

# Road Restraint Systems Strategic Procurement Strategy (SPS)

### **Category Profile**

- Sign-off Matrix
- Executive Summary
- Group Category and Product

### **Business Need**

- Stakeholder Engagement
- Statement of Need
- Business Requirements and Objectives
- MP Transformation & SEG
- Historical Spend
- Demand Profiles
- Forecast Spend (incl. focus on SMA)
- Product Description
- Value Chain Analysis
- Cost Drivers (incl. MS4 case study)

#### Market Intelligence

- Supplier Engagement
- Supply Chain Mapping
- Market Insight & Landscape
- Supplier Capability & Capacity
- Supplier Financials
- Supplier Risks
- Supplier Analysis

### **Strategic Approach**

- Opportunity
- Recommendation
- Strategy
- Next Steps Milestone Plan

# Sign-off Matrix for Strategy & Approach



# **Executive Summary**

#### Current Status:

RRS procurement is currently carried out by our delivery partners to a "just in time" requirement with little forward planning and no co-ordination of requirement across the HE project portfolio.

This drives higher prices and increased risk to supply while creating an environment that promotes unsafe working practices. Our current process <u>will not</u> support our environmental commitments and obligations and will potentially have a major effect on our reputation.



#### Challenges

•	Safety:	Improved Safety for our Suppliers & Customers
•	Implementation:	Driving change is slow, analysis paralysis
•	Supply:	Small number of suppliers to the market with incompatible solutions
•	Demand:	Currently demand planning is weak offering little useful information to the business and our partners
•	Carbon Targets:	Risk of not achieving our targets unless we increase the speed of implementation of low carbon technology's
•	Early Engagement:	Early engagement of Project Management & Design team with Suppliers
•	Standardisation:	Standardisation of RRS products to increase efficiency of installation and compatibility
•	Working together:	Establishing working groups to best deliver our opportunities



To fully address the challenges and to align with our imperatives the strategy recommendations are as follows:

- Improved Safety through RRS Products and Programme planning.
- Effective Demand & Operations Planning.
- Continue to drive implementation of change through the Road Restraints Improvement Group, Innovation Reapplied & The SMA Asset group.
- Increased engagement of Suppliers through the Supplier Community to Project & Design.
- Increased focus on introducing low carbon technology, such as low carbon concrete & modern methods of construction.
- Ensure our focus remains on the whole value chain not just the product.
- Delivery of RRS cost saving opportunities described in this strategy within the RP2 period.





3

# Key aims of our strategy



Build Change through Holistic Approach, Cross Functional Involvement and Early Supplier Engagement

**Improve Innovation** by optimising Supplier experience and expertise to facilitate design and efficiency opportunities and collaboration with cross functional working groups

**Create Value** via end to end supply chain consideration to improve safety and customer experience/satisfaction. Drive efficiencies through productivity, cost savings and reduced timescales

**Standardisation** through the Digital Products Catalogue and Innovation Reapplied. Utilising digital components and 'kit of parts' fit for purpose across all HE

**Shape the Market** by developing a supply chain that is aligned with HE needs and changing technologies. Direct Tier 2/3 engagement focused on continuous improvement and performance KPIs

- Our proposal is to pursue these themes through the 5 **solutions** identified in our high-level **Implementation Plan** to deliver increased safety, productivity and cost reduction from the RP2 spend forecast.
- Potential savings across all investment programmes.
- We are already setting up the Road Restraints Implementation Group (RRIG) that will work with Innovation Reapplied & SMP Key Asset working groups to deliver joined up solutions.

# **Snapshot on our future vision**



This is a high level picture. We will develop different aspects further with stakeholders across all solutions as our implementation plan progresses



# Phased high-level Implementation Plan to deliver our key aims





# **Rollout of short-medium term solutions**





# **Rollout of medium-long term solutions**

RRS05: Integrated VRS & Environ Barrier



#### Efficiency

- Work with designers and supplier community to develop standardised design.
- Rollout via Innovation Reapplied to deliver cost reduction savings.

 Benefits: more alignment of HE and suppliers' objectives, drive improvements and innovation. Reduced space needed & life of barrier

RRS06: Recycle & Re-use Steel Barrier

#### **Circular Economy**

- Work with installers to reuse or recycle steel barrier already in place.
- Benefits: Combat steel price increases, reduce carbon though reuse and reduced logistics requirement.



### **Category Profile**

**Vision:** To identify a strategic category approach for Road Restraint Systems that will meet the demands of all our HE investment programmes whilst delivering the safest and most efficient solutions. Drive efficiencies in the Supply chain value chain to reduce waste and increase productivity to improve scheme delivery which will enable HE to target opportunities with a 5% efficiency saving with a stretch goal of 10% of HE total spend.

