

Capital Efficiency Delivery Plan

Road Investment Period 1

Version 1.1 Updated November 2016



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Highways England

Highways England operates, maintains and improves England's motorways and major A roads.

We are responsible for motorways and major (trunk) roads in England. Our road network totals around 4,300 miles. While this represents only 2% of all roads in England by length, these roads carry a third of all traffic by mileage and two thirds of all heavy goods traffic.

England's major road network:

- Forms the economic backbone of the country.
- Is open 24 hours a day, seven days a week, and
- Relied on by communities and businesses across the country.

We will deliver £15 billion of investment on our road network as described in the government's Road Investment Strategy (RIS). This includes £11 billion of capital funding committed between 2015 and 2020.

Our 3 key priorities as a business remain constant and lie at the heart of all we do:

- Safety is our number one imperative. We want to be a company that consistently delivers world class safety performance.
- We want to deliver our commitments to our customers and be recognised for excellent customer service.
- We must also deliver the Road Investment Strategy – whilst driving best value for the bill payers and working more efficiently and effectively.

Delivering capital efficiency

The Road Investment Strategy sets an expectation on Highways England to deliver at least £1.2 billion in efficiencies over 5 years to reinvest in the network, delivering year-on-year capital efficiency savings and best value for taxpayers.

This represents one of the 8 key performance indicators (KPI) that will determine Highways England's success over this first roads period.

We agreed with government that we would aim to meet or exceed the expectations set out in the Delivery Plan. We are committed to deliver total efficiency savings of over £2.6 billion over the next ten years.

Our Strategic Business Plan (SBP) sets out the strategic outcomes. Our effectiveness will be assessed by the extent to which these outcomes are achieved with the funding available. This will be measured against the KPIs, targets, requirements and outputs in the RIS. The definition of efficiency and processes for reporting are contained within Highways England's *Efficiency and Inflation Monitoring Manual* which was published in September 2015.

We intend to add value benefits through:

- Reducing costs to deliver the same product and/or outcomes.
- Producing higher quality/longer lasting products.
- Early or increased realisation of benefits.
- Reduction of negative economic consequences.

This document, the Highways England Capital Efficiency Delivery Plan, summarises the processes to manage efficiency generation and the related controls designed to ensure that the annual milestones and cumulative targets are met.

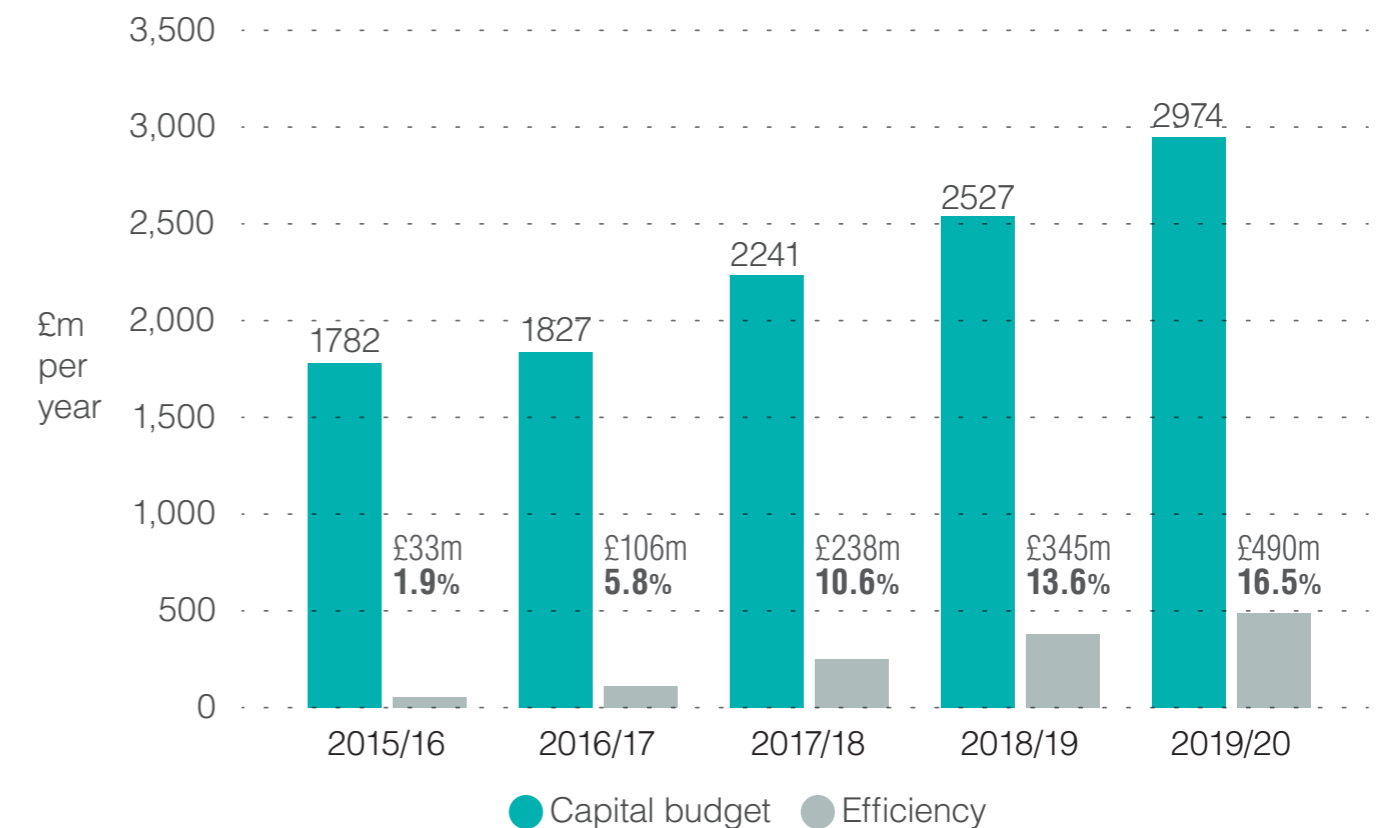
Figure 1 The efficiency KPI

The efficiency KPI set in the Performance Specification is:

