pillar 1: Understanding Requirements; and Pillar 2: Market Engagement, is critical. Drawing key themes from Highway's England's Vision can provide a strategic link to inform front-end RtM procurement Objectives, and subsequent groupings of Functional (programme) and Output (project) requirements.



Requirements Communication (Understanding Requirements) Inputs

Information gathered through following the above *Requirements Communication Inputs* process should inform the measures of success, used to evaluate post-contract delivery and contractual criteria designed to shape supplier behaviours.

The RtM team should consider how they work with Functional and Project Leads to understand key deliverables, timescales, Critical Success Factors and performance expectations. Learning

contained in this report can be used to shape these conversations. For example, in a hypothetical situation where an alliance was considered the preferred delivery model for a specific programme within the Highway's England portfolio. Learning contained in this report could be used indicate those Clients with previous experience managing alliancing models, and would direct the focus of Functional Leads, from across Highways England, to re-engage with specific individuals in these Client organisations.