**Goals:** To provide a effective strategy, derived from a detailed analysis and holistic approach to Risk and opportunity identification, that can be embedded across the HE business. Offer solutions on how to achieve the greatest innovations and efficiencies for the future that shape the future of the sector. Implementation of Standardisation, innovation, innovation reapplied and digital product catalogue suite of components fit for purpose across the wider HE business Tier 2 direct engagement to have a voice for continued efficiency and continuous improvement by monitoring and enhancing KPIs

**Scope:** Roadside barrier systems are used to contain vehicles, prevent vehicles colliding with hazards and obstacles and to prevent drivers from traversing the central reservation resulting in a head on collision. Common sites to install a barrier are to protect Bridge ends, restrict access to steep slopes and near large infrastructure which may pose a hazard

**Opportunities:** SMA as demonstrator and wider rollout through Digital by Default & Innovation Reapplied. Develop performance indicators relevant to the type of work to demonstrate efficiencies that will drive improved safety, less road closures and more effective delivery.

Safety

**Business Need** 

Customer Service

Delivery

### Road Restraints Strategy

### Landscape:

Tier 2 Suppliers of RRS are in the main not contracted directly by HE, instead all their work is sub-contracted through Tier 1 Main Contractors.

The supply base is fairly concentrated, comprising of four main suppliers & a number of smaller installers. Tier 1 suppliers manage designers and Tier 2 where both have little to no collaboration with each other. No collaboration with HE on material requirements for programmes with schemes currently procuring individually with little if any standardisation or wider vision for HE.

Objectives	Year 1	Year 2-3	Year 4+					
Strategic Sourcing	Set vision & goals: implement strategy	Embed & deliver: strategic savings	Identify & develop: future products					
HE rollout	Collaboration with Smart Motorways Alliance (SMA)	All HE investment programmes (RIP, CIP & LTC)	New Asset Delivery SDF and barrier technologies					
Efficiencies	End to End Value stream	Innovation: logistics & installation for all RRS types	In-car lane departure technology and carbon reduction					
	Strategic Approach							

### **Market Analysis**

**Conclusion:** RRS account for 2.3% of total RP 2 spend. Opportunities exist to work closely across HE, Tier 1s and Tier 2s to share information to better understand the requirements and programme activities to enable efficient responses to ITTs and successful projects. Installation is another area of opportunity, and close work with other categories (eg. Drainage, Logistics and Traffic Management) is integral to success. Opportunities will need support and SES sign-off for design but should gain traction through Innovation Reapplied rollout to other investment programmes.



highways england

### **Stakeholder Engagement**





# Scope

- · Last resort to protect our customers and keep them safe
- Road Restraint Systems includes;
  - Steel Barrier
  - Concrete Barrier (RCB)
  - Temporary & Permanent
  - Parapets
  - Crash cushions, terminals & transitions
- Road Restraint Systems (RRS) border the majority of the Strategic Road Network
- There is currently over 8000 miles of road restraint system on the Highway
- Roadside barrier systems are used to contain vehicles, prevent vehicles colliding with hazards and obstacles and to prevent drivers from traversing the central reservation of the highway resulting in a head on collision
- Historically the intent of a barrier system was to absorb impact and slow down a vehicle, however new safety systems indicate reduced Risk to passenger safety by deflecting a vehicle to be retained on the highway
- Any system shall also be CE or UKCA marked and meet the full requirements of the DMRB, MCHW and any contract specific requirements. Testing needs to be to EN1317