Efficiency – summary table	
KPI	Cost savings: Savings on capital expenditure. Delivery Plan Progress: progress of work, relative to forecasts set out in the Delivery Plan, and annual updates to that Plan, and expectations at the start of RP1.
Target	Cost savings: Total savings of at least £1.212 billion* over RP1 on capital expenditure. Delivery plan progress: meet or exceed forecasts.
PI	Suite of PIs to demonstrate that the portfolio is being developed and the Investment Plan delivered in a timely and efficient manner. These should include the progress of major schemes and programmes in construction through reporting CPI and SPI for schemes at Project Control Framework Stage 5 and beyond.
Requirements	Demonstrate on an annual basis how efficiencies have been achieved.

* This target figure is in nominal terms, and is based on the efficiency assumptions used to develop the Investment Plan. In the event that the Investment Plan undergoes significant revision - for example, movement between funding lines or years - the efficiency assumptions that underpin this target may need to be revised which might necessitate a change to the target.

Figure 2 Achieving real efficiency – Capital efficiency projection 2015-2020



Accountability and governance

Highways England recognises the importance of driving efficiencies across the business and has developed a robust accountability and governance framework to ensure that there is oversight at the highest level.

The framework provides a clear line of sight for the Highways England Board and Executive Management, responsible for the oversight of the company and its operations, and for meeting the commitment made in the Delivery Plan to fulfil the RIS.

The governance and accountability framework also ensures that the wider business takes responsibility and ownership for delivery of the efficiency targets.

The chief executive is accountable for delivering this KPI target and collective responsibility is through the members of the Highways England Executive.

The executive director, Commercial and Procurement is the lead on commercial assurance of the end-to-end process, whilst the executive director, Operations and the executive director, Major Projects are the key delivery directors. The Highways England Board monitors delivery of the efficiency target.

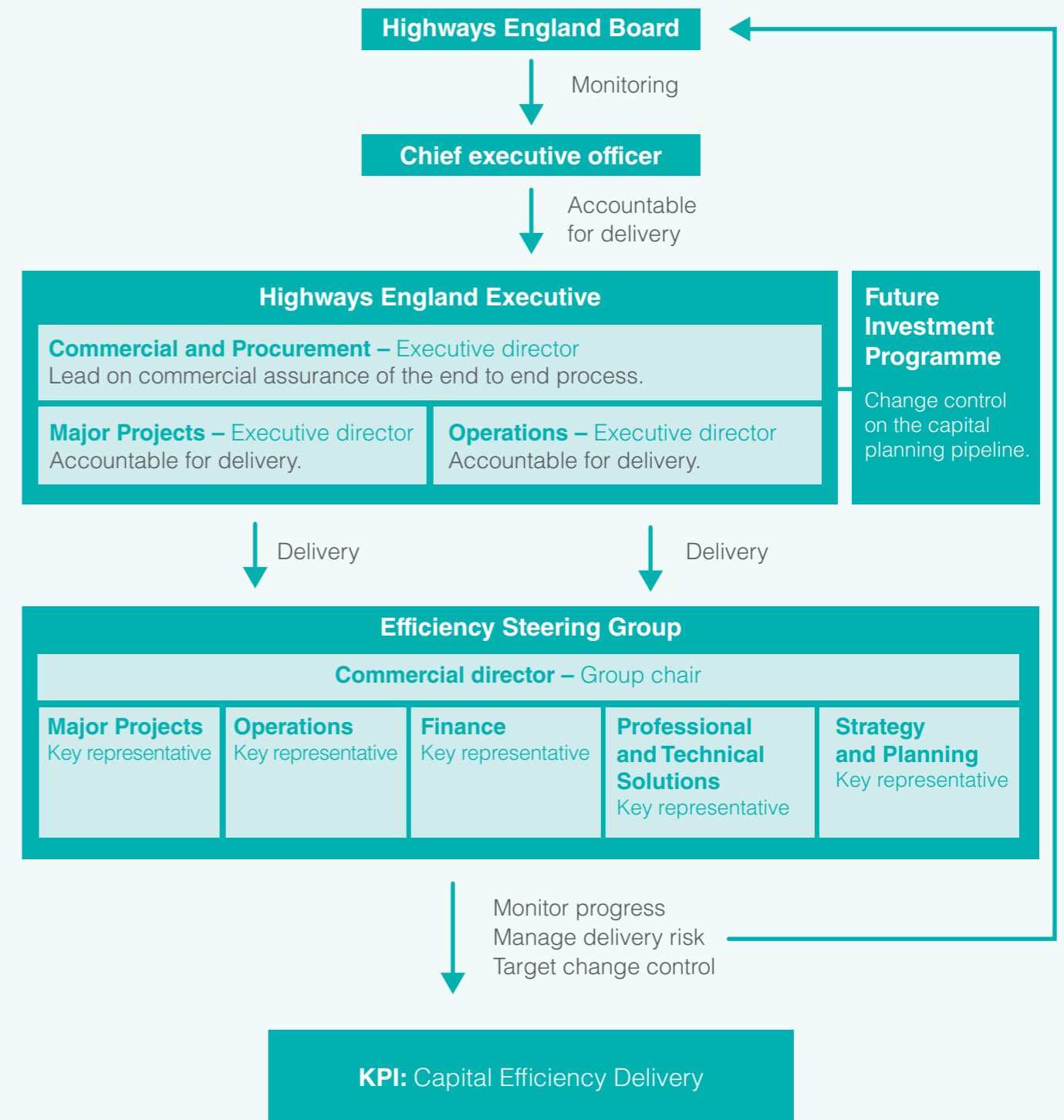
We have created an Efficiency Steering Group chaired by the commercial director and consisting of representatives from each of the key directorates; Operations; Major Projects; Finance; Professional and Technical Solutions; and Strategy and Planning.