### **Statement of Need**



A Safer Network	Reduced health and safety Risk through improved installation and maintenance methods Access to innovative technology to enhance road network safety for users Increase of technology usage reduce the	The Requirements	<ul> <li>To identify a strategic category approach that will meet the demands of all our HE investment programmes whilst delivering the safest and most efficient solutions</li> <li>Promote collaboration, continual improvement and efficiencies across the whole of HE business and the Supply Chain</li> <li>Improve safety</li> </ul>
Improving	opportunity for human error Reduction in installation and maintenance time /	The Objectives	<ul> <li>To provide a effective strategy, derived from detailed analysis and holistic approach to Risk and opportunity identification, that can be embedded across the HE business</li> <li>Offer solutions on how to achieve the greatest innovations and efficiencies for the future that shape the future of the sector</li> <li>To promote Lean ways of working and look wider to the involve all aspects of the value chain</li> </ul>
Customer Satisfaction	Reduction in time needed to replace damaged sections Consider the whole value stream when making procurement decisions	The Challenges	<ul> <li>Immaturity of Strategic Procurement Division. Obtaining accurate detailed data demand and spend to be able to drive efficiencies</li> <li>Lack of availability of actual spend vs forecast spend</li> <li>Lack of control in being able to enforce use of standardisation with Tier 1s - IPR design rights</li> <li>Changing the way Tier 2 commercially currently price and work – to incentivise change and inpovation</li> </ul>
Delivering the RIS	Cost effective technology and RRS solutions in line with RP budget Resilient supply chain able to meet RP Programme requirements with minimal Risk to supply Progressing towards a more dynamic procurement process	The Outcomes	<ul> <li>Procurement activity already underway – injecting strategic solutions into these</li> <li>A strategic approach that meets the needs of the customer, tailored to suit all sectors of the business. One that safely delivers value as well as meeting the delivery timescales of our individual investment programmes</li> <li>Improved health and safety record for the sector by better sharing of best practise through collaboration and innovation within the industry</li> <li>More visibility of the RRS outcomes from our various programmes</li> </ul>

**Conclusion**: through the strategies identified in this document there is a realistic chance to support individual investment programmesin their objective to meet HE efficiency targets, and contribute to their scheme /area efficiency registers evidenced to the Office of Rail & Road (ORR). We will work in collaboration with Innovation Reapplied to identify and increase our productivity by 30% in RP2, and deliver cost reduction. In conjunction with these MP transformation projects, and the Structures Efficiency Group (SEG), we will baseline and report demonstrable savings in manufacture and installation of RRS. We are already looking to analyse and agree milestones/targets for the various solutions set out in this strategy, together with our supplier community's contribution, they too, will add to the overall efficiency target captured in the cost reduction process.



# **Business Requirements and Objectives**



HE Business	Current Sourcing	Specific Objectives
SMP (SMA)	<ul> <li>No formal HE framework in place. ITT released 05/02/2021</li> <li>Alliance to procure in line with their Supply Chain Strategy.</li> <li>Advert released for EOI</li> </ul>	<ul> <li>Drive efficiencies in design, procurement and production assets to increased productivity and improved scheme delivery.</li> <li>Improved Project &amp; Programme planning</li> </ul>
RIP (RDP)	<ul> <li>No formal HE framework in place.</li> <li>DIPs to procure in line with their Supply Chain Strategy - individually, regionally or nationally.</li> </ul>	<ul> <li>Work with RDP DIPs to 'Make the Market' by shaping the sector and supply chain to safely deliver opportunities and increased efficiencies.</li> <li>Expressways are being developed to be similar in technology capability to smart motorways.</li> </ul>
CIP (A303 & A428)	<ul> <li>No formal HE framework in place.</li> <li>Each scheme tenders separately for their RRS requirement through the Tier 1 Main Contractor using their T&amp;Cs.</li> </ul>	<ul> <li>A303 requires specialised structural assets (ie. tunnel systems &amp; large bridgeworks).</li> </ul>
LTC	<ul> <li>No formal HE framework in place.</li> <li>Successful Tier 1 Main Works Contractors (c3 off) to procure using their T&amp;Cs.</li> </ul>	<ul> <li>LTC requires specialised structural assets (ie. tunnel systems &amp; large bridgeworks).</li> <li>Use of MP Transformation Delivery Programme themes similar to SMP.</li> </ul>
OD (AD)	<ul> <li>Asset Delivery (AD) - Scheme Delivery Framework (SDF) to be awarded mid-2021. RRS is specifically Band B Lot 4</li> </ul>	<ul> <li>Safe and reliable maintenance service.</li> <li>Prompt replacement of damaged barrier</li> <li>Safe removal of steel barriers posts</li> <li>Recycling of steel barrier</li> <li>Influencing original design with maintenance in mind</li> </ul>

**Conclusion:** critical to the delivery of majority of our infrastructure projects, it is a highly skilled service that cannot be ignored in the safe and successful delivery of any project. RRS sourced directly by the Tier 1 main contractors with each scheme tendering separately (though that is now changing with SMA and RDP now in place). This will allow us to build relationships with numerous designers and suppliers through a community approach and drive greater consistency across the subcontracts used under those header contracts for Major Projects investment programmes.