They monitor progress, ensure that delivery risk is managed effectively and initiate target change control where appropriate.

The Operations and Major Projects executive teams monitor progress which is reported on a monthly basis across the company.

FIP (Future Investment Programme) is a sub group of the Highways England Executive which controls and undertakes change control on the capital planning pipeline.

Figure 2 Capital efficiencies accountability and governance



Responsibility

We have separated out the overall target and annual milestones to a programme level. This approach has been approved by the Executive and is subject to a formal change control process.

Relevant targets are also included in the personal targets of divisional directors and are linked to performance related pay.

We are also adding supplementary efficiency targets to the personal objectives of leaders across the company, ensuring the accountability for delivering efficiency targets is owned by the wider business.

The current approved breakdown is shown in **figure 4** below.

Figure 4 **Baseline efficiency rounded targets**

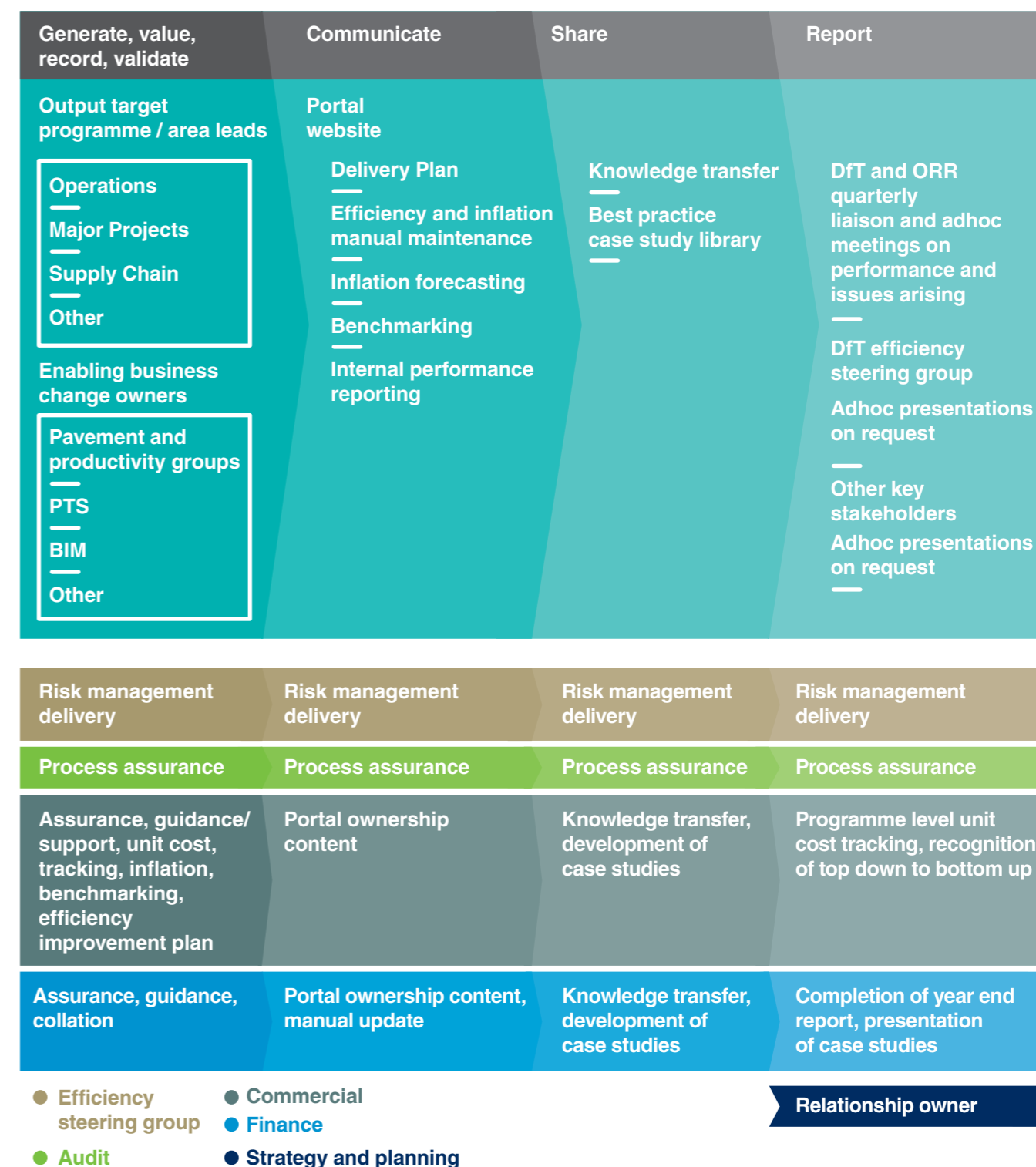
Owner	Year 1 15/16		Year 2 16/17		Year 3 17/18		Year 4 18/19		Year 5 19/20	
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
Regional Investment Programme (RIP)		2.3		11.2		26.0		55.6		114.1
Complex Infrastructure Programme (CIP)		1.0		6.1		35.1		72.2		112.4
Smart Motorway Programme (SMP)		2.2		22.7		58.5		151.5		301.6
Major Projects total		5.5		40.0		119.6		279.2		528.1
Yorkshire North East (YNE)	4.0		13.2		35.7		62.8		100.1	
North West (NW)	2.9		11.9		27.7		45.5		70.5	
Midlands (MIDS)	5.8		22.8		69.9		118.9		167.3	
South West (SW)	2.9		10.7		25.7		43.3		67.9	
South East (SE)	7.5		26.1		64.7		107.5		163.3	
East	2.2		8.9		20.5		33.7		52.1	
Traffic Technology Division (TTD)	0.3		1.1		2.2		8.8		25.9	
Network Resilience	0.1		0.5		1.3		2.1		3.4	
Winter Resilience	0.2		0.8		1.9		6.5		13.6	
Operations total		26.0		96.0		249.7		429.1		664.1
Other capex										
Commercial and Procurement (C&P)	0.1		0.4		0.9		1.5		2.4	
Professional and Technical Solutions (PTS)	0.1		0.4		0.9		1.5		2.4	
Finance	0.0		0.1		0.3		0.5		0.8	
Major Projects (MP)	0.5		1.0		3.1		5.4		8.6	
Operations Directorate (OD)	0.4		1.3		2.7		5.1		5.5	
Other capex total		1.3		3.2		7.9		14.0		19.6
Grand total		32.8		139.1		377.2		722.3		1,211.8
In year		32.8		106.4		238.1		345.1		489.5
Cumulative		32.8		139.1		377.2		722.3		1,211.8