# **MP Transformation Delivery Programme & SEG**

SEG		Statement Define the needed by th and what is to define

Innovat Reappli	ion ied	Safety	Sou	rcing M	odel	Econo of Sc	omy ale	Specifi Simplif	ication fication	Standardisation	Offsite & MMC	Customer Benefits	Installation Productivity	Logistics	Quality	Environmental	Maintenance
Value Levers: (priority areas)		Removal/reduction in safety Risks through alternative methods of design and assembly	Inte ti Allia netw - ne with to dr pro re	egral pa ne overa nce sup vork stra eds to v supply ive incro ductivit duce co	rt of all oplier ategy work chain eased ty & ost.			Create of rule guidar RRS use diffe situa (DE	e a set es and nce for to be d in erent tions 3D)	Simpler Manufacture and installation with quality products- reflects whole life value from design and build through to maintenance and repair.	Increase use (Batching concrete and/or block form)	Reduce length of required closers and overall construction duration - shorter period of disruption to customers.	Alternative methods with off-site manufacture, standardised RRS with improved transitions.	Material delivered to site on time and in full to ensure no disruption to production	Right First Time	Reduction in Carbon, increase in recycling of materials. Re-use temp RRS as permanent. Better selection of Supplier by region to reduce drive past	Reduce maintenance cost and time through the use of replaceable sections of RRS
Requirement		Low Importance		1	2	3	4	5		High Importance		Business					
Assurance of supply	Disruptio on opera	n to supply has a minor in tions and / or reputation	mpact				Х		Security of supply is critical, disruption will affect safety and damage reputation		Owner	Structures Efficiency Group (SEG) Themes			mes		
Quality	Quality is operatio	sues have minimal impac ns and/or reputation	ct on				х		Quality performance has a major impact on our operations and/or reputation		impact on າ	<ul><li>Improved productivity</li><li>Better knowledge of assets, geology and gro</li></ul>		round			
Regulatory, Ethical, Environmental	Compliar regulatio our opera	ice to ethical, environme ns have a minimal impact ations or our reputation	ntal or t on				x		Complian environm our opera	Compliance to regulatory, ethical and environmental issues has high impact on our operations and/or our reputation		<ul> <li>SMP profiles</li> <li>Maximise use of existing infrastructure</li> <li>Challenging standards (Digitally Ready)</li> </ul>		astructure ally Ready)			
Service	Flexibility levels car minimal i	in delivery dates and ser be accommodated with mpact	rvice			x			Late delivery / low quality has a major impact on operations / reputation		delivery / low quality has a major act on operations / reputation		Improved	productivit	y		
Cost	Cost com requirem	petitiveness is not a majo ent	or				х		Cost competitiveness is highly important as is the ability to understand costs drivers of product / service		<ul> <li><b>RIP &amp; CIP</b></li> <li>Certainty in delivery</li> <li>Designing out waste</li> </ul>						
Innovation	R&D capa innovatic operation aims	ability or investments in on has minimal impact on ns and/ or wider governm	hent				x		Excellent R&D / product engineers and investments to innovate are critical to our operations and/or reputation		Operations	<ul> <li>Faster int</li> <li>Better kn timely int</li> </ul>	terventions owledge of erventions o	(less dis asset co done	ruption) Indition so cor	rect and	



**Conclusion:** opportunities for improved RRS products exist and need to be piloted to test different design and installation solutions. A Concrete Barrier Alternative Approach document from 2018 must be explored further and implemented where appropriate. It has been identified that potentially we are over engineering concrete barrier and is an agenda item for the RRIG.

### **Historical Spend RIS1**

(based on Target Prices with inflation adjustment)





# **Demand Profiles**



### Intentionally left blank

highways england

# **Forecast Spend**



Intentionally left blank



17

**SDF Structures Forecast Spend (OD)** 



# **Product Description**





#### Road Restraint Systems

Road Restraint Systems (RRS) border the majority of the Strategic Road Network (SRN), including new SMP developments and RIP projects.

There is currently over 8000 miles of road restraint system on our network, which includes rigid systems that are the new central reservation standard for Smart Motorway Project (SMP).

Roadside barrier systems are used to contain vehicles, prevent vehicles colliding with hazards and obstacles and to prevent drivers from traversing the central reservation of the highway resulting in a head on collision.

Common sites to install a barrier are to protect bridge ends, restrict access to steep or vertical slopes and near large infrastructure which may pose a hazard.

#### **Product Components and Key Requirements**

Any system developed and deployed on the highway must undergo rigorous testing to ensure compliance to the needs of Highways England.

Testing needs to be to EN1317. Permanent safety barriers and crash cushions need to be CE/UKCA marked. All other products need to comply with Highways England assessment requirements.

The barrier systems in place have seen development since their original deployment and are now focused on containment of an errant vehicle.