Engagement

Effective engagement and targeted communications with our stakeholders, both internal and external is integral to informing, educating and embedding the drive for greater efficiencies.

Overall engagement is summarised in **figure 5** below.

Figure 5 **Efficiency stakeholder model**



Internal engagement

We have created a network of efficiency managers at programme and area levels within Highways England to act as a focal point for recording efficiencies in accordance with the *Efficiency and Inflation Monitoring Manual (EIMM)*.

The Finance and Commercial teams have led on internal engagement through a programme of targeted presentations to ensure that key individuals understand the contents of EIMM and their role in the overall process. We have directed this ongoing programme at efficiency managers, project sponsors, project managers and managers at all levels in creating, assuring and reporting efficiency delivery.

We have supplemented this with regular workshops where the efficiency community comes together in order to share experience and discuss ways of maximising delivery. Highways England has created an efficiency focused website which will form an integral part of its internal intranet Portal. This will initially be available to all Highways England personnel and later replicated on our Supply Chain Portal that is accessible by our existing suppliers.

The website will provide access to a comprehensive suite of relevant material. The content will range from an awareness of process and approach, through to a detailed understanding of efficiency creation, reporting or assurance. It will contain a library of case studies of innovation, process and operational changes delivered and assurance issues, in order to create an effective knowledge exchange forum.

Knowledge transfer

Major Projects operates a Knowledge Bank which encourages suppliers to offer examples of best practice (incentivised by increased performance scores where this approach is adopted on other schemes and by other suppliers).

Highways England has initiated a programme of workshops where the efficiency community (including suppliers) review opportunities and assured delivery cases.

This allows Highways England to review the opportunity to maximise delivery through building it into 'business as usual'. We incorporate lessons learned into value engineering undertaken routinely as part of any scheme review.

Where suppliers identify an opportunity which is either not covered by, or conflicts with an existing standard, we require them to submit a departures business case.

The Professional and Technical Solutions Directorate reviews departures at a technical level, with the Commercial Division providing support on the financial impact assessment. This normally results in the production of an interim advice note or chief highways engineer memorandum which is communicated internally to all Highways England personnel.

This process can authorise the immediate implementation of an agreed change. We subsequently incorporate the change into the standards covered in *The Design Manual for Roads and Bridges*.

These processes will be supported by the efficiency website when it becomes fully operational in December 2016.

Supply chain engagement

Highways England recognises that we must work collaboratively with our supply chain to meet our efficiency targets. We have created an engagement council at which key suppliers meet with us to discuss issues of mutual interest. Efficiency forms part of this agenda and has led to the creation of joint working groups; identifying ways in which efficiency can be realised without impacting on the sustainability of supplier operating models.

We recognise and share good practice through our annual supply chain awards. We encourage suppliers to innovate to drive efficiency and to submit their ideas and examples of how greater efficiency has been achieved. A panel considers these submissions prior to awards being made. The awards provide an additional focus on efficiency.