# **Product Description**





Туре	Temporary / Permanent	Description	
Rigid Concrete Barrier (RCB)(Slip form)	Permanent	Rigid Concrete Barrier (RCB) is a vehicle restraint system designed to contain vehicles, reduce congestion and be maintenance free for at least 50 years. RCB has the ability to contain coaches/buses up to 13 tonnes under predefined test conditions. The in-situ installation is done by means of a slipform paver using ready mixed concrete. This kind of installation allows very high daily production rates and consequently competitive prices. The barrier can be tied to the substructure (a cement treated or asphalt base layer) or can be surface mounted without any anchoring.	
Rigid Concrete Barrier (RCB)(Precast)	Both	Prefabricated elements are manufactured in an indoor environment and assembled on the worksite, making their installation less dependent on climatic conditions. Since they can easily be displaced, they are very often used for protection of the work site during road construction.	
Steel	Both	Steel Barrier comes in single sided and double sided solutions, for verge and central reservations. It can be installed using a variety of post foundation types to accommodate the surrounding environment. Steel barrier is often terminated with the P1 or 4 terminations and can be fitted with a lower guard rail if needed on sharp corners where motorcyclists are at most Risk.	bigbways
			england

# **Delivering better environmental outcomes**

- Supporting government's ambition to achieve net zero UK carbon emissions by 2050
- We will reduce our carbon footprint through initiatives such as introducing energy-saving measures form using low-energy lighting.
- Maximising opportunities for sustainability We are committed to putting sustainable development into practice.
- Improving safety and quality of life for current and future generations. We will use our resources more efficiently, minimising demand for materials extracted from the ground and maximising re-use.



- Reducing the cross sectional area of the RCB & Removing the steel reinforcement while maintain the H2 standard
- Working with Tarmac (Emma Hines) to look at new low carbon concretes.

- GUARD-LED is a polyurethane membrane that fits over the top of new and existing safety barriers which is equipped with LED lighting.
- The LED lighting consumes low energy and is sufficient to light up the roads according to current standards; coupled with our environmental panel designed to generate Solar Energy, we could create a self-contained environmentally friendly highway lighting system.









# **Value Chain Analysis**



Value Chain	Value Factors	Current Situation	Changes Needed
Design Procurement Manufacturing	<ul> <li>Efficiency - Value engineered, standardised design, used many times, avoiding repeat design</li> <li>Efficiency - savings from bulk procurement and mass production opportunities</li> <li>Quality - improved consistency through Modern methods of Construction</li> <li>Safety - reduced time on site &amp; lower accident frequency rates</li> </ul>	<ul> <li>Repeated design resulting in over-complicated, non-standardised, bespoke designs which can vary from scheme to scheme</li> <li>No demand planning or forecasting</li> <li>No Business System, one set of numbers</li> <li>Procured by individual delivery partners via a RRS community on a scheme by scheme basis</li> </ul>	<ul> <li>Use expertise of the tier 2 &amp; 3 Suppliers in value- engineering a standardised RRS design</li> <li>Examine use of lighter materials in line with expected lifespan (already used in the EU)</li> <li>Create HE 'one set of numbers' through a business system that is supported by a business team.</li> <li>Implement the D&amp;OP process through the whole business.</li> </ul>
Installation	Efficiency - reduced installation time through efficient methods or removal and installation	<ul><li>No formal structure or framework</li><li>No bulk procurement or manufacturing</li></ul>	<ul> <li>Share supply plan with supply chain partners to enable planned procurement of materials and resource planning</li> </ul>
Technology Fitting Operation Maintenance	<ul> <li>Efficiency - improved interfaces with other assets</li> <li>User satisfaction - familiar and consistent appearance</li> <li>Network condition - easier maintenance through designed for maintenance</li> </ul>	<ul> <li>No consistent installation methodology</li> <li>Incompatibilities with other RRS &amp; other assets</li> <li>Inconsistent appearance of RRS across the SRN</li> <li>Steel barrier is sold for scrap by supplier, potential to re-use</li> </ul>	<ul> <li>Implement a slick, consistent and repeatable methodology for installing RRS using standardised RRS and component designs</li> <li>Investigate potential savings and safety benefits from off-site manufacture</li> </ul>
Decommissioning	<ul> <li>Environment - potential to re-use steel barrier where it has not reached end of life</li> </ul>		<ul> <li>Standardisation of RRS, components and interfaces</li> </ul>

**Conclusion:** a RRS Strategic Procurement Strategy (SPS) will ensure earlier engagement with Tier 2 & 3 sector suppliers, and adopt a joined-up approach to sourcing, this in turn will influence the design at a much earlier stage in the process and drive efficiencies. This will lead to an improved alignment between all supply chain partners (Tier 1-3), and to HE goals and outcomes, rather than the historical method that has seen non-alignment with less desirable results for all parties. Create a HE business system that meets the business needs and establishes one set of numbers. We have the opportunity to create a win/win environment where we can deliver to common outcomes whilst aligning to HE's needs.