At a more local level, we hold an ongoing programme of workshops. We have revised the Collaborative Performance Framework (CPF) which measures both supplier performance and behaviour to ensure consistency of measurement across Operations and Major Projects.

We incentivise Major Projects suppliers jointly on project and programme delivery and performance/behaviour informs financial incentives and eligibility to be considered for future schemes. The incentive arrangement for operational suppliers is more complex but follows similar principles.

Performance measurement of Major Projects' suppliers includes earned value management to control delivery of cost and time out turn. This is a performance indicator for efficiency which enables Highways England to ensure that efficiency incorporated into scheme budgets is not being reduced through cost overrun.

CPF incorporates metrics covering all Highways England key performance indicators but specifically:

- A measure of suppliers contribution to the efficiency target.
- A measure of collaboration.
- The ability to score more highly by sharing best practice which is adopted by competitors.
- Reciprocal feedback on Highways England performance which may impact suppliers' ability to create efficiency.

Assurance and control

- The relevant efficiency reporting manager and the Portfolio Office (for MP) undertake primary assurance with local commercial support where required.
- The Financial Team undertakes a secondary assurance role.
- The Commercial Team is developing a supporting assurance capability.
- Highways England undertakes an audit prior to a quarterly review by DfT and ORR.

We achieve control of delivery at five levels:

1. Comparison of actual to target at programme and area level.
2. Comparison of actual against the Delivery Plan forecast (see below).
3. Development of commercial unit cost modelling capability to:
 - Forecast efficiency delivery by programme and area.
 - Calculate top down efficiency based on unit cost movement.
 - Explain variances between top down and bottom up (EIMM) efficiency evaluation.
4. Through governance processes.
5. Through assurance and completeness checks.

Whilst it is a more straightforward matter to assure the rationale and evaluation of a case submitted, it is more complicated to identify efficiency delivered but not reported (ie the assurance of reporting completeness). For this reason, the central commercial team is undertaking a completeness check on reporting by reference to:

- Efficiencies forecast at the point where scheme funding is approved (IDC).
- Past interventions of the Professional and Technical Solutions and Lean teams.
- Scheme risk and opportunity registers.
- Value engineering workshop notes.
- Comparison of scheme and programme pre-efficient unit cost baselines.

Efficiency Delivery Plan

We have undertaken a comprehensive review of all 90+ business changes which have the potential to contribute directly or indirectly to delivering the efficiency target. The leaders of each change have identified the scope and timing of work, produced a Red Amber Green (RAG) rated range forecast of the benefit to be realised and allocated the benefit by programme and year.

We have removed potential duplication of forecast by excluding the indirect contribution of Professional and Technical Solutions (PTS) (including Lean) support and reducing by 10% the sum of the individual changes to calculate the programme efficiency opportunity forecast. (Note: the programme is dynamic and is being monitored closely).

We have aligned the individual changes to the efficiency themes in the Delivery Plan to form the basis of a range forecast of indicative emerging opportunities. This is illustrated in **figure 6**.

Through this process, we have identified key delivery enabling changes as illustrated for Operations and Major Projects in **figures 7** and **8** on the next page.

Figure 6 **Efficiency stakeholder model Delivering RP1 Efficiency KPI –** indicative emerging view of opportunities