22

# **Value Stream Mapping**





# **Supplier Engagement**



**Conclusion**: the RRS Supplier Community welcomed the new approach and methodology and are eager to collaborate with all stakeholders. Embracing ideals of earlier engagement to incorporate Design for Manufacture & Modern Methods of Construction, sight of pipeline to aggregate long-term demand, and collaboration on cross functional areas such as method statements, Risk assessments and toolbox talks.



# Supply Chain Mapping – value and objectives



**Conclusion:** Road Restraint Systems are a vital part of maintaining safe conditions on the Strategic Road Network. They are often provided by specialist RRS suppliers but can be procured as pre-made products and installed separately.



# **Market Insight and Landscape**





# Supplier Capability and Capacity – including industry accreditations

The information is not exhaustive, please see the embedded spreadsheet and supplier websites.





# **Supplier Financials**





# **Key Risks**

Incomplete Costs

• Tier 1 Engagement

2

• Stake holders

Management

5

4

3

2

1

Impact  $\rightarrow$ 

Tikelihood ↓



**Conclusion**: We need to ensue that we continue to mitigate and monitor against COVID and Brexit as it continues to have implications for trade/material/supply/demand and workforce resource. The HE Risk profile could be further exposed by prescribing supply routes. Risks are best mitigated by open engagement with stakeholders.







Strategic Themes	Description	Benefits	Action
RRS02: RCB Improvement project	<ul> <li>Alternative approaches in the delivery of concrete barrier that align with HE delivery priorities.</li> <li>Circa 24% saving in scheme cost over Do-Maximum **</li> <li>42% saving in duration **</li> <li>Cost over and above do minimum 22%</li> <li>Possible this system could be used on the M25</li> </ul>	• We believe that the Do-Optimum option, in combination with efficient scheme delivery, will deliver H2 containment concrete central reserve barrier at cost or close to that of a traditional soft verge N2 containment steel barrier, when considering whole life barrier installation unit costs.	<ul> <li>Need to drive this project to conclusion</li> <li>Possible conflict of interest with drainage</li> <li>Use the leveraged of Innovation reapplied with the RIGG &amp; SMA asset group (Central reservation) to deliver this opportunity.</li> </ul>
RRS03a: Non- Hardening of Central Reserve	Option to leave the central reserve "soft" on both sides	<ul> <li>50% Saving in foundation and no disruption to original drainage scheme</li> </ul>	<ul> <li>Increased maintenance of the verge</li> <li>Safety of team cutting verge</li> <li>Use the leveraged of Innovation reapplied with the RIGG &amp; SMA asset group (Verge) to deliver this opportunity.</li> </ul>
RRS03b: Central Reserve Profiling	Opportunity to profile central reserve to generate savings	<ul> <li>Creates the required footing profile quickly and accurately</li> <li>No need for measurement of the footing, less team members needed on site.</li> </ul>	<ul> <li>Use the leveraged of Innovation reapplied with the RIGG &amp; SMA asset group (Central reservation) to deliver this opportunity.</li> <li>Only applies to RCB</li> </ul>
RRS04: D&OP	<ul> <li>Drive the demand and operations planning process through HE</li> </ul>	<ul> <li>Agreed demand and supply plan's</li> <li>Agreed financial plan</li> <li>One set of numbers</li> <li>Investigate material arrangement to flatten pricing and obtain efficiencies of scale .</li> <li>Option for Suppliers to buy, store, call-off on HE behalf.</li> </ul>	<ul> <li>Continue to drive implementation of the process through the D&amp;OP Sector improvement project &amp; the Demand forecasting project</li> </ul>



# Strategy (continued)



RRS Strategy	Description	Benefit	Action
RRS05: Integrated VRS & Environ Barrier	Integrated VRS & Environ Barrier	<ul> <li>Dual purpose</li> <li>Reduced footing and ground work</li> <li>Efficient use of available space</li> <li>Work with designers and supplier community to develop standardised design.</li> <li>Rollout via Innovation Reapplied - to deliver cost reduction savings.</li> </ul>	<ul> <li>Work with Suppliers to develop opportunity</li> <li>Use the leveraged of Innovation reapplied with the RIGG &amp; SMA asset group (Verge) to deliver this opportunity.</li> </ul>
RRS06: Recycling Steel Barrier	<ul> <li>12% saving on scheme</li> <li>Opportunity to remove &amp; re-use steel barrier where it has life remaining</li> <li>Could be used as temporary barrier</li> </ul>	<ul> <li>Reducing the need to procure new steel barrier</li> <li>Lowering carbon</li> <li>Reduced logistics</li> </ul>	<ul> <li>Need to replace all used posts</li> <li>Necessitates an inspection of the barrier</li> <li>Barrier must have remaining useful life</li> </ul>
RRS07: Support SMA RRS Procurement	<ul> <li>Bringing our RRS Supplier Community together with SMA to discuss delivery objectives &amp; develop strategy ahead of the procurement exercise.</li> <li>SMA Supplier Network Leads have identified their priority categories and aligned with SPD Category Tree.</li> </ul>	<ul> <li>Integral part of the overall Alliance supplier network strategy - creates aligned RRS strategy that supports SMA objectives and drives increased productivity &amp; reduces cost.</li> <li>Will support evidence for efficiency registers and submissions for ORR/Transport Focus.</li> </ul>	<ul> <li>Support the development of SMA CPS for procurement in Feb 2021: Share Procurement Balanced Scorecard and contract options for RRS:</li> <li>Work with Suppliers to build confidence in the commercial model</li> </ul>
RRS08: RRS Supplier Community	<ul> <li>Establish a supplier community from designers, manufactures and installers.</li> <li>Improved engagement in the early phase to allow us and supply chain to realise additional value. (Demand Plan)</li> <li>Provide visibility of HE pipeline and programme so suppliers can investment in people, facilities and innovation.(Supply Plan)</li> <li>Improve alignment between our supply chain (tier 1-3) and HE goals and outcomes.</li> <li>Grow capability of the market place to have required installation experience - upskill the supplier base during RP2.</li> </ul>	<ul> <li>Create a win/win environment where we deliver to common outcomes (which should align to HE's needs).</li> <li>Ensure capability &amp; capacity to deliver RP2.</li> <li>Removal/reduction in safety Risks through alternative methods of design and assembly.</li> <li>Real opportunity &amp; value delivered through early engagement approach.</li> <li>Turn lessons learned into best practice through strong SRM.</li> <li>Greater supply chain collaboration to share innovation and drive efficiencies.</li> </ul>	<ul> <li>Manage RRS Supplier Community:</li> <li>Earlier engagement is the way to unlock value and drive efficiency. We need to procure and engage differently to allow tier 2/3 suppliers to influence in the development phase, rather than reverse/value engineer in delivery.</li> <li>Better D&amp;OP planning and forecasting to enable the supplier base to optimise manufacturing efficiencies and reduce overall time of site and associated roadworks.</li> </ul>

# **Strategy (continued)**



RRS Strategy	Description	Benefit	Action			
RRS09: Align Strategies for MP Investment Programmes	<ul> <li>Ensure RIP, CIP &amp; LTC also align to MP Transformation Delivery Programme.</li> <li>Sourcing RRS and auxiliary materials as per the current Tier 1 Header contracts.</li> <li>Supports efficiency registers and submissions for ORR/Transport Focus.</li> </ul>	<ul> <li>Collaborative approach delivering increased efficiency to meet HE targets with ORR.</li> <li>Tier 1 sub-contracts and community approach requires no in-house HE procurement resource – allows alignment to incentivisation model &amp; mechanisms in their Header contracts (ie. SMA, RDP &amp; BSDF).</li> </ul>	<ul> <li>Finalise RDP strategy for their approach to RRS – individual/regional/national arrangements.</li> <li>Identify and agree baseline cost reduction targets.</li> </ul>			
RRS10: Implement Cost Reduction Process	<ul> <li>Baseline, monitor and demonstrate cost reduction - work with all stakeholders to increase productivity and efficiencies.</li> </ul>	<ul><li>Demonstrates cost reduction.</li><li>Helps motivate increased productivity and efficiency.</li></ul>	<ul> <li>Engaged Tom Halsted on 'cost reduction' process and model – use reporting process when up and running.</li> </ul>			
RRS11: Logistics & Installation	<ul> <li>Reduce carbon impact by efficient use of transport and improved methods of installation.</li> <li>Promote circular acconomy</li> </ul>	<ul> <li>Reduce both the length of closures required and overall construction duration (ie. overall less time in constriction – shorter period of disruption to customers).</li> <li>Standard processes in manufacture and installation, and better managed logistics.</li> <li>Reduced Traffic Management requirement and lane closures impacting our customers.</li> <li>Better health and safety due to reduced occurrence of working in the same area as other trades</li> </ul>	<ul> <li>Continued engagement with business investment programmes, DD, IR and RRS Suppliers</li> <li>Agree logistics &amp; Installation project targets with business owners - identify potential cost reduction and implement solutions to deliver efficiencies.</li> <li>Support investment programmes and contribute to their efficient registers for ORR submissions.</li> </ul>			