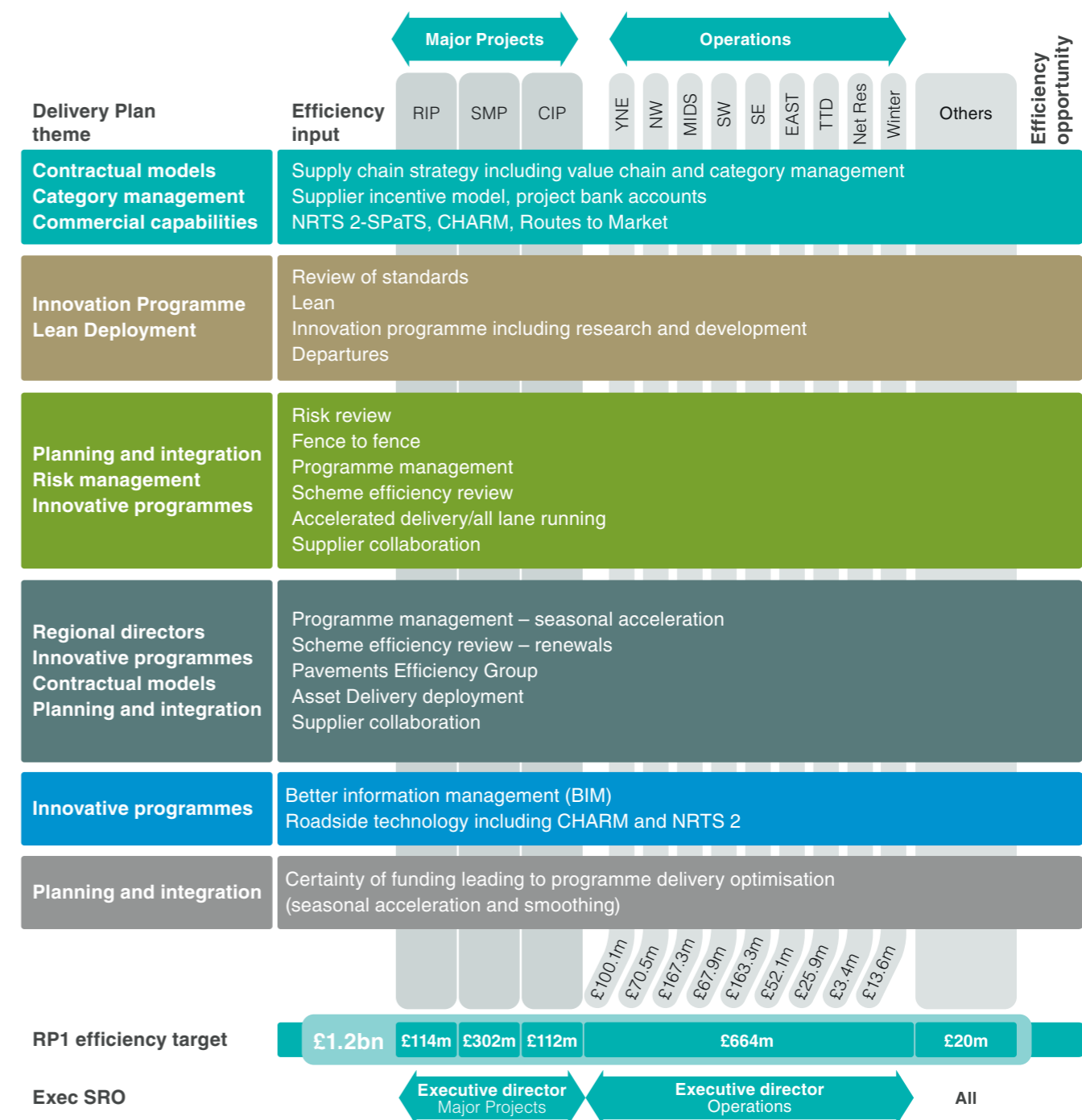


Figure 7 Operations delivery director’s regional target – RP1: £664.1m

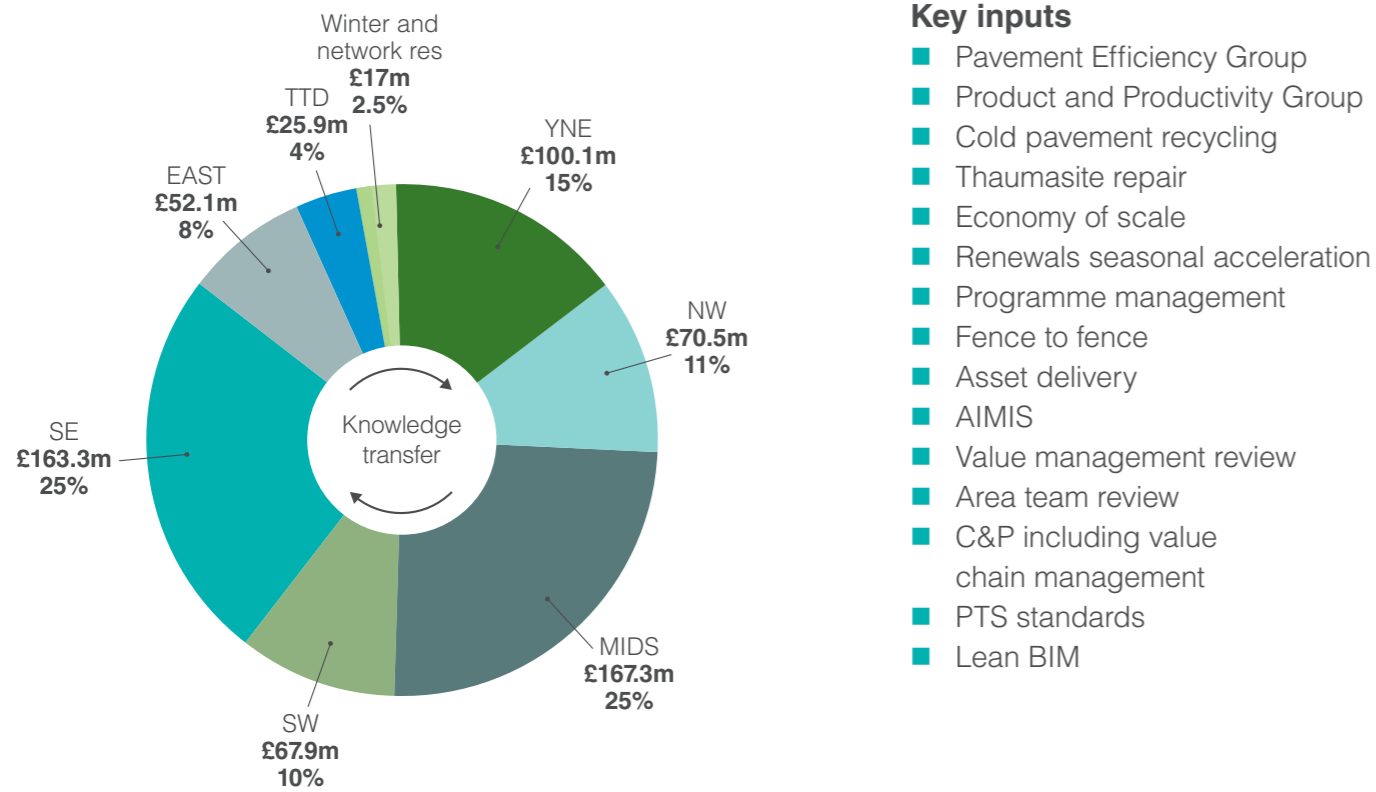
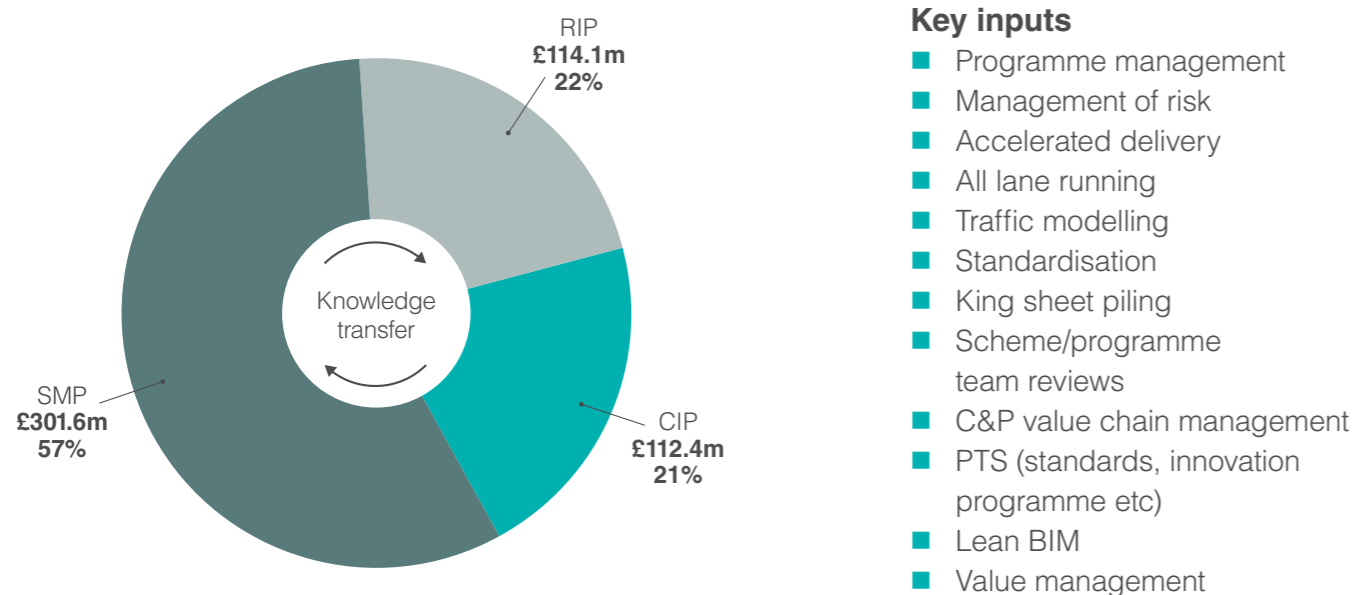