# **Strategy (continued)**



RRS Strategy	Description	Benefit	Action
RRS12: Scheme Delivery Framework (SDF) Performance	<ul> <li>Operation Directorate will use the Asset Delivery Scheme Delivery Framework (SDF) to be awarded mid-2021. RRS part of Band B Lot 4.</li> </ul>	<ul> <li>Operations have their own arrangement that they support.</li> <li>Chance to incorporate SDF supply chain into our supplier community and monitor &amp; report efficiencies and cost reduction.</li> <li>Capture best practice for future strategy.</li> </ul>	<ul> <li>Engage SDF operation and process for data capture/reporting from Ops regions/areas.</li> <li>Use efficiency &amp; performance data to assist develop next strategy for Asset Delivery.</li> </ul>
RRS13: Carbon Reduction	<ul> <li>Support SMA and other business areas in addressing our carbon reduction targets.</li> <li>Work with Digital by Default &amp; our supplier community to develop solutions, including Modern Methods of Construction (MMC) and Sustainable Sourcing.</li> </ul>	<ul> <li>Improved environment and contribution to HE carbon-neutral commitment.</li> <li>Possible 50-70% reduction of carbon</li> </ul>	<ul> <li>Work with all investment programmes in collaboration with our supplier community to improve sustainable souring solutions.</li> <li>Work in collaboration with Tarmac and SES to introduce low carbon concrete RCB.</li> </ul>
RRS14: Materials & Aggregation	<ul> <li>Consider utilising alternative materials for our RRS.</li> <li>Central procurement of steel - buying process with associate stock holder company to get surety of supply and maximise value.</li> </ul>	<ul> <li>Requires further investigation.</li> <li>Aggregation to obtain a standard cost, secured source and space in mill production.</li> <li>Possibility of working with other large infrastructure projects.</li> </ul>	<ul> <li>Bring to the attention of DD and SEG for further discussion.</li> <li>Make this part of the ongoing agenda at RRS Supplier Community, along with Safety and Innovation Reapplied Value Levers.</li> </ul>



# **Opportunities**



Strategic Themes	Opportunities	Benefits	Obstacles
Supplier Relationship Management	<ul> <li>Bring the RRS supply chain closer to Highways England (HE).</li> <li>HE to have a better understanding of their issues.</li> </ul>	• HE will have a more proactive relationship with this very important and critical service in the delivery of many of our large infrastructure schemes.	• The suppliers have not worked with HE for some time and may take time to understand our processes and procedures, and the time they take.
Sourcing Strategy	<ul> <li>Incentivisation of offsite manufacturing.</li> <li>Bulk/mass procurement of standardised products.</li> </ul>	<ul> <li>Giving HE ensured access to the successful suppliers when this type of service will become highly sort after with the advent of the other large infrastructure projects being rolled out.</li> </ul>	<ul> <li>Many smaller SME type suppliers will not be geared up to meet the requirements of HE and will require help for us to grow.</li> <li>Requires a good D&amp;OP and forecast</li> </ul>
Continuous Improvement	<ul> <li>Through sharing of best practice at the supplier community.</li> <li>Working with MP (Digital by Default and Innovation Reapplied) and OD (SEG).</li> </ul>	• Generated at both a strategic and operational level, through better collaboration for the former and better incentivisation for the latter.	• The suppliers may take time to understand the benefits of working together which they feel may affect their competitive edge in other contracts.
Innovation	• Reward innovation and actively encourage suppliers to work together to come up with better ways of working - through supplier community and stronger relationships with our business owners and Delivery Partners.	<ul> <li>The innovation outputs will help deliver a service that is both safer and quicker with the same high quality outputs.</li> <li>Will give supply chain closer access to sight of pipeline and innovation funding.</li> </ul>	<ul> <li>Suppliers may not want to share innovations because of the perceived effect on there competitive edge.</li> </ul>
Performance Indicators	<ul> <li>Develop performance indicator relevant to the type of work that is being done.</li> </ul>	<ul><li>The suppliers align better to these metrics.</li><li>Increased safety and performance.</li></ul>	HE will need to have a deeper understanding of the supply chain.

**Conclusion**: through the strategies identified in this section there is a realistic chance to support individual investment programmes in their objective to meet HE efficiency targets, and contribute to their scheme efficiency registers evidenced to the Office of Rail & Road (ORR). We will work in collaboration with Innovation Reapplied to identify and increase our productivity by 30% in RP2, and deliver cost reduction.