Figure 8 Major projects delivery directorates overall efficiency target – RP1: £528.1m



Efficiency opportunity range forecast

We believe that it is appropriate to qualify the accuracy of the range forecast of efficiency opportunity, based on the sum of the individual emerging enabling changes, at this point in time. It is being monitored closely as part of the

governance and control process and will be changed dynamically as the programme matures. The value of the range forecast as at September 2016 is £1.0-1.5bn.

Summary of more significant joint Highways England and supplier reviews on efficiency generation opportunities.

Operations

Pavement efficiency group (forecast £50-£350m)

Scope includes maximising the renewals working window, weekend closures, logistics and productivity, haulage, standardisation, Major Projects resurfacing as agent for Operations Directorate, Polished Stone Value (PSV) and long-life/low noise surface.

Asset Delivery (forecast £53m)

Revised business model to in-source some aspects of renewal delivery being deployed on a phased implementation. Effectively engages directly with former tier 2 suppliers avoiding tier 1 costs.

Renewals seasonal acceleration (forecast £28m)

Five year funding enables a greater proportion of capital renewals to be undertaken in summer months leading to cost reduction and extended asset life.

Renewals economy of scale (forecast circa £50m)

Certainty of funding and planning horizon enables resurfacing scheme size to increase. Leads to efficiency through economy of scale on scheme fixed costs.

Thaumasite repair (forecast under review)

Innovation enabling concrete decay local to some geographic areas to be treated avoiding the need to replace structures.

In situ recycling (forecast £30m+)

New technology under pilot in area 14.

Fence-to-fence (forecast under review)

Renewals programme scheduling change which enables all planned work required to be undertaken in one visit with the intention of no return within five years.

Product and Productivity Group (forecast £50m)

Scope includes road space management; SILOS time chainage location, governance /decision making, RFT in design and sharing innovation.

Technology and IT provision (forecast £88m)

Scope includes remote access, HADECS upgrade, integrated asset management system, asbestos management, wireless service to SMP/RIP and CHARM (advanced asset management system).

Major improvements

Smart Motorways (forecast £150-£500m)

Scope includes changes to accelerate delivery (reducing time related cost), delivery of piling, traffic management, gantries, signs, safety barriers, foundations, communications, prelims, earthworks and design.

Regional investment programme (forecast £114m)

Scope similar to SMP (excluding all lane running).

Complex Infrastructure Programme (forecast £112m)

Scope similar to RIP above.

Changes delivering portfolio efficiency

PTS (forecast £100-400m)

Scope includes review of standards, departures and innovation programme.

Better Information Management (BIM) (forecast £42m)

Creation of BIM modelling capability.

Lean

Highways England has increased the size of the Lean Division within the Professional and Technical Solutions (PTS) Directorate. This provides comprehensive support to delivery managers to facilitate the delivery of efficiency forecast at £250m. To avoid duplication, this value is not included in the efficiency range forecast.

Management at programme level and management of risk (forecast £50m+)

Scope includes programme co-ordination on renewals and major improvements and management of project, programme and portfolio risk.

Value chain review (forecast under review)

Highways England has initiated an ongoing detailed review of the value chain on all aspects of capital delivery.

Commercial and Procurement (forecast £40m)

Scope includes supplier procurement and operation of project bank accounts.

Risk management

We operate a risk management plan which is reviewed monthly by the Efficiency Steering Group. The key risks relate to:

- Evaluation and control of the capital planning pipeline.
- Internal and external engagement.
- Best practice identification and deployment
- Application of the *Efficiency and Inflation Monitoring Manual*.
- Data quality.
- Pre-efficient baseline and unit cost modelling.

Efficiency improvement plan

We are implementing an efficiency improvement plan which is monitored by the Information Leadership Group. This is a cross-directorate group chaired by the information technology director.

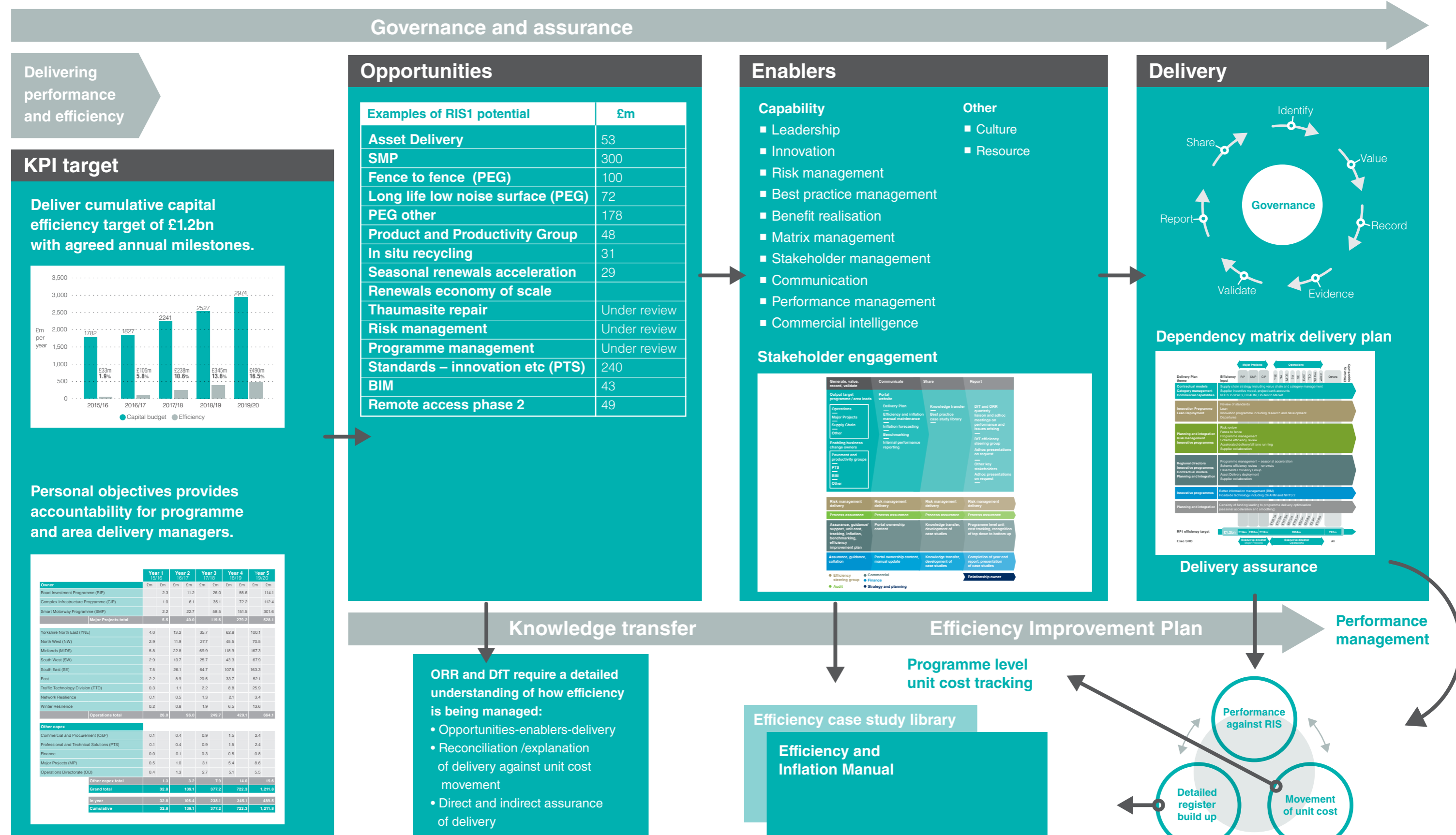
The key elements of future action to improve efficiency delivery are:

- Internal and external benchmarking
- Data quality
- Process maturity

End-to-end process

The delivery of efficiency requires a robust end-to-end process which is now in place. This is summarised in **figure 9** below.

Figure 9 Highways England Efficiency Delivery Model



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Highways England creative job number **N160284**

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Highways England Company Limited registered in England and Wales number 09346363